The Role of Content Management in Wired Organizations

How organizations of all types can benefit from a Web content management solution

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Introduction

Websites play a vital role in the marketing and communications strategies of organizations now more than ever. When properly managed, a website helps with employee recruitment and retention; enhances communication with constituents; and helps maintain relationships with your ecosystem of customers, partners, and prospects.

Content management technology is at the core of many Web infrastructures. It is also one of the most rapidly adopted technologies today. A Web Content Management System (CMS) provides a number of benefits by facilitating the easy creation and management of Web content through the entire content lifecycle. CMS' enable organizations to maintain the look and feel of the brand online; deliver content on a timely basis so it is always current and fresh; relieve the pressure on IT and Web developers so they can focus on innovation rather than spend valuable time managing Web content; build Web communities that enable site visitors to experience and interact with the brand so they keep coming back; and put content creation back in the hands of content managers and allow them to be more productive and efficient.

CMS' squarely address the complex, everyday Web challenges of wired organizations, including:

- **Maintaining your online brand** and tighter control over the 'look and feel' across all sites.
- **Decentralizing content management** by enabling business users to create and manage the content they own.
- **Enabling non-technical users** to easily create, manage and publish any type of Web content (text, images, video, Web 2.0, etc.).
- **Reusing content** throughout the site to increase consistency and accuracy and improve productivity and efficiency.
- **Publishing content** (i.e. Web pages, Word, PDF, images, multimedia, etc.) to standardized formats (i.e. RSS, podcasts, etc.) and making it available to external devices (i.e. PDA's, mobile devices, etc.) and applications (i.e. portals, ERP systems, etc.).
- **Integrating with external applications** including customer relationship management, marketing automation, and enterprise resource planning systems and portals.
- **Adhering to Web standards** such as 508 accessibility and ensuring HTML code is clean.
- **Leveraging Social Media capabilities** and making websites engaging and interactive with community-focused blogs, profiles, calendars, forums, and so on.
- **Enhancing the end-user experience** by helping them to easily find and discover content.
- **Personalizing and targeting content** to target audiences.

While this list is just a subset of the many content management challenges facing organizations today, they are among the most prevalent. Before choosing a solution, it's imperative to gain a clear understanding of the role content management plays in your organization. This will help you to define and prioritize requirements, and align those requirements with the most appropriate solution. This whitepaper discusses the role of content management and identifies key features and functionality necessary to address the challenges outlined above.

Maintain Consistent Branding

An organization's website is perhaps its most important marketing vehicle. Often, it's the first place a prospect turns to learn more about an organization, its products, customers, and culture. This first encounter should make a lasting impression. One of the primary functions of a CMS is to help maintain a consistent online presence. Maintaining a unified look and feel across websites helps protect the integrity of your organization's brand. Intuitive navigation helps provide a richer overall experience for site visitors. To accomplish this, features such as **templates** and **Cascading Style Sheets**, and functionality such as **workflows** and **approvals** are essential.

Templates & Cascading Style Sheets

Templates enable organizations to lock in the 'look and feel' of a website. In their simplest form, templates are an assemblage of designs, styles, and layouts which, when combined with recurrent navigation and content, serve as a framework for the creation of Web pages. The template framework should allow template designers to lock down certain aspects or areas of a template (i.e. design, style attributes, navigation), thereby preventing it from being edited or changed on other pages. It should also be flexible enough to meet the specific needs of an organization's varying departmental Web pages and content (i.e. News, Events, Products, Services, etc) while adhering to the site organization scheme (i.e. primary navigation, utility navigation, and footer navigation) established by the organization.

Another essential component to effectively managing and controlling the 'look and feel' of a website is Cascading Style Sheets (CSS). CSS' offer a **standards-based approach** to website development that enables designers to maintain centralized control over site designs. When implemented, Cascading Style Sheets allow fonts, sizes, link display, etc. to be centrally managed and incorporated automatically throughout all Web pages that utilize the style sheet. A good CMS must support the ability to assign style sheets at the template, page, and content object levels, as well as apply "box model" properties (i.e. padding, margins, borders, etc.) to these elements.

The ability to target and schedule the activation of different style sheets according to where you are in the website allows for design flexibility and supports the overall Web strategy.

An important aspect of Cascading Style Sheets that is a must for all CMS' is support for CSS-Positioning (CSS-P). CSS-P provides for **table-less layout** of content giving increased control and flexibility over the positioning and scheduling of content on a page. It also provides a clean, standards-based approach to site development and improved site compliance that will help make your website accessible for people using alternative browsing methods such as handheld devices, braille browsers, or text only browsers. Another benefit to CSS-P is that content contained within the elements uses absolute and relative positioning and allows the template designer to define where content appears in the HTML code versus where it displays on the page. The higher the main content positioning is within the page, the better its accessibility.

Web Standards and 508 Compliance

Also increasingly important for a CMS is the ability to enable Web compliance with industry regulations such as Section 508 and similar W3C Accessibility Guidelines. These guidelines address the accessibility barriers that make it difficult or impossible for some people with disabilities to perceive, understand, navigate, and interact with the website. All CMS' should provide the tools necessary to ensure that content is accessible, and that it adheres to the standards set by the institution. At a minimum the CMS should allow administrators to require an alternate text description (Alt attribute) for all images and objects, and require Summary Text or a text description for the contents of the table.

Workflow & Approval

The ability to channel content through a workflow is necessary to ensure content consistency and quality. CMS' should provide robust, yet **flexible workflow and approval processes** that can align with an organization's requirements. It must support multiple levels of approval to enable appropriate signoff and workflow management (i.e. a product description submitted by a content contributor may be routed to a marketer for approval prior to being published) while providing the ability to maintain a detailed history or trail of updates and revisions. CMS' should also allow for the assignment of approval rights at many different levels—subsite, page, and content type/content object levels—to provide maximum control over site content.

A flexible template-driven architecture with CSS support, along with an adaptable approval workflow process gives site administrators granular control over the design integrity and structure

of the site. It also provides a secure and simplified interface for users to create and manage content.

Enable All Users to Easily Create & Publish Content

As your website grows and evolves, so do the everyday content management challenges that it faces. Many organizations operate with limited technical staff and IT budgets, making the ability to keep up with site update requests and efficiently and affordably manage Web content a growing concern. With limited IT resources, website content becomes chronically outdated, stale, and inaccurate which can, over time, also lead to a lack of consistency in the information architecture. Finding a way to decentralize website management, and empower employees and the community to easily contribute and manage content is key to successfully navigating those challenges and excelling in an increasingly competitive environment.

A CMS that can deliver simple and intuitive tools enables content managers to go beyond the limit of their technical skills, thus reducing the need to lean on IT and Web developers for support. When you remove technical staff from the process, content creation and management is more streamlined and less costly to maintain with resources organization-wide becoming more efficient and productive. To distribute the management of Web content, a CMS should support a robust security model along with simple, yet powerful tools for authoring content to support the varying skills and expertise of the organization.

Security – Authentication, Permissions and Roles

When talking about security you need to start with authentication. A CMS must provide the means to integrate with the organization's existing authentication system(s)—such as LDAP, Active Directory, Single Sign-on—and allow the CMS to leverage authentication systems to manage group information so that it doesn't need to be duplicated and managed separately.

It is equally important that the CMS provide a robust and granular permission solution that can be tailored to meet the precise needs of the organization. The solution should provide a mechanism to define permissions for an individual user or group based on their role and participation in the workflow. The solution should also allow for permissions to be assigned at granular levels to simplify the content management process by providing content managers with access to the content and tools for which they are responsible. Most CMS' allow for permissions to be assigned at the site, subsite, and page level, while more sophisticated systems provide additional controls

to assign permissions at the content object and form field level. This gives managers the ability to set permissions that enable content contributors to use only those tools, menus, and options that are applicable to their unique roll.

Intuitive Tools

Enabling users to easily manage Web content is but one of the many ways to deliver a compelling website. In-context editing tools enable organizations to easily create and manage Web content. How flexible those tools are determines the extent to which organizations can manage content the way they would like to manage it. The more intuitive tools that a CMS offers, the more self-sufficient and productive content managers can be, and the less reliant they are on IT for support.

To truly decentralize the management of Web content, content managers need simple and intuitive tools to perform their unique role within an organization—whether great or small—to perfection. Browser-based 'in context' editing tools (tools that allow editing within the context of the Web page) enable users to easily create or edit content, and manage how it is presented on a page without having to navigate away from the page and work in a separate application.

At the core of managing content easily is the **rich text editor** which presents Web managers with familiar Word-style control. The WYSIWYG editor should provide the ability to easily copy/paste Web content from Microsoft Office applications and HTML. It should also include mark-up and formatting tags to support richly formatted text, or the ability to generate Web pages with clean XHTML/HTML code for increased optimization and accessibility. Web content management, however, is not just about WYSIWYG editing. While it maybe the primary interface for content, it may not be the best approach for all content or particular users.

Content managers also have the need to use **HTML forms** for a variety of activities such as conducting online polls and surveys, creating charts and graphs, or collecting registration information. Relying on IT staff to code forms is not an option.

Most CMS' provide the tools for creating HTML forms and can email the form results to identified recipients, however that is only half of the solution. Building a repository to store the data as well as reporting tools to edit and manage the data are also essential and will go far in making Web managers successful and self-sufficient.

What separates a basic and truly advanced CMS is the ability for non-technical users to leverage out-of-the-box Web application tools to build simple applications—which are nearly always exclusively created by developers. Simple applications enable users to collect, aggregate, email, manage, display and share site visitor information; as well as create reports on Web form data. This data can then be leveraged to drive business processes.

Managing Content

The main goal of any website is to maximize communication with various audiences. To meet this objective, organizations continually strive to deliver timely, targeted, and up-to-date content. Content that is continuously reviewed and updated enables organizations to provide the latest and most accurate information and helps visitors find what they are looking for. Fundamental to the creation and delivery of targeted information are features and functionality such as metadata and taxonomy classification, content scheduling and personalization, dynamic indexing, and facet-based navigation. How flexible these features are will determine the ease with which visitors can search the site, discover information, and ultimately ensures a rich visitor experience.

Organize Content with Metadata

A good CMS should support the effective creation, management, and delivery of timely, relevant information. To do so, it must have a robust and flexible metadata (information about information) architecture. By classifying and organizing Web content, organizations can increase the findability, readability, and usability of Web content, thereby increasing its value. A well-designed CMS should not be limited to standard metadata fields (i.e. site/subsite, publication date, last modified date, category, file format, etc.), but should provide the flexibility to define custom metadata attributes that describe and define content specific to the organization. For example, an organization may categorize content by topic (i.e. news release, announcement, or featured story), subject area (i.e. products or services), audience (i.e. customers, partners, or prospects) or location (USA or Europe). The CMS should also provide the flexibility to bind metadata to all content equally, as well as to multiple objects, including; templates, Web pages, images, uploaded documents, and content objects.

An excellent complement to metadata, **taxonomy-based content classification** provides a way to record relationships that exist between content. An organization's website often includes a great deal of information across hundreds or even thousands of Web pages. To manage this information efficiently and to derive the most value from it, organizations increasingly rely on taxonomies. A mature CMS should support the creation and management of taxonomies.

Taxonomies provide a hierarchical approach to classifying content for improved organization and categorization. They also make data search and discovery more productive for visitors by providing a means for content managers to classify the content they create through a controlled vocabulary of terms that define "broader than" and/or "narrower than" relationships. These terms can have relationships to other terms, such as: hierarchical (tree), associative (related or see-also), or equivalency (abbreviation). These terms and their relationships can then be leveraged to display content and provide a means for visitors to better browse and discover information.

Metadata is a powerful CMS feature and the driving force behind many other valuable features including **content scheduling, content personalization**, **dynamic indexing** and **facet-based navigation**. The ability to schedule and personalize content enables organizations to improve content timeliness and quality, and allows for greater efficiency in the management of content. Facet-based navigation provides the additional benefits of presenting content for increased value and an enhanced visitor experience.

Facet-based Navigation

Another important feature of a CMS, facet-based navigation, makes it easy for a visitor to browse a taxonomy and discover relevant or useful information. While most sites today provide some type of search mechanism, a visitor usually needs to know what they are looking for to obtain the intended result. Facet-based navigation removes the guesswork involved in searching for and finding information. With facet-based navigation a visitor does not need to guess how to ask for information because relevant content is automatically presented to them based upon navigational selections. When facet-based navigation is incorporated, visitors can quickly find the content they seek (and other related information) through a logical path of discovery, thus enhancing the visitor experience, value of the content, and overall perception of the organization.

Content Scheduling (Publication & Expiration of Content)

Content scheduling is a powerful way to keep content fresh and up-to-date. A CMS needs to support the ability to schedule content for publication or automatically expire it on a certain date to ensure content timeliness and accuracy. For example, the Public Relations department may schedule a press release to go live on a specific date, or 30 days after its creation date. Content freshness reminders are additionally useful for notifying content authors when it is time to review content for its freshness and accuracy.

Dynamic Self-Updating Indexes

Many times it is necessary for a single page to be linked from multiple locations within a site. This requires a CMS to provide the ability to create a listing of **hyperlinked** pages that are automatically generated, displayed, and updated. Through an intuitive wizard-driven interface, the CMS should enable Web managers or administrators to easily create rules for generating a listing of content that is based on its categorization or the metadata that describes and defines the content. Web managers should not be required to write code to query the CMS repository for the content listing. The list should automatically update itself when content meets the metadata criteria used to define the list, or remove content from the list when it content falls outside the criteria, such as when using date ranges or periods of time.

Defining what content makes up the self-updating list is only the first step (i.e. press release articles greater than or equal to today's date), a CMS should also provide flexible options for the presentation or display of the linked pages (i.e. show three links and randomly display through the list) as well determining what content is reused in the list (i.e. title only, title and description, publication date and title, description only, etc.).

A CMS should also provide dynamic site navigation lists that automatically update and that are not strictly tied to a folder or subsite structure but which can be configured to include pages based on any metadata attribute. Self-updating indexes are an incredibly valuable feature, thus eliminating the need to manually create a list of hyperlinked pages, saving time and providing the ability to target content faster and easier.

Create Once, Use Multiple Times

Creating content is a costly and time consuming endeavor. The ability to reuse content across the website and to deliver that content beyond the Web makes content contributors more efficient, and also helps to ensure consistency and accuracy.

Content Reuse

A mature CMS must facilitate content reuse, in other words, the ability to create content once and easily repurpose it throughout a site. It should provide a framework that allows organizations to manage many types of content in such a manner that it can be collected and organized centrally and then easily and endlessly repurposed on any number of pages. Examples of content that is widely reused across a site include: news and announcements, events, profiles, fast facts, job opportunities, and hours of operation.

The ability to generate a dynamic listing of pages based on standard or custom metadata criteria is also a very powerful function of content reuse (as described in the aforementioned dynamic self-updating indexes section). A classic example of the need to generate dynamic listings of page links are news articles which often appear in the following sections:

- An organization's home page showing the most recently published articles.
- A news page displaying all articles for the current month or an archives page displaying all articles for a given calendar year.
- Departmental pages showing a short list of recently published articles.

This valuable feature eliminates the need to manually create a list of hyperlinked pages, saving time and providing the ability to target content faster and easier.

RSS and XML Publication

At the very minimum a Web CMS should support RSS which stands for Really Simple Syndication (RSS). RSS is an XML format specifically designed to allow for the easy sharing of content. It is a popular dynamic content delivery channel for organizations that distribute and expose precise content summaries of information, from news and announcements, to emergency information, to job postings and events. A CMS should provide the ability to easily publish an RSS XML file known as a 'feed'—often designated by an RSS icon  —which can come in many forms. The feed has a URL associated with it. A site visitor can use a variety of applications to subscribe to that URL and receive automatic notifications that new content of interest is available without having to revisit your website time and again.

RSS makes it easy to share and reuse content. It also affords the benefit of delivering valuable information in real time to the right audience while improving communications and increasing brand exposure. Creating RSS feeds is a capability that should be offered by all CMS', and should be easy to create with no custom coding required.

Prior to being able to syndicate content, the CMS must provide the ability to organize content according to customizable criteria or metadata. Once the content is identified and aggregated, it can then be published to a standardized XML format such as RSS.

The ability to consume an RSS feed is equally important and it should be as easy as copying the URL of the feed and pasting it into a page using a 'Feed Reader' module provided by the CMS system. Organizations can subscribe to content from numerous sources to add value to their website including content from news bureaus, partner sites, publications, and even social networking services such as Twitter and Facebook. The Feed Reader will automatically and continually check for new content and display it directly on the page as soon as new content is available from the source.

Often it is desirable to deliver content created and managed in the CMS using other XML formats. An extensible XML publication framework provided by the CMS can significantly aid in the effective reuse of content in other applications (portals, event calendars, enterprise resource planning systems, etc.) or for other presentation environments (e.g., mobile phones, PDAs, iPods or Flash/Flex applications). XML is an open standard that provides the basic syntax allowing content to be shared without needing to pass through many layers of conversion. It is impossible to predict what XML format we'll need in the future, therefore, the CMS should allow for easy configuration of custom XML formats.

Community Building

"Getting the message out" is just as important for enhancing an organization's brand as fresh content and imagery. Websites today are the primary vehicle used to attract prospects, and communicate with other audiences such as employees, partners, and customers. Today, CMS' must provide social networking capabilities—such as blogs, wikis, micro-blogging, profiles, etc.—to help build communities of interest and keep site visitors coming back. A sophisticated CMS will provide community capabilities out-of-the-box, as well as provide an **Application Development Framework** that gives developers the ability to create new community applications, customize community applications to meet an organization's unique Web strategy, or integrate with best-of-breed and third-party applications.

Application Development Framework

An application development framework (ADF) provides developers with a framework to easily build new applications, customize existing applications, and integrate third party applications with the CMS so organizations don't need to wait on product release schedules to grow functionality. An ADF should provide a host of pre-built tools, components, and options that enable developers to

jumpstart development initiatives and create solutions tailored to the organization's specific needs, while accelerating development time. The ability to augment applications through the use of mashups is also key. An ADF should provide developers with the ability to combine multiple applications in order to create a more powerful application (such as combining a wiki app with additional components such as comments, links, voting, and forms) to provide the website visitor with a richer Web experience. An ADF also extends the life of a CMS by enabling institutions to incrementally grow functionality as needed.

Flexibility

No two organizations are alike. Their needs are as diverse as the strategies, technologies, processes, and people that support them. Organizations today require a flexible CMS that can be aligned *to* Web strategies, rather than define the parameters of those strategies. Whether customizing the initial implementation, making day-by-day adjustments to the CMS, or altering the system to keep pace with change, the CMS should provide the options needed to manage content the way that's right for each individual organization.

Growth

Organizations today must plan for a future based increasingly on information—a future where employees, customers, partners and prospects play a larger role in long-term growth strategies. How well organizations are prepared to meet these challenges depends largely on the technology decisions made today. It is increasingly important that a CMS provide organizations with an open architecture and scalable foundation upon which to grow—whether scaling to accommodate new information as it is introduced; supporting social networking capabilities; integrating with new and best-in-class applications as the market evolves; easily assigning extensive roles and permissions for new users, and redefining roles as responsibilities change; or growing a website as an organization grows organically (number of employees, customers, etc.).

Relate New Information

One critical factor to growing an organization is the ability to easily bind, relate, and re-use newly introduced content and information. Whether adding new departments or recently acquired businesses, a CMS should enable the ability to easily scale an organization's information architecture—without having to devise a new implementation strategy. The CMS should enable

users to seamlessly target and link newly introduced content into existing areas of the website using metadata capabilities, without affecting the sites' overall architecture.

Easily Integrate With External Applications

Many organizations view the website as the glue that brings content from disparate systems together. Increasingly, organizations require the ability to expose data or information from external applications directly within the CMS. The ability to integrate other core applications enables organizations to fully leverage content across systems while making it less costly and cumbersome to maintain.

A good CMS should be standards-based and extensible, and provide a sufficient number of application programming interfaces (APIs) for easy customization and integration with custom-developed applications, as well as external applications such as customer relationship management, enterprise resource planning systems, and portals. Managing content via a unified system reduces costs and increases productivity by providing a single user interface with which to work.

Conclusion

It is important to understand the role of content management in an organization to help define and prioritize requirements consistent with system-wide objectives. The right CMS can have a powerful impact by enabling users at all levels of an organization.

A CMS with the best combination of flexibility, scalability, and ease of use, driven by key features and functionality will allow Business and IT professionals to deliver a solution best suited for the successful operations of their websites. When combined, a CMS and a sound content management strategy address the complex, everyday Web challenges facing organizations today, and prepare organizations to meet future challenges as well.