Chapter 3

Terminological turmoil of Content management

3.1 Introduction:

The term content management is being used in different connotations. According to its usage content management is has been categorized in to different categories. Most of the cases, corporate level content management has been over emphasized as it is quite often been used by the industry level content managers. However the manifestation of content management in libraries may be equated with some of the divisions of content management which have been described below.

3.2 Types of Content Management Systems:

Content management can be categorized in different ways. Especially when the use of library managers involved, content management may be categorized any of the following way by which selection of a content management tool would be more prone, and thus reflect better implementation. Due to the vast array and variety of content out there it follows that there is a type of CMS to deal with it. Whatever the nature of the content it can be managed via a series of workflows; and these can be accessed by a variety of users. There are types of CMS which are designed for a specific purpose, for example web content management systems and then there are systems which cater to the needs of an organization.

Then there are also systems which cater to the needs of the mobile technology industry and those which manage content at the micro level, e.g. a graphic image rather than as a series of documents.
3.2.1 **Web Content Management System** (often referred to as simply WCMS) A program that lets one to author, edit, and publish website content easily. Like Word Press, Joomla, Drupal.

A web content management system (WCMS) enables a user to create or amend a web page without the need for the requisite technical skills. This system is based upon a series of templates which form the structure of a website and are used for content creation. The content author/editor inserts content into these templates which are then published onto the site. This is applied to internet websites, intranets and extranets.

One of the most popular types of CMS is a web content management system (WCMS) which enables people to create, edit, publish and maintain the content of a website. This includes internet sites, intranets and extranets. This is the type of CMS most people think of when asked about content management in general. They assume that it only applies to web content but fail to realize that the term ‘CMS’ encompasses a wider range of content, for example digital asset management.

3.2.1.1 **Types of WCMS**

Many people assume that there is only one type of WCMS but there are, in fact, three types which include:

- Offline processing systems
- Online processing systems
- Hybrid systems
- An offline system processes content before it goes live.
- An online system is based upon user-generated content which includes a wide range of material such as wikis, blogs, forums etc.
- A hybrid system is a combination of offline and online systems.
• These systems are discussed in greater detail as individual subsections.

3.1.1.2 The need for a WCMS

The main advantage of a web content management system is that it is designed for the novice or non-technical user as well as the power user. This is ideal for a business or large organisation such as a government department where there is likely to be a team of people with responsibility for the corporate website. Their responsibilities will include uploading content, amending a document, adding an image, updating records and removing out of date content. This is done using HTML and XML templates and a WYSIWYG editor. These large websites often consist of thousands of pages which store a wide range of corporate information that is available to the staff as and when necessary. The old way was to engage a techie with the ability to hand code websites using HTML which meant employing someone to do so, and then, to make any changes which needed doing. This limited site management to this one person which was expensive both in terms of time and money. At one time few people could build a website using HTML or had the inclination to do so which meant that companies had to employ a HTML whizz kid if they wanted a new website or changes making to their existing site. Web authoring tools appeared on the market such as Dreamweaver and FrontPage which enabled many more people to build and maintain websites without the need for technical skills. These proved to be very useful tools but required a long period of training and familiarity with the software before using it. If more than one user is working with Dreamweaver then this means purchasing multiple licenses which can be costly, especially for a small to medium sized business.

Web authoring tools such as Dreamweaver are ideal in a situation in which someone has the skills and experience of using this software with a small site, e.g. around ten pages or so. It is better suited to someone with a design background rather than a content editor as there are issues with broken links, inconsistency with formatting and
poor structure and layout. There is still a place for authoring tools such as Dreamweaver and it seems to be the case that they are better suited to a niche market. But when it comes to managing large, corporate websites with multi-functionality, a range of processes and workflows and the ability to extend the system on an ad hoc basis then choose a WCMS.

3.1.1.3 Advantages of a WCMS

The big plus factor with a content management system is the ability for non-technical people to create, upload and publish content whenever necessary. Content is published across the site which ensures a consistent approach a central tenet of usability and removes the risk of duplicate content. It means that non-technical staff can work with low level content such as text instead of using experienced, technical staff. This frees up technical staff for other duties and is more cost-effective for the business. Someone who is business orientated rather than a hardcore techie can create a series of web pages without any knowledge of HTML or a programming language. They do this via a set of templates which provides the structure for the website and enables content to be inserted into a blank web page.

- Approval process which validates or rejects content before it is published on the live site.
- Cross linking between individual web pages which allows the user to navigate between pages without always using the navigation bar.
- Content is published and made available to the website visitor as soon as possible. This can be done either in or out of the office or at any location where there is Wi-Fi access.
- Strict focus on content creation, editing and upgrading plus other similar functions by means of a usable interface.
• Standards compliant design which is good news for search engines. Plus the use of an XML site map enables easy access for search engines such as Google.
• Changes to the content can be easily tracked on the site and restored to an earlier version if need be.
• Easy dissemination of content to a wide ranging audience. This includes the re-use of content in a variety of devices such as mobile phones, Digital TV, touch screen kiosks etc.
• Dynamic experience for users compared to a static site or brochure-ware. Users can interact with others via a forum, blog or other form of social media which means an enjoyable experience and one that is likely to be repeated.

The overall benefit from a WCMS is the ability to control all of the content, a consistent, professional look and feel, easy access for the search engines which is important for SEO purposes and an improved user experience.

3.1.1.4 Benefits of a WCMS for Library

Web content management systems are the preferred choice of system for a great many companies who find that they obtain a good return on their investment (ROI). They find that a system with a centralized workflow, audit trail, processes and guidelines means that content can be tracked at every stage to ensure a constant flow. Any changes to a piece of content are immediately obvious which reduces the risk of incorrect or outdated information and visitor dissatisfaction. Users cite out of date or factually incorrect content as one of their reasons for leaving a website which is why it is important to have fresh, interesting and top quality content which is checked on a regular basis. A WCMS can ensure that the content is high quality, designed for the intended target audience as well as presenting a professional looking ‘shop front’ to the visitor. Another important reason to use a WCMS is that of page ranking. Content which is frequently updated via a WCMS is often ranked higher in the search results than static content. This is why it is important for businesses to update their content.
on a regular basis for both usability and SEO purposes. A WCMS enables staff with few technical skills to use the system thereby enabling more experienced users such as webmasters to focus upon technical issues such as improved functionality or site re-design.

This is far more cost effective than having technical staff employed to do low level work such as uploading a Word doc or some other piece of content which can be done by less qualified staff. Plus it enables less skilled staff to take responsibility for their work and feel a sense of achievement in their contribution in much the same way as a higher skilled person would. Finally, from a competitive perspective, a website which has been built using a WCMS projects an image of a dynamic, go-getting company, and one which is open to new ways of thinking and innovation. The old adage: content is king still applies and never more so when it comes to maximizing the efficiency of your website. The more time and effort expended into this the better.

We mustn’t forget that it’s the content which drives the website but the issue is of quality rather than quantity. It is important to consider what information is needed and how is this to be managed. A WCMS can be chosen once these two questions have been answered.

The driver for any WCMS is ensuring that the right content is on the site and is aimed at the right audience, and at the right time. Provide good quality content which fulfils user needs and ensure that they can find this quickly and easily. A WCMS with a good, reliable authoring environment will support content editors and enable them to write professional, top quality content.

3.3 Enterprise Content Management System (ECMS): Intranet-like tool that allows everyone in the company to access, manage, and review documents, templates, media, and other information assets. Also includes collaborative features
like wikis. EMC Documentum, Atlassian Confluence, Oracle WebCenter. If SharePoint had more content management features, it would be in this category.

These systems or ‘enterprise content management systems’ (ECMS) handle the content, assets, records and other information which defines the structure and hierarchy of an organisation. This is a formal system which employs a range of processes, tools and strategies to do so. It includes scanning, tracking, indexing and collaboration with the aim of streamlining the management of company information. This is the name given to a large type of content management system which is especially designed to meet the needs of a business or organisation, e.g. a government department. The main feature of these systems is that they are able to handle large amounts of content which are directly related to the company, for example records, employee information, assets etc. This information comprises the procedures and hierarchy of that company. An enterprise CMS uses a variety of tools, workflows and methods to manage the lifecycle of the content. This includes web content management (WCMS) but also includes media management and content organisation.

The aim of this type of system is to streamline access for employees to company information so that they can access this content quickly and easily instead of forcing them to search through multiple software applications. This also has the effect of simplifying business processes which saves both time and money. Security is an issue for any system such as ECMS, and in particular for organizations such as government departments who handle large amounts of sensitive or top secret data. Security measures are implemented at different levels within this CMS, e.g. user level, which enables all forms of interaction to be monitored and audited.

3.3.1 Advantages of an ECMS
These include enabling visitors (or members of the public) to interact with the site without affecting its content and structure. They can download a document or complete a questionnaire without altering the fundamental structure of the site. Other advantages of an enterprise CMS include:

- Reduced paperwork which also reduces the need for storage facilities.
- Reduces the risk of missing paperwork, especially important corporate documents.
- Ability to track the lifecycle of a document as it undergoes a series of processes, for example, capture, edit, maintain and deliver.
- A set of metrics which enable a company to assess its effectiveness and productivity.
- Instant access to information which may have previously been unavailable or only accessible in an older format, e.g. microfiche.
- Ability to control information across all departments, for example human resources (HR), accounts, customer services etc. This is particularly important for the accounting department which is not only charged with looking after the accounts but also has to safeguard the company against internal and external fraud. Integration between different departments through this CMS means that it is possible to assess the performance of the company and how it compares to its competitors. This is a useful means of checking if the company is achieving its business goals.

A plus factor of an ECMS is its ability to store information until it is no longer necessary or out of date. This type of CMS determines when a piece of content has expired and will remove this smoothly and unobtrusively. This means that all the content is timely, up to date and useful.

Compare this to old style filing systems “both paper and electronic, which stored large amounts of information for an indefinite period of time. This often resulted in
awkward, unwieldy systems which were a nightmare to deal with. An ECMS can be adapted to whatever the company’s needs and requirements are. The content can remain ‘in house’ which may be a better option for some companies and their security measures and delivered it in whatever way is appropriate.

3.4 Mobile content management systems (MCMS) : The rapid growth in the mobile technology industry has led to an increasing demand for systems which can manage content for smartphones, PDA’s, mobile phones and other handheld devices. Mobile content management systems (MCMS) were originally designed for the business to customer (B2C) market but have expanded to include business to business (B2B) and business to employee (B2E). It is no surprise that there is a mobile content management system (MCMS) especially when you consider the growth in mobile devices such as smartphones and PDA’s. This growth in demand and the increasing sophistication and complexity of these devices has fuelled the need for a content management system which can do all of this. This type of system manages and delivers content on a wide range of mobile devices which includes mobile phones, PDA’s and smartphones.

The original aim was the business to consumer (B2C) market with its focus on the ubiquity of the mobile phone. The massive surge in demand for these devices plus their increasingly popularity with all types of users led to the development of mobile systems which managed content such as ringtones, text messaging, news and games. But this has expanded from that into new areas such as business to employee (B2E) and business to business (B2B) in which information is shared in a useful, effective and efficient manner between businesses and corporations.

3.4.1 Types of MCMS
These range from small, unobtrusive systems through to large systems which are capable of multiple information delivery. Some systems exist as a feature or add-on as part of a larger MCMS.

### 3.4.2 Advantages of a MCMS

- Specialized set of templates: these are customized to fit the needs of a particular mobile device, for example a smartphone. They have to take the features and limitations of each mobile device into account which means developing a set of templates which will do just that. There are two types of templates: multi-site and multi-client which enable the website to be viewed via a specific sub-domain or all versions of the site are viewable at the same domain. In the latter case, the templates displayed to the user are based upon the type of device which they are using to access the site.

- Targeted content: this means location-specific content such as maps, news and adverts is accessed on a mobile device based upon the user’s location at that time. An example of this is a GPS navigation system which is the most popular location based system but can be integrated with mobile phone technology. Examples of MCMS include Wap-2-Go, Mofuse and Synapsy.

An important issue is that of usability: an MCMS interface needs to take into account ease of use, readability and navigation in relation to the small size of the screens of mobile devices. Designing for mobile devices is different from designing for the internet and issues such as screen size, supported/unsupported features by the browser and layout need to be taken into account.

### 3.5 Component content management systems (CCMS)

Component content management systems (CCMS) are a specialist type of system which manages content at a deeper or ‘granular’ level. This refers to a single piece of content such as a paragraph of text, a photograph or a graphic rather than a
complete document, which is stored within this system. It is reused within a
document or a series of documents which ensures a consistent approach. Each
individual piece of content has its own workflow and is tracked either as a single
entity or as part of a larger system. A lesser well known type of system, a component
content management system (CCMS) is known for its ability to store small items or
‘components’ which comprise a document rather than the actual document itself.
This is defined as managing content in a ‘granular approach’ in which it is broken
down into smaller units such as a word, image or link rather than a complete
document. This includes graphics, photos, set of links, a single word or even a
complete paragraph of text. All of these are used and re-used when creating a
document and are the subject of discussion within this section.

Every component is stored for one time only within the CMS which is a guarantee of
a safe, reliable item of content. This component is then re-used in a single or range of
documents, for example a company logo which ensures a consistent look and feel
across the entire set of documentation.

A CCMS operates in the same way as any other type of CMS in that it employs a
series of processes to manage content. In this case each item of content has its own
lifecycle which means that it can be monitored individually or as part of a larger set
of content. This lifecycle includes name of content author/owner, version, approved
and usage.

3.5.1 Advantages of a CCMS

The main advantage is that of being able to re-use content in multiple documents.
This applies to a single word or image through to a section of text, e.g. overview
section. This removes the need for endless copying and pasting and improves both
the quality and professionalism of the documentation. It also helps to ensure a
consistent approach.
Another advantage is the ability to use a component in a particular context and then re-use it in a different context. A good example of this is the issue of translation: a CCMS can translate a piece of content into a different language which is then used within a variety of settings. This doesn’t apply to content such as links and references. This is particularly useful for companies who are expanding into international markets and need to translate their content into a variety of languages, appropriate to these markets.

The other advantages of CCMS are:

- Cheaper to maintain
- Reduces translation costs
- Content only has to be translated once
- Consistent, high quality content which aids usability
- Removes the need for repetitive updates, creation, copying and pasting and frequent reviews.
- Ensures that standards and corporate branding are adhered to across the board.
- Improved use of staff time and resources
- Reduced costs from the improved processing of the content.

Component CMS is ideally suited to companies who have a wide range of content which is aimed at a diverse audience. This includes training/support, advertising and marketing, human resources etc. and requires a CMS such as this which takes into account the multi-channel approach of a business or organisation. A CCMS can be used as a standalone system or as part of a larger structure such as a web content management system (WCMS).

3.6 Document Management System or Electronic Document Management (DMS or EDM): A place to store, access, and manage your PDFs, MS Word, or other
documents. Sometimes seen as a component of an ECMS. DocPath, Document Locator, SharePoint, LiveLink (now OpenText ECM Suite, Content Lifecycle Management), Oracle Webcenter–Document Manager. EDM (Electronic Document Management) is the management of different kinds of documents in an enterprise using computer programs and storage. An EDM system allows an enterprise and its users to create a document or capture a hard copy in electronic form, store, edit, print, process, and otherwise manage documents in image, video, and audio, as well as in text form. An EDM system usually provides a single view of multiple databases and may include scanners for document capture, printers for creating hard copy, storage devices such as redundant array of independent disks systems, and computer server and server programs for managing the databases that contains the documents. An EDMS is a collection of technologies that are used to create, capture, index, distribute, review, maintain, store, retrieve and dispose of information assets. Major components of EDMS include imaging, document management and workflow processing. EDMS eclipses the previous storage median of aperture cards both in return on investment and functionality.

3.6.1 Advantages of EDMS:

Easy Access

From the moment the document is scanned, it becomes accessible from any computer by an authorized employee. Compare this immediate access to a traditional paper file, which has to be housed in a file cabinet or room and then must be must be requested, retrieved and delivered to an employee. During its use that paper file can not be accessed by another employee, nor is it easily tracked during its journey. Electronic documents can be retrieved immediately, shared and routed to any employee who needs it.
Searchable Text

When a document is scanned, OCR examines the text and creates a digital version of the contents. This text is stored with the document, creating a file that can be searched by any employee. If a company needed to find every file that mentions a particular client, they could search the document database for every mention of that name. This turns ordinary files into huge databases of information that can be used for marketing, audit and management purposes.

Cost Savings

The switch to electronic documents can be a tremendous cost-saving opportunity for most companies. The cost for filing cabinets, supplies and the real estate required to store them on site is substantial. If a company uses an off-site storage facility the cost to store and retrieve files is equally expensive. Add to this the cost for filing clerks and the downtime required to find specific files and the price of a manual filing system is substantial. With digital systems, there is a cost for the scanning and filing technologies, but once digitized, the cost for data storage is quite low.

Security

The difficult task of securing confidential information is simplified with a digital document management system. Whereas paper files need to be stored in secure cabinets and controlled using a manual access system, electronic documents are easily encrypted with access controls using passwords and an authentication system. Electronic files never go missing, nor do they easily fall into the wrong hands.

3.7 Learning Content Management System (LCMS or LMS): it Stores, manages, and publishes or allows users to experience learning and training content. Joomla LMS, Absorb LMS. Many organizations looking to add more e-learning elements to their company training programs get stuck choosing between two similar-sounding, but ultimately different, systems: Learning Management Systems (LMS) and Learning Content Management Systems (LCMS). There are a number of similarities between the two, and
recently many software packages have blurred the differences between them. However, there
are a few key differences that organizations should keep in mind when looking for an online
training system.

An LMS provides the simplest platform for managing the experience of students or
trainees as they interact with e-learning content. One of the assumptions about an
LMS, which will become clearer in the explanation of an LCMS, is that the content
has already been created, and that it's in the right format to be compatible with these
systems. Beyond that, most LMS packages have several similarities in common:

• An emphasis on registering participants, tracking their activity, and gauging
  their progress through online coursework.
• Interaction with existing Human Resource Information Systems (HRIS), to
  track the pool of those eligible for participation, and for reporting back
  outcomes.
• Increasing the use of talent management functionality, which sometimes
  overlaps with functions being performed by HRIS.
• In some cases, tools for analytics and performance management are included.

An LCMS provides a more complex platform meant for developing content used in
e-learning programs. Many LCMS packages available on the market also contain
tools that resemble those used in an LMS, and most assume that an LMS is already in
place. The emphasis in an LCMS is the ability for developers to create new material.
Most content-management systems have several aspects in common:

• A focus on creating, developing, and managing content for online courses,
  with far less emphasis placed on managing the experience of learners.
• A multi-user environment that allows several developers to interact and
  exchange tools.
• A learning object repository containing learning materials, which are commonly used components that are archived so as to be searchable and adaptable to any online course.

Organizations that have all their existing materials in commonly used business software formats – like Microsoft Office products – will find that few LMS platforms allow for them to simply be imported and modified. Those materials need to be created from scratch, and to do that you will need an LCMS.

A number of LMS platforms serve the education market, including some of the most well-known, such as Blackboard. There are a few key differences that make education packages unique, and that may also obscure the boundary between LMS and LCMS.

• An assumption that a campus will already have a number of IT environments for managing registration and enrollment, so the emphasis is on compatibility with those systems.
• A number of content-authoring and creation tools that resemble those found in what are otherwise described as LCMS platforms.
• An emphasis on semester-long interaction with a teacher, leading to more options for communication such as email, discussion rooms, wikis, or sometimes blogs.

3.8 Cloud CMS

Although cloud computing is becoming increasingly popular, it is not a new concept - web-based email such as Hotmail and Yahoo, are located 'in the cloud'. There are two types of cloud CMS:

• 'Fully cloud' CMS is often provided as part of a package or service. Usually the functionality cannot be modified to suit the user's needs
'Partial cloud' CMS is located on the user's own cloud-based web-server. It provides for greater flexibility since the functionality can be modified, either with add-on modules or by altering the source code.

Cloud CMS is well suited to small and medium-sized enterprises, as installing CMS software on an internal server usually requires technical expertise and ongoing support.

3.9 Proprietary CMS

Proprietary CMS software is paid for - there is usually an initial license fee, and sometimes an annual charge for updates and user support. Proprietary software can usually be tailored to suit the user's requirements, although this may come at additional cost. If possible look for a CMS solution that meets all of your requirements out of the box.

If implementing a CMS with an existing website or backend systems, this may require considerably more development work. If choosing a CMS when creating a website for the first time, ensure that the solution you choose provides the features and flexibility that you will need in the future.

Proprietary CMS can be expensive, with additional costs for customization and upgrades, as well as for training and ongoing support. It is essential to be clear about what is covered by the license, and what additional costs are likely in the future.

3.10 Open-source CMS

Open-source CMS software can be downloaded at no initial cost. Popular open-source CMSs are created and developed within a user community environment, where third-party developers help to improve the original product. This often provides a wide range of off the shelf customizations - this is particularly the case where there is a big demand for add-ons, such as for e-commerce websites.
However, open-source CMSs are not always free. Fees are often charged for templates, add-ons and other adaptations. In addition, although there is no license fee for initial installation, you may need to pay someone to provide technical help during installation and setup, as well as for staff training, customization and support. There will almost certainly be a requirement for staff training, and the better templates and add-ons tend to be sold rather than given away.

There are numerous options available when it comes to CMS which all appear to do the same thing but with a few subtle differences. This is why it is important to know about the type of content you are dealing with and the manner in which it needs to be managed.

**3.11 Semantic Web Content Management System (SCMS):** The migration to the Semantic Web requires from CMS that they integrate human- and machine-readable data to support their seamless integration into the Semantic Web. Yet, there is still a blatant need for frameworks that can be easily integrated into CMS and allow to transform their content into machine-readable knowledge with high accuracy. The SCMS (Semantic Content Management Systems) framework, whose main goals are the extraction of knowledge from unstructured data in any CMS and the integration of the extracted knowledge into the same CMS. Our framework integrates a highly accurate knowledge extraction pipeline. In addition, it relies on the RDF and HTTP standards for communication and can thus be integrated in virtually any CMS. We present how our framework is being used in the energy sector.

**3. 12 Accessing similarities of Content Management Systems**

Every kind of CMS is designed to accomplish the same foundational goal: **manage information efficiently.** And all of the type’s content management systems share a base set of features. These include:

- Storing content
• Controlling access to content
• Checking content in and out
• Managing the lifecycle of content – from creation through to final disposition (archive or destruction)
• Allowing automatic and on-demand version control (know the history of changes and when each one was published)
• Searching for content
• Publishing content (sometimes)
• Providing analytics or reports

3.13 Accessing dissimilarities of Content Management System

Here’s the crux of the matter—even though they share the same foundational goal and some basic features each type of CMS focuses on very different sets of objectives. Just as you wouldn’t choose a limo to transport scientists to the International Space Station, you shouldn’t choose one CMS when what you really need to accomplish is something completely different.

For example, a CCMS is very specialized and solves the problem of managing the connections between hundreds of thousands or millions of small topics and graphics. Other vital CCMS functionality includes robust, multi-faceted search (being able to filter by many different options) so authors find content easily; integrations with XML editors like Adobe FrameMaker or Syncro Soft’s oXygen; and providing some method to see all the places a piece of content is being used (single sourced). Technical communication teams typically need the complex functionality of a CCMS, but can get sidetracked by the flood of information available on hundreds of WCMS alternatives.
Chapter 3: Terminological turmoil of Content Management

3.14 Merger Lines between the Types of Content Management Systems

To confuse things even more, the lines between the different kinds of systems get a little blurry sometimes. For example, Drupal (a WCMS) has been used by at least one team as a CCMS in an open source project. Sometimes companies offer add-ins that change a WCMS into more of an ECMS. And, sometimes third-party tools attempt to change an ECMS into a CCMS (with varying success).

Along the same lines, an ECMS or DMS with a plug-in and a special authoring interface could possibly be used for technical content (DITA for example), but the results are not always successful.

3.15 Summary

This chapter identifies different types of content management system prevailing along with their advantages and disadvantages. The similarity as well as dissimilarity of content management systems were delineated to identify the efficacy of the content management system. Moreover, the blurring the lines between the types of Content Management Systems have also been described in detail.

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