

The functionality of the content management system (CMS) is obviously a key deciding factor when purchasing a new product. Equally important is the usability of the CMS.

If staff, particularly authors, cannot easily make use of the CMS, then the system will never be a success, regardless of how powerful it may be.

The overall usability of CMS products, and their suitability for their intended users, is therefore increasingly closely scrutinised during the evaluation and selection process.

One key challenge remains, however, which is how best to define (and ultimately evaluate) the 'usability' of a content management system.

While there are no simple answers to this question, this article is intended to provide some starting points for organisations looking to select a CMS.

The article focuses on exploring a number of key principles that can be used to guide the evaluation of CMS usability. These principles can be used when constructing scenarios for use in the vendor demonstration, as well as when documenting the CMS requirements.

It is hoped that this article will promote further discussion among the CMS industry on how best to design and deliver usable products.

Vendors are also encouraged to consider these principles when planning upgrades to their products, to help ensure that usability is not sacrificed in the name of added functionality.



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### A CMS will only be used if it is usable

#### Importance of usability

Two earlier briefings introduced the core concepts behind this article.

*The importance of content management system usability* highlighted the importance of usability in relation to CMS products, noting that it is more than just 'ease of use'.

The article *More users = simpler CMS* followed on from this, emphasising that the larger number of authors, the simpler the CMS should be. (This is often in conflict with accepted wisdom about purchasing 'enterprise' products.)

Since the writing of these two briefings, the need for usable content management systems has only grown.

CMS products are now deployed widely throughout organisations, with many projects focusing on establishing a highly decentralised authoring model.

Products have also grown steadily more powerful, and therefore more complex. There is always a tension between usability and capability, with greater functionality potentially impacting on ease of use for general authors.

Behind all of this, the same fundamental consideration still applies: the CMS (and the CMS project) will only be successful if authors actually use the solution.

To a large extent this relies on authors being *able to use* the CMS, recognising that the majority of content is created by part-time, non-professional authors.

The usability of the CMS therefore becomes a life-or-death issue for organisations, who are already struggling with training, supporting and motivating authors. If the CMS is not easy to use, gaining adoption will be difficult, if not impossible.

## Selecting for usability

Some content management systems are clearly more usable than others, even when they offer equivalent functionality.

Recognising this, organisations can consider usability during the selection of a new CMS, with the aim of obtaining a product that will be quickly and easily adopted by authors.

Usability then becomes another attribute to be evaluated, alongside the functionality of the product. In situations where there will be a large number of general business staff using the CMS, usability becomes the primary aspect to assess.

This article explores the concept of CMS usability, and then suggests a number of practical ways of evaluating this during product selection.

## Usability can become the primary aspect to assess

### Summary of usability principles

While it is easy to recognise the importance of CMS usability, it is much harder to define what this means in practice.

There are no easy answers to this, but there are some core principles that can be used to assess the usability of content management systems.

A usable CMS will:

- minimise the number of options
- be robust and error-proof
- provide task-based interfaces
- hide implementation details
- meet core usability guidelines
- match authors' mental models
- support both frequent and infrequent users
- provide efficient user interfaces
- provide help and instructions
- minimise training required
- support self-sufficiency

Each of these principles is discussed in the following sections.

## 1. Minimise the number of options

As the functionality of the CMS grows, so does the number of buttons, menu items and links.

Authors (and site administrators) can easily be overwhelmed by the number of options, increasing the learning time and creating serious usability problems.

This leads to the following principle: minimise the number of options presented to users at any given point.

In part this can be met through role-based privileges that restrict the rights of general authors, with the flow-on benefit of simplifying authoring interfaces.

Beyond this, however, the content management system needs to be designed in a way that allows interfaces to be simplified wherever possible.

This includes:

- removing the options that are not relevant or available for a specific user
- restricting the use of menus or drop-down lists that present generic options
- assisting in the establishment of role-based access to the CMS
- taking a task-based approach to the design of the back-end interfaces (as discussed in principle 3)

As a side note, vendors should always include at least one session in a demonstration that shows what the typical author would see, rather than running the entire demo in 'super user' mode. Without this, prospective customers will always struggle to assess how simple the CMS will be to use in practice.

## Limit the number of options presented to authors

### 2. Be robust and error-proof

It should go without saying that authors should not lose their half-finished content due to problems with the content management system.

In practice, this may not be easy to achieve in 100% of cases. Web-based applications are inherently less robust against user actions and system problems, and considerable work needs to be put into addressing these limitations.

In many CMS products, even the basics that are taken for granted in desktop applications may be weak.

For example, it is too often the case that if the user ‘clicks away’ from the current content without first saving, then the draft content is lost. Considering how easy this is to do (all the menu items and buttons typically remain on the screen during editing), this is a major issue to be addressed in many CMS products.

Beyond this, the content management system should address issues such as:

- auto-saving content where appropriate
- ensuring that content is not corrupted if the browser or CMS crashes
- providing robust error-handling
- displaying clear (and human-readable) error messages

Fundamentally, authors (and site owners) should not have to be ‘careful’ when using the CMS to avoid potential problems. Instead, the CMS should be designed to eliminate potential problems, and to handle issues in a robust way when they do arise.

## Authors must not lose their content due to bugs or crashes

### 3. Provide task-based interfaces

At the most basic level, content management systems are used to complete tasks, whether creating a new page or setting up a new author.

In general, content management systems can enhance their usability by providing task-based interfaces that match these common activities.

Often displayed as a ‘wizard style’ interfaces, these task-based models can simplify interaction with the CMS, as well as greatly reducing the number of options presented to the user at each point.

At a minimum, the overall functionality of the CMS should be divided into broad categories that match the way the CMS will be used. For example, back-end administrative tasks (such as security and user settings) should be kept separate from more frequent authoring tasks conducted by general staff.

In practice, there is often a temptation for vendors to develop their products in a generic and ‘elegant’ way. This often ends up focusing on providing a single way of completing all tasks, built around core objects and menus.

While this is conceptually elegant, it often ends up moving the CMS away from a task-based approach, making it harder for general authors to complete common activities.

(The use of scenarios during vendor demonstrations is a good way of assessing how task-based the CMS is, and this is discussed later in this article.)

## Authors don’t want to see the behind-the-scenes details

### 4. Hide implementation details

One of the primary reasons for purchasing a CMS is to reduce (or ideally eliminate) the need for technical knowledge to manage the website. This includes the need for HTML or general web knowledge.

The CMS should therefore hide as many of the implementation details as possible. This includes:

- not displaying the underlying files (HTML, JPEG, etc) of the website
- managing the publishing of files automatically without requiring the user to keep track of which files are needed
- automatically handling the delivery of files to the production server
- automatically removing files from the production server when no longer needed
- hiding (or providing a human-friendly interface to) the server configuration settings

As much as possible, authors should be able to manage the ‘pages’ on the ‘website’, without having to understand any of the behind-the-scenes details.

Note that in some cases, this can be taken too far, creating too abstract an interface that can divorce users from the realities of managing a website. For more on this, see principle 6.

## 5. Meet core usability guidelines

The design of the CMS itself must follow the core usability principles that apply to any user interface.

In general terms, this means that the CMS screens must be cleanly laid out, with options clearly marked, and information presented in an understandable way.

Core usability guidelines demand that:

- the user's current location within the CMS interface is clearly displayed
- progress through tasks is clearly indicated (perhaps following a 'wizard' type interface)
- pages as a whole have a clear 'visual hierarchy', with the most important items being the most obvious, and the relationship between items being clearly shown
- information is presented in a way that is easy to read and interpret
- items, options and buttons are grouped together in logical ways
- text is large enough to be readable, and can be resized to match user needs

In practice, many content management systems grow organically in response to customer requests. While this is a good way of funding ongoing development, it can lead to cluttered and confusing user interfaces, with extra options 'tacked on' where there is a gap.

Where necessary, vendors should 're-factor' their products to regain a clean and simple user interface throughout their CMS.

**CMS products should not be cluttered with new features**

## 6. Match authors' mental models

Fundamentally, authors think of themselves as editing a 'website' or 'intranet', consisting of pages of content linked together in various ways.

While there are some exceptions to this in specialist situations, this is the 'mental model' that most authors think of when using a CMS.

The CMS must match this mental model. Failure to do this invariably leads to user confusion and frustration.

In practice, this means:

- following the 'page' and 'website' metaphor throughout the system
- closely matching the view of content in the administrative interface to the way it appears on the published site
- hiding any implementation details that don't match the users' mental models

This can be a particular issue for content management systems that are 'asset-based' rather than 'page-based'. These systems are built on a model of 'content objects' that are assembled together to form the published site.

While conceptually much more powerful and flexible than page-based systems, these systems can be much more difficult for users. These difficulties stem from the unfamiliar metaphors that underpin such systems, and the mismatch with users' mental models of pages and websites.

CMS products must therefore aim to match the expected mental models of users, regardless of their underlying technical architecture.

**Authors only understand 'pages' and 'websites'**

## 7. Support both frequent and infrequent users

In general, there are two clear categories of authors using a content management system:

- frequent authors, who regularly create and maintain large numbers of pages
- infrequent authors, who have responsibilities to maintain a small number of pages

The needs of these two user groups can be quite different, and the CMS must be designed to support both groups.

There are a number of possible ways of supporting these two groups. For example, frequent authors may be provided with access to the back-end administrative interface for the CMS. This provides greater functionality and is more efficient, but as a consequence is more complex.

Infrequent authors may then be provided with 'in-context editing' or 'surf to edit', that allows them to browse the published site and to edit the page directly with just a few extra clicks.

While in-context editing has some limitations, it is much simpler to use, and may better match the needs of infrequent authors who want to make just a few small changes to the pages they manage.

At the end of the day the goal of this principle is not be prescriptive about CMS design, but rather to highlight that there are two distinct set of user needs that should be met.

In practice, the use of scenarios during the vendor demonstration (as discussed later in the article) may be a good way of understanding how the CMS would work for these two user groups.

These issues are further discussed in principle 8 below.

- creating efficient 'paths' through the system for core tasks
- increasing the overall speed and responsiveness of the CMS (especially as usage grows)

A classic example of inefficiency in many CMS products is the proliferation of 'tabs' in the interface. One tab is used for the standard page settings (such as the publish date), another tab for the content itself, and a third tab for additional metadata.

In these situations, users are required to frequently switch between tabs to enter the common details needed for all pages. Each time a tab is chosen, the system needs to refresh, introducing still further delays.

Of course, this is not to say that all options should be densely packed on to a single page. Consideration must be given, however, to balancing ease of use and efficiency throughout the CMS.

## The CMS must be efficient to use for regular authors

### 8. Provide efficient user interfaces

More than just being easy to use, the CMS must also be *efficient*, particularly for regular users.

Inherently, web-based user interfaces are at a disadvantage compared to desktop applications when it comes to efficiency.

Traditionally, web-based systems have involved a large amount of submit-and-refresh, which slows down use and impacts on efficiency.

While this is being steadily addressed by the use of technologies such as Ajax, there is still more work to be done to deliver truly efficient CMS interfaces.

In practice, efficiency involves:

- reducing the number of clicks to complete common tasks
- reducing the overall number of pages and tabs, by combining information or options (where appropriate)
- making efficient use of screen real estate when displaying CMS interfaces
- cutting the number of page refreshes required

## Help and instructions should be provided throughout the CMS

### 9. Provide help and instructions

Content management systems can be overwhelming, especially for first-time users. This is not helped by every vendor inventing their own terminology for almost every aspect of content creation and publishing.

Vendors can therefore do much to improve the usability of their products by including on-screen and context-sensitive help throughout.

This includes clear guidance and descriptions on the screens themselves, alongside the buttons and menu items. These instructions should help users work out where to go next, and how to complete common tasks.

In addition, all content management systems should provide extensive context-sensitive help covering all major system features. This should offer more detailed information than the on-screen instructions.

It may also be appropriate to allow users to turn off the on-screen instructions once they have mastered the application, thereby saving valuable screen real-estate.

It should go without saying that the vendor must also provide extensive training materi-

als and documentation, targeting general authors and site administrators.

While some products are extensively customised from customer to customer, the challenge remains for the vendor to find a way to support end-users with appropriate help and documentation.

## Authors should not need extensive training

### 10. Minimise training required

In practice, the majority of authors using content management systems will be general office staff.

For this reason, the CMS should be designed in a way that minimises the amount of initial training required for authors.

This same principle applies to site owners and administrators, noting that more training will always be needed for these staff.

While it will never be possible to entirely eliminate the need for training, the CMS can be designed to dramatically reduce the amount of training required.

Reduced training will be a by-product of some of the other key usability principles for content management systems, including principles 1, 6 and 9.

It is also something that can be directly assessed as part of the selection process for a new CMS, as discussed later in the article.

### 11. Support self-sufficiency

The earlier article *Self-sufficiency in a CMS* discussed the importance of providing site administrators (and authors) with the tools to manage the site in a non-technical way.

This extends the core concepts of usability to say that for the CMS to be truly usable, users must be able to complete common tasks without relying on third-party assistance or support.

In practice, this means providing users with simple point-and-click interfaces for common tasks such as:

- publishing new content
- managing or restructuring the site
- adding and managing users
- creating or updating workflows

- updating security settings

In all these cases, users should not need technical knowledge or development skills.

Note that this requirement has become one of the driving factors for organisations purchasing a CMS. With the web or intranet teams looking to have greater control over managing the site, the CMS must be designed to provide this level of self-sufficiency.

## Site owners should be able to manage their own sites

### Evaluating CMS usability

There are a number of different, very practical, ways of assessing the usability of potential CMS products as part of a selection process. These are explored in the following sections.

#### Usability in the tender document

As a starting point, a specific requirement relating to usability can be included in the tender document, articulating some of the principles contained in this article.

While it is not practical or meaningful to evaluate the usability of the vendors' offerings based on their written responses to the tender, it does send a clear message that usability is a key selection criteria.

Having a documented requirement also allows the usability of the products to be scored alongside the functional requirements, and therefore included in the final decision-making process.

#### Scenarios to assess usability

When it comes to the product demonstrations, pre-prepared scenarios should be used as a 'script' for the vendors to follow.

These scenarios provide a 'day in the life' description of how the CMS will be used, focusing on the key selection criteria in the tender.

Using scenarios in this way allows organisations to get away from the highly-polished (but not very realistic) demonstrations typically given by vendors, as well as ensuring that the demos focus on the most critical capabilities.

More than this, the use of scenarios gives the clearest indication of the overall usability of

the CMS when completing common tasks. Making vendors follow a pre-prepared script also allows the usability of each product to be more directly compared.

(In practice, some products will be able to complete tasks quickly, while others will leave the evaluation team confused and bewildered.)

### Sample training

Another simple but effective way of evaluating the simplicity and usability of potential solutions is to get the vendor to run some sample training.

The final short-listed vendors are asked to conduct their standard end-user training session with a selected staff member (who has not been involved in the CMS selection process).

Typically taking only an hour or two, this should give a very clear idea of how easy it is to learn the CMS (as well as allowing the training itself to be evaluated).

With very little effort, a realistic idea can be gained about how likely the CMS is to be adopted within the organisation.

(Credit must be given to Sonia Carter for this idea.)

## Usability testing can provide concrete results

### Usability testing

Probably the most direct way of assessing the ease of use of prospective CMS solutions is to conduct actual usability testing.

This involves identifying tasks that would be commonly undertaken by authors, and then recruiting a number of staff members to attempt these tasks using the CMS.

While this is a very effective way of quantifying the actual usability of the products, it also requires the most effort and preparation.

It may also be necessary to provide training for staff members on the CMS before the tests, as it is not realistic to expect that staff members should be able to use the products without some initial training.

For these reasons, usability testing is most appropriate when the CMS will be a critical

business system, or when it will be used by a very large number of users.

In these situations, the up-front investment in more formalised testing will generate far greater benefits in the long term.

## There is much to be learnt on how to define CMS usability

### Topics for further discussion

This article has only scratched the surface of the issues surrounding usability and content management systems.

Step Two Designs are not alone in discussing these issues, and there have been valuable insights gained from writers such as Tony Byrne ([www.CMSWatch.com](http://www.CMSWatch.com)) and Dan Brown ([www.greenonions.com](http://www.greenonions.com)) on this topic.

The consensus amongst all the discussions is that there is still much to be learnt on how best to define and assess a 'usable CMS'.

The following sections touch upon a few of the outstanding questions and issues.

### Different users, different needs

All CMS users are not the same. This has been deliberately underemphasised in this article, with most of the principles focusing on the needs of general CMS authors.

In practice, usage of the CMS may vary considerably between business areas, and between individual roles. This will certainly be the case as the CMS is used in ever more demanding situations.

How best to meet the needs of these different user groups? While many of the principles hold true for all users, specific usability issues will depend on the nature and frequency of use.

Simply focusing on the 'lowest common denominator' when rolling out a CMS will do much to support the general author, but may impact on the efficiency of more experienced or specialist users.

An argument can therefore be made that the CMS should allow the authoring and admin interfaces to be easily tailored to match the specific needs of individual user groups.

The challenge is that this requires a high level of experience and skill within the CMS team, to ensure that the tailoring is meaningful and effective.

For this reason, organisations are discouraged from conducting this type of customisation when installing a CMS for the first time. Only when further experience has shown with how the CMS will work in practice should the authoring interfaces be adapted to match individual needs.

### Accessibility?

In parallel with the need for a usable CMS, products should also be *accessible* for authors with disabilities. This is a particularly strong consideration within public-sector organisations, which often have a mandated requirement to meet accessibility standards for all systems (external and internal).

Unfortunately, when it comes to content management systems, there can be a fundamental conflict between accessibility and efficiency.

To address the inherent limitations of web applications, vendors are progressively increasing the richness of their interfaces through the use of technologies such as Ajax, Flash and Java.

While these changes help to improving the overall usability and efficiency of the products, they impact directly on accessibility.

For this reason, true compliance with accessibility is far off, and seemingly ever more distant. And a clear answer on how to reconcile this conflict has yet to be found.

### Specific design guidelines?

Ultimately, the question is whether there are some standard designs that should be followed by CMS vendors to ensure their products are usable.

There is huge variation between products at present, but the industry will eventually move to greater standardisation and consistency. At this point, perhaps there can be clear design guidelines that define how specific elements of any CMS should operate.

For example, workflow should perhaps work in a standard way, with a generally consist design across products.

While it is too early to sketch out what such design guidelines might look like, more effort must be devoted to identifying 'best practice' approaches within the CMS industry.

Only when there is a shared understanding of user needs and CMS behaviour between all vendors will products consistently be both usable and efficient.

### Summary

Usability is a key consideration when purchasing a new content management system, recognising that if the solution isn't easy to use then gaining adoption may be impossible.

Organisations should therefore keep in mind a few key principles when evaluating the usability of the potential systems. More than just ease of use, these include the efficiency of the solution, it's robustness, and the amount of training required.

Beyond this, broader discussions are needed within the industry to better define 'best practice' design for content management systems and to help improve the usability of all products.



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