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The Right Content Management System Will Improve Your Web ROI

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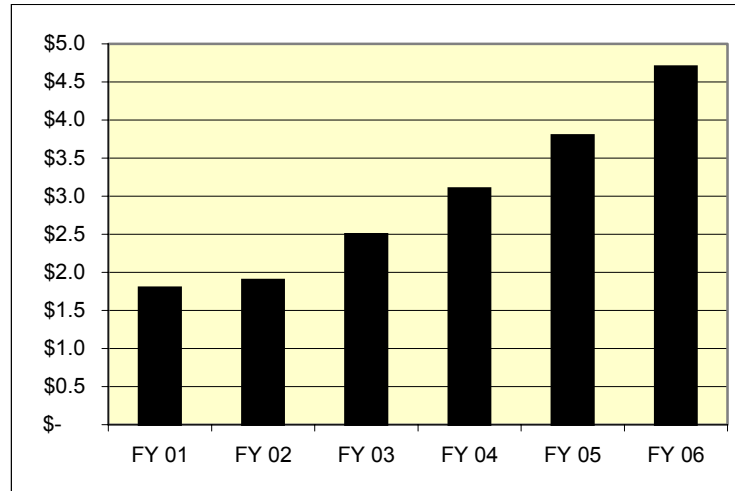Vice President of Development
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Overview

The North American demand for content management systems (CMS) software is on the rise, jumping from $1.4 billion in 2001 to over $3 billion in 2004. International Data Corporation (IDC) estimates sales of CMS software will reach $4.6 billion by 2006.[1]

Enterprise managers recognize the benefits of CMS. But do these benefits outweigh the costs? This white paper focuses on how to calculate and maximize return on investment (ROI) from your CMS, so that it quickly pays back the cost of the software.

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[1] *Worldwide Content Management and Retrieval Software Forecast, 2002-2006, IDC.*

Content management and its benefits

The introduction of client/server and distributed computing technology accelerated the trend to give users greater control and access to their data.

Another technology contributing to this trend is employee self service (ESS) software, which allows users to directly access human resources (HR) applications that previously could be used only by HR professionals.

Content management systems also move control out of the hands of the professionals (in this case, the IT department or Web master) and into the hands of end users – specifically, product managers, brand managers, marketing professionals, and other users who create content for the corporate Web site.
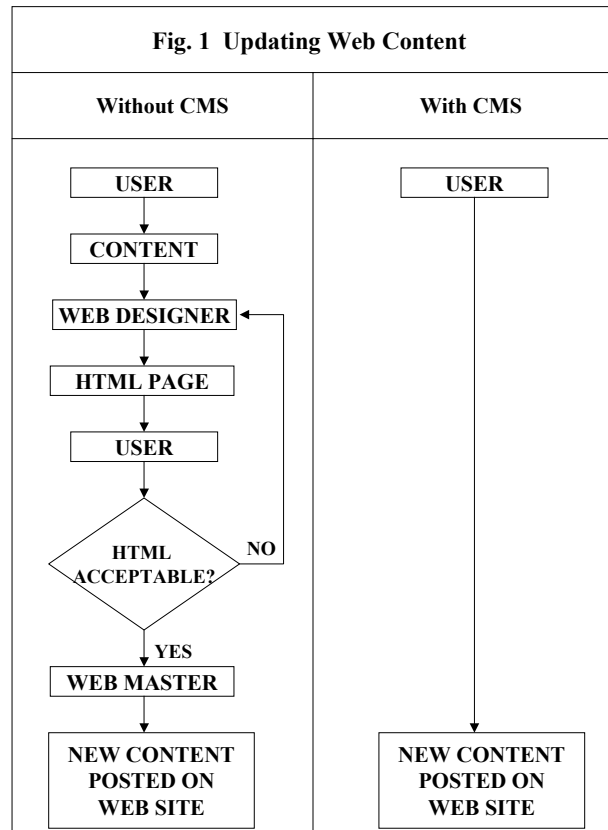
Most organizations need to frequently update information on their Web sites including product descriptions, features, specifications, and pricing; case studies; white papers; investor information; press releases; FAQs; customer service information; employee communications; special offers; and training and support.

A content management system is software that enables non-IT users to change Web site content directly, without help from the IT department or Web master. With a CMS, these non-technical users can create, edit, and publish content via a browser-based interface.

While a lot of Web development is outsourced, content – mainly text and graphics – is usually not. By offering centralized control and administration – and distributed authoring, editing, approval, and publishing rights – a CMS pushes content development and management to a wider base of users. This gets rid of the bottlenecks that can take place when Web pages can only be written, designed, and posted by a small group of technical experts who do not own the content.

Current methodology for updating Web sites

Without a CMS (see Fig 1 below), changing content on the Web site is a time-consuming, multi-step process. If outsourced, Web page design and content changes can cost $75 an hour or more. If handled internally, a large enterprise may have several full-time IT professionals on staff who do nothing but maintain and update Web page content.

Fig. 1 Updating Web Content	
Without CMS	**With CMS**
USER	USER
CONTENT	
WEB DESIGNER	
HTML PAGE	
USER	
HTML ACCEPTABLE? NO	
YES	
WEB MASTER	
NEW CONTENT POSTED ON WEB SITE	NEW CONTENT POSTED ON WEB SITE

In the conventional methods of updating Web content, the user writes the new content and hands it off to a Web designer or programmer who creates a rough of the new Web page. The rough layout created by the html designer or programmer must be routed back to the user for approval, and this typically takes several iterations, each delaying posting of the new content on the site anywhere from a day to a week or more.

Finally, the approved Web page is given to the Web master, who posts it on the site whenever his backlog of work allows.

As a result, organizations fall behind on critical updates to their Web sites. The information on the Web site lags behind product launches, upgrades, and new features by weeks or even months, making it inaccurate, ineffective, and less valuable to customers.

A new methodology for updating Web sites

With a CMS (see Fig. 1 on previous page), the user can update existing Web site pages directly, or create and post new pages, without going through IT or the Web master as intermediaries.

A CMS offers several advantages vs. the conventional method of updating Web content described above:

Speed. With a CMS, Web site updates can be created and posted in hours or days vs. weeks or months. Web information for products can be posted rapidly, enabling a faster time to market for product launches and upgrades.

Accuracy. Faster posting of new information to the site means visitors always see and read the latest production information, not outdated specs and features.

Control. Responsibility for Web content is placed into the hands of the line managers directly responsible for the P&L of those specific products – typically business and technical managers as well as designers, engineers, and scientists. Those who "own" the content can author the Web pages containing the content, which is the most efficient way of getting this content out of their heads or files and onto the Web site.

Convenience. Users are no longer dependent on the Web manager or IT for numerous minor changes, tweaks, and updates. Now when a spec is modified, or a new feature is added to the product, the updated information can be posted on the site in minutes directly by the user.

Consistency. Even though a CMS allows many different users in the organization to publish directly to the Web site, it also sets up provision for review and approval of the text, enabling a consistency in the tone and style of the copy. Authors all use the same templates for Web page layout, which helps ensure graphic consistency as well.

Ease. Users can update Web pages or create new ones right at their desktops, with no knowledge of html or programming required, and no help from IT.

Timesavings. The Web master and IT department are no longer burdened by numerous requests for Web site updates, freeing them to concentrate on other tasks.

Increased traffic. Visitors who see that fresh content is continually added to your Web site will return to the site more often, visit longer, and buy more.

Customer service*.* With a large number of content owners having easy access to the Web site, you can create and post more relevant content, giving added information value to customers using your site.

Simplicity*.* Implementing a CMS greatly simplifies, controls, and streamlines content management and content publishing, especially in organizations that consistently generate a large volume of content produced by multiple contributors with varying levels of content knowledge, writing and design skills, and authorization.

Efficiency*.* Individual pieces of content are easier to locate and access. More efficient management of your content inventory enables greater reuse, which reduces rework and increases your ROI on content creation. Content can quickly and easily be repurposed for a variety of channels and devices.

Content management system workflow

A CMS allows users to build, maintain, and update Web sites with no knowledge of Internet technologies. Since content management systems are Web-based, users can modify their site, at any time, from any Internet connection – home, remote, office.

The two major components of a CMS are (a) a browser interface enabling the user to create Web content and pages with point-and-click ease, and (b) a workflow management system.

It is important that a CMS administrator can assign different rights to different users. These may be defined as follows:

Editor – A user who contributes content to the site or specific areas of the site. Editors may write and design Web pages, or modify existing pages, but cannot post them to the site. An editor might be a design engineer, researcher, brand manager, or anyone else who owns content related to a specific product. Editors who do not have publishing rights (see below) must submit content for approval.

Approver – Users to whom copy and layout must be routed for review. These typically include the editor's immediate supervisor, the product manager, the marketing manager, and the legal department. Users can either approve the copy and layout as is, reject it, or suggest changes. They then route the copy and layout back to the editor, who incorporates the changes into the next draft and layout, and sends it out again.

Publisher – A user who is responsible for the final review, approval, and publishing of the Web content. Only the publisher can post content to the live site. The publisher may also be an editor or approver.

Administrator – This person is responsible for administration of the CMS. The administrator can add, modify, or delete users, user permissions, access levels (editor, approver, publisher), content sections, site structure, and content workflow.

Working through a browser interface, the author or editor writes text and then creates a layout for the page. Predefined templates simplify and speed the design process; the user simply selects a layout template and flows his text into it.

Next, the user routes the first draft through the corporate approval cycle using the digital workflow management tool in his CMS.

For any large enterprise, the view of CMS shown in Fig. 1 (as seen on page 5) is over-simplified, because it ignores the extensive routing and approval process required for
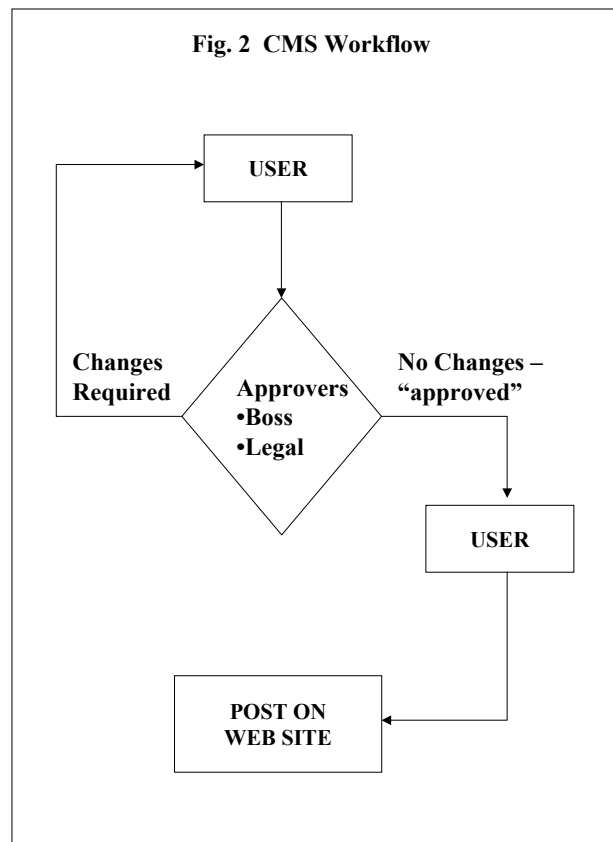
most marketing communications materials (online and offline). In reality, the copy and layout go to, at minimum, both the user's boss and the company legal department for review (see Fig. 2 below). In large corporations, as many as half a dozen individuals or more may be part of the approval cycle, and all are almost certain to have comments.

The owner of the document incorporates the changes. He or she then sends the revised draft and layout to the reviewers for final sign-off. Once they give it their blessing, the last step is to post the document to the Web site.

The CMS permits the user to post content to the site directly, without the help or approval of a Web master. At the click of a mouse, the approved Web page is automatically converted into the desired code, which may be html, PDF, text, Word, rich media, images, or another format. Additional clicks enable the author to post the page to the site and add features such as navigation.

Despite its obvious benefits, the CMS also introduces several problems. One is the issue of unauthorized individuals changing the company Web site without permission. The other is multiple individuals making different changes to the same page at the same time.

Fig. 2 CMS Workflow

```
                    ┌──────────┐
           ┌───────▶│   USER   │
           │        └────┬─────┘
           │             │
           │             ▼
                        ╱╲
Changes              ╱      ╲          No Changes –
Required    ◀───────  Approvers  ──────  "approved"
                     •Boss              │
                      ╲ •Legal ╱        │
                        ╲    ╱          ▼
                         ╲  ╱      ┌──────────┐
                          ╲╱       │   USER   │
                                   └────┬─────┘
                                        │
          ┌──────────┐                  │
          │ POST ON  │ ◀────────────────┘
          │ WEB SITE │
          └──────────┘
```

The CMS should have a security and permissions feature for controlling which users are allowed to create, approve, and post changes to the entire Web site or just select sections or pages.

Content management system selection criteria

The most important factors to consider when selecting a CMS for your enterprise are: price/performance; platform; integration with existing applications; functionality/ease of use; and ease/flexibility of administration.

Price/ performance

The price/performance trade-off that holds for virtually all software also holds for CMS – namely, the more features you add, the more expensive the software.

Because it is easiest to differentiate products based on features, software publishers spend a lot of development time and effort thinking of new features to add to their systems that their competition doesn't have.

That's often bad for the user rather than positive, for two reasons: First, the extra development cost is reflected in the price, making the software more expensive.

Second, such features are often created based on marketing perception rather than genuine needs of the users. So the buyer of the high-priced, feature-laden software is paying a premium for extra capabilities, 90% of which he will likely never use.

Consider two products, CMS "A" and CMS "B." System B has a lot of bells and whistles – dozens of features you will never use – and is priced at $250,000 for an enterprise your size.

System A doesn't have those extra features, but its capabilities will meet 99% of your requirements. For the number of users you have, the license fee of system A is $57,000 – less than one-fourth the cost of system B.

Which seems a better value? Most buyers who value price/performance would choose CMS A, the less expensive software without all the extras. (The important features that all CMS software should have are outlined later in this paper.)

Two additional costs associated with CMS are the annual maintenance fee, and the expense of integrating the CMS with other applications. Annual maintenance fees typically range from 10% to 15% of the base price. The cost and ease of application integration are discussed in the next two sections.

Technology platform

Many CMS vendors develop their systems on proprietary platforms. As a result, they cannot be modified by the user. If you want to make changes to the CMS, you must hire the vendor to do the customization, often at an exorbitant hourly rate.

By buying only software built with standard platforms, popular databases, and open architectures, you gain the ability to modify those systems in-house to meet current or future needs. For example, if the CMS is built on Microsoft ASP, a programmer who knows ASP can customize your system.

Application integration

Easy integration between the CMS and other applications, both new and existing, is important, especially in large enterprises with Extranets and Intranets.

Example: A large brokerage firm has a Web site where its 1,200 registered representatives (stockbrokers) can check their sales and commission. Since the brokers' primary compensation is based on commission from trades, timely reporting is important to them.

The brokerage integrated a CMS with its back-office mainframe, through which all trading data is processed. Through this integration, the sales and commission payments for each broker are published, in real-time, and pushed to individual mailboxes on the Web site.

Ask the CMS vendor how easily the content management software can be integrated with new and existing applications. An open-source CMS can be easily customized to fit your business. A closed-source system can still provide APIs to allow integration with other systems; however, the level of control is less than with an open source system.

Other important factors concerning integration of the CMS with existing back-end data sources and enterprise connections are as follows:

Method of integration – The integration can be achieved with pre-built connectors, custom wrappers or connectors, proprietary APIs, or an open or standard development language.

Customization – You must be able to code and customize the system to meet your unique needs. Is the architecture completely based on open standards such as XML or HTML? What is the internal programming based on? Java? .Net?

Application server support – Is the CMS based on standard application server technology? Can it integrate with your existing applications servers?

Can application integration be done with in-house resources, or is an additional fee from the vendor required? Can the vendor build custom applications to augment the functionality of the CMS they provide you?

Remember that most CMS systems have a securities and permission feature controlling levels of access via password. When an application is integrated with the CMS, can access to both the application and CMS be controlled via a single interface, or does each require a separate interface? A CMS that allows administrators to manage both the CMS and related applications from a single interface greatly simplifies system administration.

Functionality and ease of use

A CMS does not eliminate the need to update content on Web sites. It merely shifts the responsibility from costly and (burdened by backlog) slow-responding IT professionals to less costly and faster turnaround non-technical personnel.

To enable non-technical personnel to create and publish new content to the Web, the CMS must be easy to use and contain a set of tools/functionalities users need to quickly and efficiently perform these tasks. In particular:

- The CMS must allow employees to work together and collaborate on content creation and projects.

- Users must be able to submit content directly to the CMS.

- The system workflow must include an approval process for content submissions that includes the ability to make comments and suggestions, not just approve or deny submissions.

Key features that your CMS should provide include the following:

Easy user interface. Users can access the CMS from any desktop via a familiar browser interface. Text may be entered, formatted, and previewed in a manner similar to word processing software – no html knowledge required.

Preview and workspace screens. The user should be able to preview his or her Web page on the screen before submitting it to others for review. A separate window or workspace should enable the user to view immediate tasks, work in progress, and recently published content all in one place. At a glance you can access items you are working on but have not yet finished; items awaiting your review or approval; items that you submitted that were rejected; and items you submitted that were approved.

Multiple formats. The system accepts input in multiple formats. The user can type text directly into the CMS, upload existing files, add links, and import digital images and multimedia files.

Dynamic content and navigation. Site maps and navigation should be generated automatically as pages are published to the site. The system should include built-in keyword search functionality and the ability to customize search results by logical grouping.

Templates. The software should contain ready-made templates that can be used to flow text into a variety of pre-designed page layouts. Templates can be switched on the fly, enabling the layout or design of the page to be changed quickly and easily, without rewriting html code.

Digital workflow. Multiple levels of approval ensure that content is always reviewed and approved before it gets published to the Web site. The CMS should enable editors to notify approvers and others via e-mail of any pending action that is required (e.g., "your approval is needed"). The software should allow the user to publish any given Web page to multiple locations.

Simplified system administration. The CMS should enable you to manage content for multiple sites – and multiple applications integrated with the CMS -- through a single interface.

Security. The administrator can control access by user role (editor, publisher, approver); task (read only, read and make suggestions, make actual changes to document); by site; and by sections of a site. The CMS should also be able to use standard authentication protocols available in the platforms upon which it is built.

Content archiving. Content should be stored and managed separately from its associated templates. The system should store previous versions of the content and maintain an editing history, allowing users to quickly rollback to any historical version of content.

Object caching. Content objects should be placed in RAM or on the local drive to cache data, ensuring that dynamic pages assemble and serve rapidly. Keeping the content separate from the presentation templates allows content to be stored in databases for fast and easy dynamic access.

Dynamic server clustering. Caching enables clustering of database servers, creating load-balance environments with site scalability and server failover for greater Web site availability.

Below is a checklist of additional functionality to look for when evaluating a Content Management System:

- Changes to content visible inside the original document similar to Microsoft "track changes" feature.
- Spell check.
- Ability to insert links and images.
- Support creation of templates.
- Programmatic template creation.
- Customizability, that is the ability to tailor front-end to fit into the CMS and its workflow.
- Built-in templates.
- Store content separate from presentation.
- Completely browser-based CMS.
- Supports browser as a client for authoring.
- Open source or built on standard ubiquitous technology.
- Multilevel role and authorization.
- Divide administrative and editorial tasks.
- Manage projects, create templates, and administer users.
- Assign authorization, manage content, define workflow.
- Role and individual-based assignments.
- Version control.
- Track and reverse all changes.
- Page/site roll-back.
- Checking and releasing content.
- Multilevel release procedure predefined in a workflow model with as many stages as desired.
- Inform users via email and task icon.
- Re-purposing (reuse of content).
- Allow multiple categories to be assigned to content.
- Permission/access levels determined by user/administrator.
- Implicit, explicit, predictive security-based user interfaces.

- Optimum integration of static and dynamic content
- Dynamic import for pages to be created automatically from a database or when pages need to be personalized.
- Use static pages whenever possible to improve performance.
- Configure review workflow as needed to accommodate multiple reviewers.
- Content posted to Web site automatically without technical support.
- Email notification of workflow task.
- Complex/simple rejection and approval paths.
- Multilingual capacity and language manager.
- Ability to set dialog language for user.
- Language translation, detection, adaptation, colors, and other cultural personalization.
- Caching.
- Preview of single pages or entire site.
- Editor should be able to control not only the content but also the layout, positioning, and linking.
- Keyword indexing.
- Ability to define where content is placed.
- Categorization.
- Personalization.
- Needs to account for diverse types of content: graphics, photos, video, Flash files (can be done if programmatically changeable).
- Ability to index and display a variety of files and documents in native format.
- File conversion utility.
- Manage multiple versions of files and documents with versioning.
- Ability to cut and paste directly from MS Word or Excel.
- Archiving of old content.
- Ability to update from any location.
- Timed updates.
- Maintains content history.
- Effective and accurate search capabilities.

- Supports content full-text search.
- Supports third-party search tools.
- Search engine integrates with content security.
- Giving selected rights to user groups.
- Supports scheduled launch/expiration of content.
- Integrated help feature.
- Publish to multiple live servers.
- Built-in workflow templates.
- Customizable workflows (sequential and parallel).
- Ability to create "related information" or other sidebars.
- Ability to define where content is placed.
- Ability to run reports (e.g., about content age and views).
- Search of databases (internal and external).
- Image library available and searchable.
- Easy integration of third-party software.
- Manages photos and images.
- Image/graphics library provides historical and descriptive information of each image (number of times used, where used, template zones where images may be used).

Administration and security

Although a CMS shifts the ability to update Web content from a centralized IT department to decentralized content authors throughout the enterprise, you still need an administrator to serve as a single point of control and enable the administrator to:

- Create, edit, and delete users and groups.
- Assign users to groups.
- Assign roles to users and groups.
- Set permissions for users and groups.
- Create and edit templates.
- Create links.
- Run reports.
- Define levels of administration.

System implementation

Here are a few things to keep in mind regarding implementation of the CMS you choose:

1. The CMS must run on all server platforms and portals used throughout your enterprise.

2. The CMS must be able to support a large number of both standard users and management-level users to meet your needs now while allowing easy scalability as more users are added to the system later on.

3. Make sure you understand the pricing and billing structure of the CMS vendor. This can be tricky, as system pricing options vary widely and can be based on anything from the number of clients to the number of CPUs.

4. Ask the vendor what typical deployment times are for both pilot implementations and large-scale systems. Do these meet your schedule?

5. The CMS graphics and templates must be able to match the look and feel of your existing Web sites.

6. An accurate content taxonomy is required for the CMS. Can you develop this on your own? If not, does the vendor provide assistance?

7. Is training available for administrators, developers, and users? What documentation is provided? What level of support, and at what cost?

Calculating ROI

Determining ROI from your CMS depends on how your organization allocates costs. Let us take a simplified example, and you can substitute your own methods and figures when doing a similar comparison.

The greatest contributor to CMS ROI is the cost savings of not having to pay IT personnel to add and update Web site content.

Let's say that the cost of a full-time IT person devoted to the Web site is $60,000 a year, and you currently employ three people to handle your site. The annual labor cost for content management is $180,000.

If the CMS costs $60,000, then the system pays back its cost in 3 months, and generates a 3:1 ROI in its first year of usage.

Of course, the above calculation ignores the cost of the time users spend using the CMS to update Web content without IT help. The reason is that the IT cost is directly billable, but end users don't typically track time spent on content as billable time.

Let's say, though, that in-house IT professionals' time bills at $30 an hour vs. $20 an hour for non-technical staff. The labor cost savings is then approximately $10 per hour.

Assuming the content work still takes three people 40 hours a week for 50 weeks a year, the labor savings generated by the CMS is then $10/hr X 40 hours a week X 50 weeks a year = $20,000 savings a year. At that rate, your investment in a $60,000 CMS will pay back its cost in 3 years (3 X $20,000).

There are other ROI factors that are more difficult to quantify. These include:

Increased sales that result from getting new products and special offers on the Web site faster (quicker time-to-market).

Greater customer satisfaction generated through better quality of content and commerce on the company Web site.

Reduced customer service burden – accurate, timely information on the Web site means your sales and support personnel handle fewer phone inquiries, freeing them to concentrate on core tasks.

More efficient use of valuable digital assets – text, images, and pages can be stored, updated, modified, and reused many times, eliminating the need to create from scratch material that the company has already paid an employee or freelancer to write and design.

Lower frustration level – CMS eliminates the adversarial environment that can arise when Web masters do not process user requests for content updates as rapidly as users think they should.

When these factors are taken into account, the payback time for a CMS is even more rapid, and the ROI even greater.

Conclusion

As with any application, CMS software available today offers a wide range of choices at different price/performance levels. Important CMS selection criteria include features; cost; use of standard platforms and architectures; availability of source code; ease of integration with new and existing applications; and administrative flexibility and simplicity.

ROI is determined by the total price of system implementation vs. the ongoing cost savings achieved through reduced IT labor costs. If two CMS products achieve equal labor savings, the one that costs less to implement will generate the greater ROI.

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