

Content Mapper™

Content That Works!

*"Whatever resolves uncertainty is information.
Power accrues to whoever can handle information.*

R. Buckminster Fuller, British architect and visionary

An Information Mapping® White Paper

Published June 2004



INFORMATION MAPPING

Contents

INTRODUCTION..... 3

Overview 3

CONTENT MANAGEMENT: CHALLENGES AND SOLUTIONS 5

The Promises of Enterprise Content Management 5

Why Is Content Management Not Working? 7

CONTENT MAPPER..... 12

Introducing Content Mapper 12

Creating Content 16

Working with a Content Management Solution..... 18

Publishing Content 21

Managing With Content Mapper 22

Content Mapper and Structured Content..... 23

Technology and Prerequisites 24

INFORMATION MAPPING®..... 25

Overview 25

FOR MORE INFORMATION..... 27

Contact information 27

Introduction

Overview

About this white paper

This white paper introduces Information Mapping's Content Mapper™ tool and presents Content Mapper in perspective against the enormous content management challenges and opportunities facing enterprises and organizations around the world today.

In addition, since successful enterprise content management solutions require more than "just" software tools, this paper also introduces Information Mapping in connection with the design and implementation of information architectures, information standards, and writing methodologies.

Content Mapper

In one sentence, Content Mapper is an easy-to-use, Microsoft Word™-based XML authoring and publishing tool that acts as a front-end to leading content management systems and to a personal repository.

Purpose

The purpose of this paper is to present an *overview* of Content Mapper as well as to introduce some of the issues or challenges that Content Mapper can help solve. Although some level of detail is included, the paper is not a user-guide or an in-depth technical discussion of the tool.

Content Management?

In this white paper, the term "*content management*" is used in a broad sense to cover

- all the processes and components involved in creating, capturing, organizing, categorizing, and structuring information resources so that they can be stored, published, and reused in multiple ways, *and*
- the management of these processes to create business results by maximizing returns on the organizations content investments.

This definition includes or covers many other concepts such as for example knowledge management, document management, digital assets management, web content management, records management, etc.

In this white paper

This white paper contains the following topics.

Topic	Description	Page
Content Management: Challenges and Solutions	An introductory discussion about the opportunities and the challenges or roadblocks of content management	5
Content Mapper	Introduction to the Content Mapper tool	12
Information Mapping	A brief overview of Information Mapping	25
For More Information	Contact information	27

Content Management: Challenges and Solutions

The Promises of Enterprise Content Management

Introduction

All assets of a company need management – but for the content-assets, the need is even greater since the more

- *good* content gets used, the more business value is created, increasing the assets value with use, and
- *bad* content is used, the more damages and costs are incurred, increasing the *nuisance* value of the asset with use.

The current multi-billion dollar trend toward enterprise content management has gained tremendous momentum, and for good reasons!

Overall, content is not being managed in a way that matches the huge investments put into creating it.

Beginning the Discussion

The following quote is a good starting point in a discussion about content management:

More than 80% of enterprise's digitized information reside in individual hard drives and in personal files and 80% of the data is unstructured, not secure nor backed up. Individuals hold the key to the knowledge economy and most of it is lost when they leave the enterprise.

Microsoft

In this particular case, the quote is by Microsoft – but we believe almost all other companies and organizations around the world could make similar statements.

Why Content Management is Important

According to Microsoft:

Employees get 50%-75% of their relevant information directly from other people

Microsoft

While transferring knowledge from person to person may work for small amounts of content and for a few people in small organizations, it is an extremely risky and costly situation for most enterprises!

Content Management benefits and promises

Content management holds very large potential benefits – both in terms of *increased revenues* and in terms of *cost-saving* for most organizations.

The table below shows the major benefits or typical promises of a successful content management solution.

Benefit / Promise	Comments
Content sharing	Allows everybody in an organization to share content, information and knowledge across departments, divisions, and geographical borders to maximize the business value of the information through usage and to avoid recreating content over and over again.
Content reuse	Saves costs by creating content once and reusing everywhere else (single sourcing).
Platform independence	Saves costs by providing easy, platform-independent access to content, and by adding the ability to publish to whatever format is needed.
Search	Makes it possible (and easy) to search for and retrieve the information you need.
Quality	Achieves better quality and consistency through process and workflow improvements and (first of all) through reuse of critical content components.
Security	Preserves the content investment by protecting, storing, and archiving content.

Why Is Content Management Not Working?

Introduction

Many companies are experiencing too little return on large investments in content – even after having invested in a state-of-the-art content management system as shown in the quote below.

*Top-tier Content Management software: \$1,000,000.
 Consulting to get the software to work: \$1,000,000.
 Convincing your employees to use the software correctly:
 Priceless...*

Peter Dresslar, President, Dresslar, L.L.C.

This topic outlines some of the common causes for this situation and the results.

Common causes

The table below presents common causes of problems with content management.

Cause	Description
Unusable content	If important content is incorrect, incomplete, or impossible to read and understand, this is clearly a major problem – and it is a problem that no software tool can solve on its own. Although it sounds trivial, this is certainly one of the biggest problems for many corporations.
Architecture and metadata	Search and content reuse relies heavily on the overall content architecture and on the quality and consistency of the metadata attached to the content – not only on a document level but <i>also on a component level</i> . Missing or badly managed metadata prevents any Content Management System solution from being successful.
Unfamiliar tools	For companies trying to implement an XML-based content strategy (to solve problems with binary/proprietary formats), content editing tools have been a major stumbling block since there are many high-quality XML editors around. The XML editors are unfamiliar to and not accepted by most corporate content creators.



Cause	Description
Content trapped in silos	<p>Employees: Possibly the worst place relevant content can be trapped is inside the head of an employee who does not share it with anyone – and who may leave the company.</p> <p>Inaccessible Information:</p> <p><code>"Moreover, key decision makers are often unable to make informed decisions because the information they need is trapped within documents or databases in another part of the organization." (Microsoft)</code></p> <p>Content Silos: Other types of "silo-like" content traps that make sharing and reuse of content difficult or impossible are</p> <ul style="list-style-type: none">• paper• personal hard disks• complex folder structures on shared server drives• departmental silos• different (incompatible) content management systems (we have current examples of major enterprises with more than 18 different content management systems), and• other SQL-based databases: Textual and graphical content is often managed separately from for example ERP-databases. But although these databases contain a lot of numerical data, they also contain important textual content.
Binary formats	<p>Obviously, proprietary binary content storage formats (for example, Word .doc-files) can prevent both sharing and reuse of information:</p> <ul style="list-style-type: none">• Sharing is difficult because of potentially incompatible binary formats• Reuse is difficult because binary formats are non-transparent to other applications <p>Storing content in XML format can solve this – but producing XML content has so far been difficult to implement broadly.</p>

Cause	Description
Lack of standards	<p>Solutions will not work as well as they could without a common set of standards in terms of</p> <ul style="list-style-type: none"> • content architecture and metadata (and DTDs and Schemas) • content components and storage granularity, and • consistent writing methods for content authors.
Document paradigm	<p>The current document paradigm makes content reuse hard to achieve because of the very nature of a document. A document is normally put together to serve a specific purpose and a specific target audience. Even when <i>parts or components in the document could be reusable</i>, the entire document is much less likely to be reusable – because a document is a unique mix of components as shown below.</p> <div data-bbox="565 751 1351 1192" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">Metadata</p> <ul style="list-style-type: none"> • Assembly of information components • For a specific need • For a specific target audience • For a specific medium <p style="text-align: center;">Warning/Substance code xxd</p> <p style="text-align: center;">LapProc 23-456/Compound zz</p> </div> <p>Important: If the document is the basic unit of granularity, reuse is limited.</p>
Unstructured or poorly structured documents	<p>Lack of or poorly structured documents means that users can't or won't find the information they need. Useful metadata become difficult or impossible to attach at a level of granularity that makes sense for the user.</p>
Lack of acceptance	<p>If the users feel that the content management system and the content creation tools (editor/word processor) are unfamiliar, difficult to use, slow or inefficient – and if they do not see the solution as something that can help them get their work done, then the content management system may be underutilized, ignored or even rejected.</p>

Introducing a content management system

Implementing a state-of-the-art content management system will help companies meet many of the content management challenges, especially when combined with an XML strategy that

- improves sharing
- improves searching
- improved security, and
- provides *potential* for improved reuse.

Content management systems provide the infrastructure in terms of software and hardware that will allow and support effective management of content.

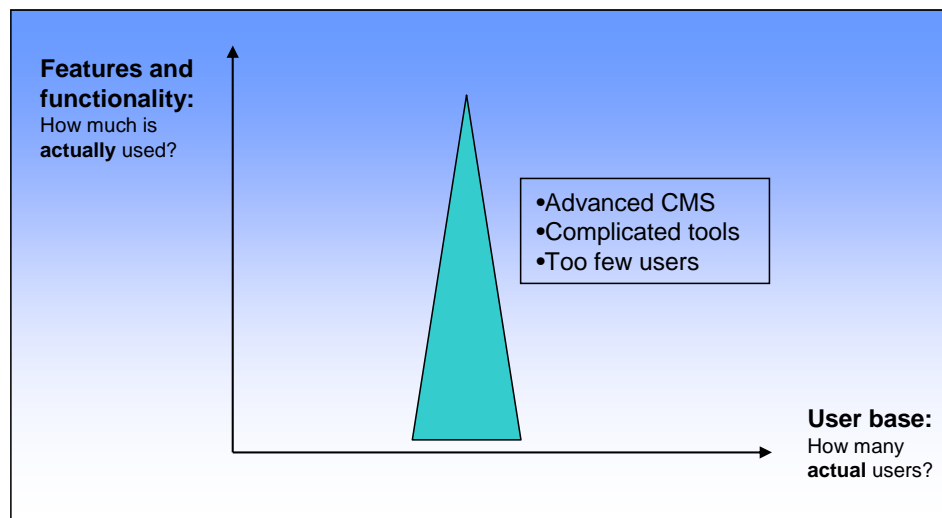
However, the content management system in itself will not solve any problems without

- standards, architecture, and metadata, and
- familiar, easy to use tools (this particular problem may in fact get worse if the chosen system adds new levels of complexity).

Results: Missing Return on Investment (ROI)

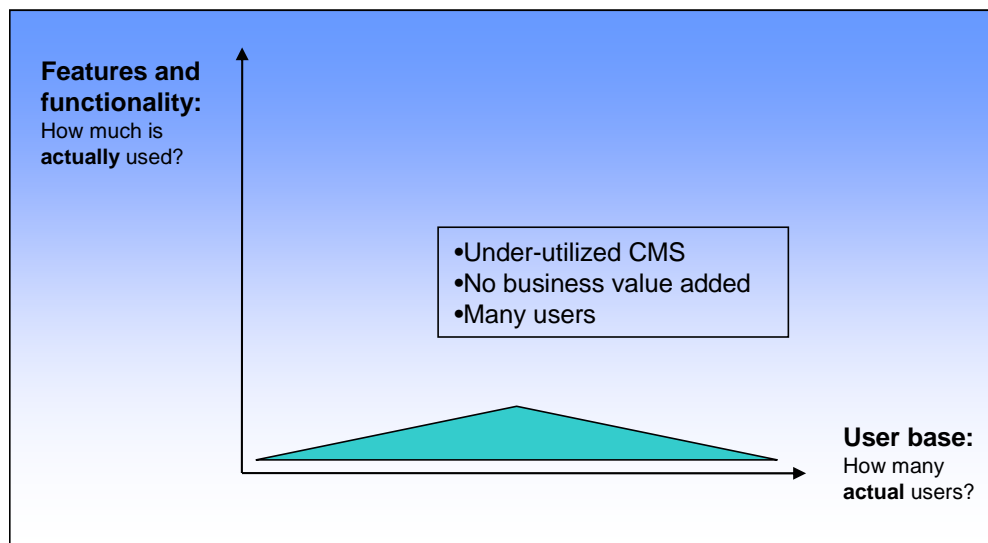
A content management system can provide help for companies in meeting their content management challenges. Even more so, if XML is used as the primary architecture of the content management system.

But unfamiliar, complicated tools may lead to a content management system implementation with a very narrow user base, because only small, specialist teams are able to actually realize the potential of the content management system, and making effective use of all the advanced features:



In other cases, where the tools are reasonably easy to use but there is no architecture or standards in place and limited possibilities for content reuse, the solution can provide too little business value, even with a broad user base.

In both cases, the ROI will be much lower than what *could* be achieved and what *should* be expected.



Summary

- Content is a key corporate asset that needs to be managed.
- A content management system combined with an XML strategy can help companies meet the challenges.
- Lack of content standards, architecture, and familiar, easy-to-use tools can prevent a solution from generating the expected ROI.

Content Mapper™

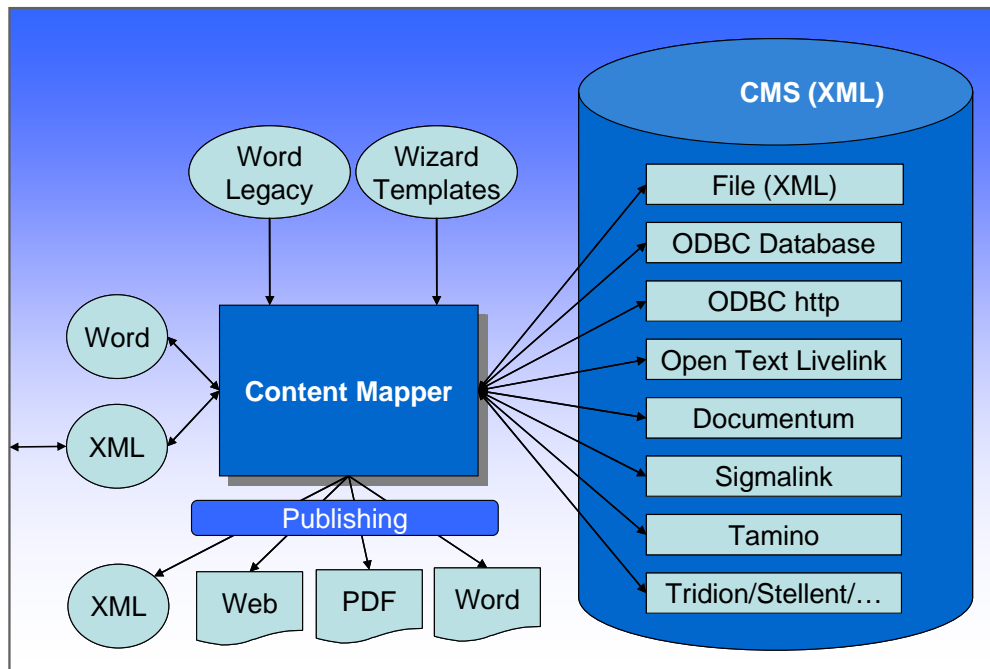
Introducing Content Mapper

The main advantage to traditional word processing tools is that they are familiar to most employees. If you are dealing with casual, non-technical authors, there may be an advantage in sticking with a traditional tool.

Ann Rockley, President, The Rockley Group Inc. in a webinar offered by Arbortext and Documentum

What is Content Mapper?

Content Mapper is a Microsoft Word-based XML authoring and publishing tool that works as a front-end to content management systems.



Advantages of Content Mapper

Content Mapper allows you to interact with systems and processes from within a familiar, powerful front-end productivity tool and leverages your investments in existing line-of-business applications.

Since Content Mapper is based on Microsoft Word training, time is minimized while adoption rates for new solutions are dramatically increased.

Furthermore, because the native file format for Content Mapper is XML and the application supports any customer-defined XML Schema, as well as interoperability with Web services, the information gathered in Content Mapper can easily be integrated with an organization's databases and servers. This means that any information gathered with Content Mapper can be reused and repurposed by anyone *or any process* in the organization. This greatly increases productivity and the power of that information.

Content Mapper and Information Mapping's methodology provide a simple, yet powerful set of standards to support authors. This "integration layer for authors" enhances the utility of XML and CMS technologies.

Features overview

The table below describes the features of Content Mapper.

Feature	Description
Basic features	
Familiar and easy to use	The user interface is based on and very similar to Microsoft Word – but even simpler than standard Word.
Controlled user interface	All toolbars and menus are completely configurable through XML configuration files. This makes it possible to simplify the user interface and to leave out unnecessary buttons and commands
Multiple document types	Content Mapper hosts and provides services to multiple document types (with different styles, formats, and forms).
Briefcase mode	Content Mapper works both online and off-line. Supports portables.
XML features	
XML roundtripping	The Word → XML → Word roundtripping includes vector based Word graphics (VML). Handles multiple XML Schemas or DTDs. Note: Since graphics and pictures including text, call-outs, and so on are saved as VML-XML it is possible to use translation tools <i>even on text in graphics</i> . This leads to very significant cost savings in connection with localization or globalization of content.
Robust XML engine	Converts all content to XML, even cut-and-paste content from external sources.



Feature	Description
XML Schema and DTD	Supports content validation against XML Schemas or DTDs.
Encrypted XML	Supports encrypted XML content (for example XSLT stylesheets).
Unicode (UTF-8)	Works with the entire Unicode character set as a standard.
Configurable attributes	Attaches in-line XML attributes to content elements or components in Word.
Content creation features	
Easy content creation	Supports multiple fill-in-the-blanks forms for each document type. Insert standard phrases/boilerplate texts.
Configurable standard tables	Inserts complex standard tables when the table is selected from a list.
Wizards	Provides wizard help to create new documents from a list of templates, for example: standard reports and memos or standard project document.
Legacy import	Provides means to intelligently import legacy content from Word, html, rtf or other text files (through XML and controlled by XSLT stylesheets).
Compose content	Creates content by combining new material and existing content components.
Single source	
CMS features	
Supports multiple CMS solutions	Directs access to CMS from within Content Mapper, simultaneously working with multiple different CMSs to open, save, insert and reuse content components.
Integrated personal repository	Provides an integrated, stand-alone XML-based repository for caching off-line work (this is sometimes referred to as " <i>briefcase mode</i> ") or just to keep your personal content.
Save to CMS	Save your content as XML directly into the CMS.
Open from CMS	Open XML content directly from the CMS.
Insert component from CMS	Insert and reuse content components (for example: a section or a topic) from the CMS into your current document. "References" the component to create automatically maintained virtual publications - or "Clone" to create an editable copy of existing content.
Insert picture from CMS	Inserts pictures or media-objects from the CMS repository.
Insert hyperlink to CMS object	Inserts managed hyperlinks to a CMS object.



Feature	Description
Publishing features	
Stylesheet driven publishing	Through XML and XSLT stylesheets publishes to: <ul style="list-style-type: none">• XML (other Schemas or DTDs)• HTML• PDF (without Adobe Acrobat), and/or• Word (different structures/layouts).
Previewing	Previews your selected output styles without saving – or just rely on the sample preview presented for each selectable XSLT stylesheet.
Management features	
Metadata	Makes it easy to add managed, validated metadata, based on complex value sets from external databases.
XML configuration files	Highly configurable through the following XML configuration files: <ul style="list-style-type: none">• Language• Standard tables• Wizard forms and fragments• Document types (including metadata, attributes, toolbars, reusable components, and so on.), and• Publishing options.

Creating Content

Easier than Word

The first thing to notice when starting Content Mapper is the simplified user interface: About 70-80% of all Word functions and toolbar buttons have been hidden. All the buttons and functions that are *irrelevant* for creating this type of content have been cleaned to leave an effective and uncluttered user interface. There is no point in having authors struggle with format and page layouts when the target format is XML – and publishing is controlled by stylesheets.

Depending on the document type you want to create, the *relevant* buttons and functions are right at hand – for example, you do not have to drill down through multiple layers of menus to mark an index term or to insert a picture from file.

Easy content creation

To make content creation even easier, the following configurable set of *standard content fragments* are right at hand:

- Create complex tables just by selecting from a list of standard table models that are relevant for this type of content.
- Insert standard sentences (for example: copyright statements), paragraphs or more by selecting from a pick-list of standard fragments.
- Insert complete fill-in the blanks parts of reports, and so on.

Wizards

For some document types, “Getting Started Wizards” are available to *guide* you through the creation of a complete report, ready to “fill-in the blanks”.

One example is the complete set of standard PRINCE2 project management templates available in the “Formatting Solutions” document type.

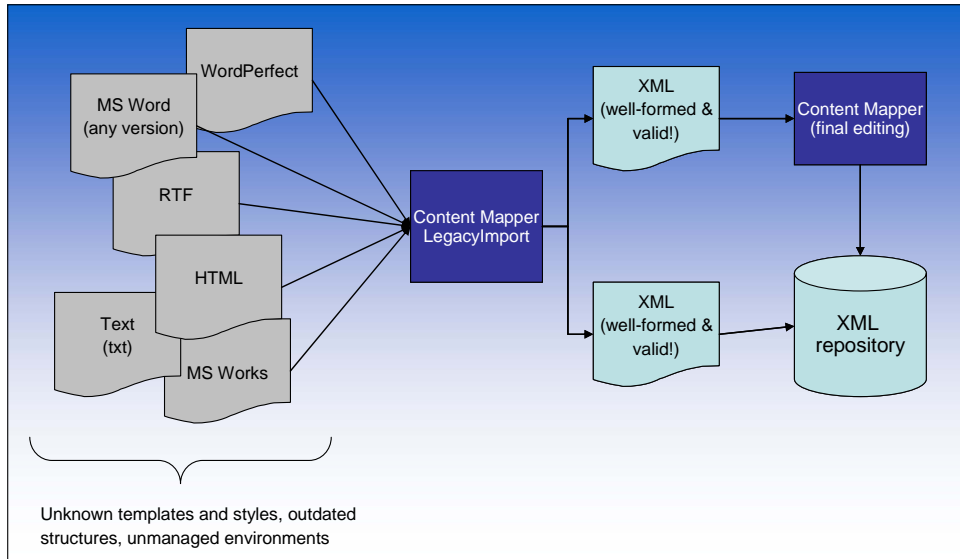
Import legacy content

Many organizations have a vast number of *legacy* documents that contain valuable information and are:

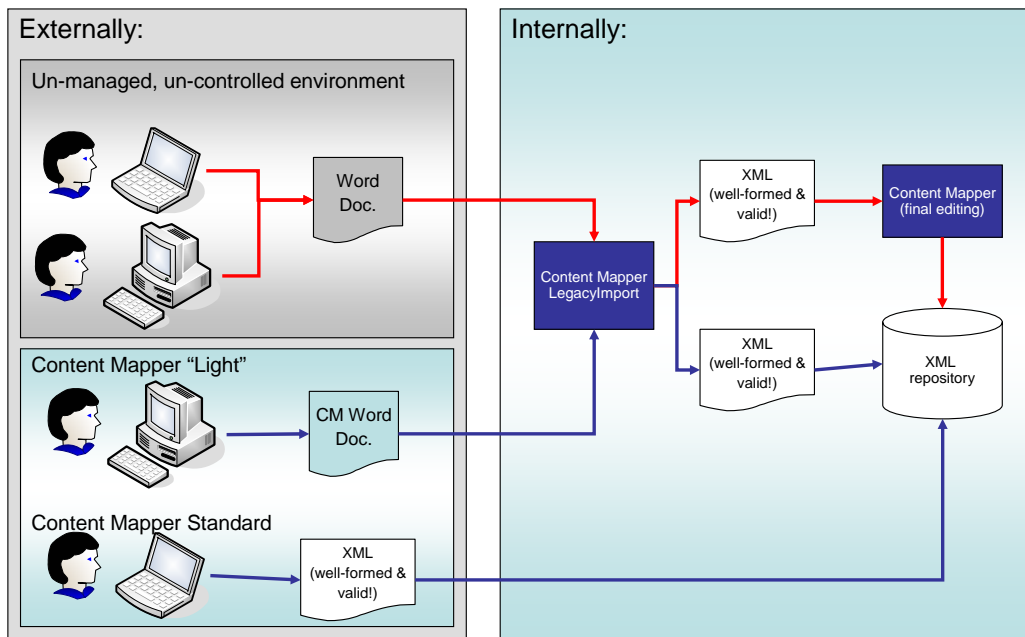
- non-XML, and
- not up to current standards in terms of file formats, styles, and so on.

Through the built-in LegacyImport function, these documents can be *intelligently* imported for reuse.

The import can either be organized as a “catch-all” import that converts every unknown document while preserving the text or as a focused import that utilizes existing structure in a particular class of legacy documents.



Furthermore, many organizations receive content from external, unmanaged sources. In many cases, this content needs restructuring and upgrading before it can be included in the corporate repository – and the legacy import function can help achieve this as well.



Working with a Content Management Solution

Using Content Mapper with a Content Management Solution

One of the unique features of Content Mapper is that it can *simultaneously* act as an effective front-end to multiple content management systems and databases such as

- Documentum
- Open Text Livelink
- Tamino XML Server
- Microsoft SQL Server
- IBM DB2
- Oracle DB

The *architecture* of the CMS interfaces makes it reasonably simple to add even more CMS systems to the list, such as

- Tridion
- Sigmalink
- Stellent
- Lotus Notes/Domino
- Microsoft SharePoint Portal Server, and
- SAP Content Portal Server.

Personal repository

Content Mapper has an integrated, XML-based *Personal Repository* that offers the same features and functions for the Content Mapper front-end as the server-based CMS-systems. The Personal Repository works out-of-the-box with Content Mapper and has no specific software requirements for the client PC and it does not require any database systems to be installed.

The Personal Repository can be used for

- storing personal content for personal projects, and
- “Caching” content for off-line work. If for example you are planning to work on content on a portable computer with no online connection to the enterprise CMS-servers, you can store the content in the personal repository before going offline and resynchronize once you get back online.

CMS toolbar

Access to the CMS-functions is provided through five toolbar buttons, supporting the following functions:



- Open XML content from a CMS
- Save XML content to a CMS
- Insert content component from a CMS
- Insert media object from CMS, and
- Insert hyperlink to CMS object.

Composing content

Content Mapper introduces a new way of creating content called *Composing*. Composing in Content Mapper means combining new content that you write with existing content components that reside in a CMS repository.

A component can be a complete document but, more importantly, it can be a *part* of an existing document, such as

- an information Block or a sub-topic
- an information Map or a topic
- a section
- a chapter, and/or
- a part.

Content Mapper offers very advanced search facilities for finding the components you need, based on metadata, attributes, structure, and content.

Creating virtual documents and virtual publications

When inserting a component, the user can choose to insert

- a reference, or
- a clone.

Inserting a reference means that although you can see and publish the content of the component in your current creation, the only thing that will get stored when you save your document back to the CMS is a *link* to the inserted component!

Inserting a clone will provide you with an editable copy of a content component and as soon as it has been inserted, the link to the original component is “broken.”

The document you have now created is in fact a *virtual document or publication* that will change automatically if any of the referenced components change.

Benefits of virtual documents

Virtual documents introduce tremendous potential benefits for corporations, such as

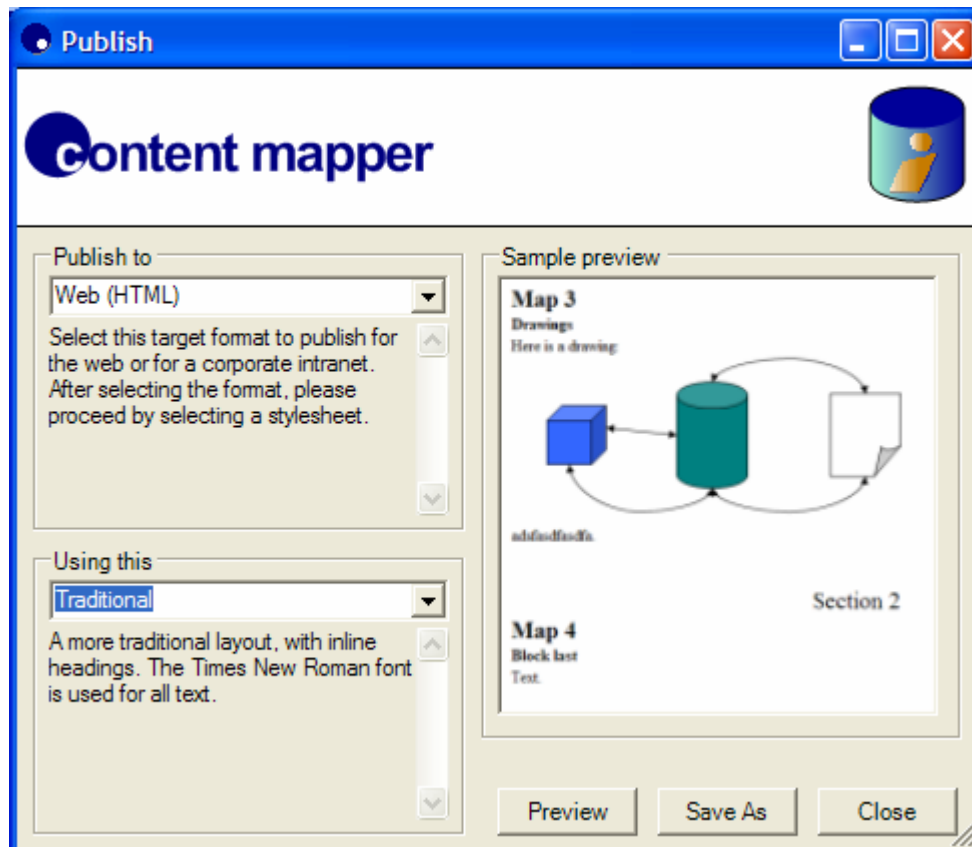
- cost savings in connection with maintenance (correct or update the information in one place and automatically update all virtual documents that reference this), and/or
- quality and consistency gains (write once and reuse in many virtual documents).

Publishing Content

Introduction

Content Mapper's publishing engine is completely XML and XSLT stylesheet driven!

By selecting different target formats and different stylesheets, you can produce as many different output formats as needed.



Publishing target formats:

The publishing engine currently supports the following output formats:

- HTML
- Word
- PDF (without any Adobe licenses)
- XML, and
- any other character-based formats.

Managing With Content Mapper

Managed metadata and attributes

Managed, validated metadata, *including inline XML attributes*, is one of the most fundamental requirements of a successful enterprise content management solution – and Content Mapper fully supports this fact by providing

- customizable metadata and attributes per document type
- drop-down lists for validation of metadata/attributes
- complex metadata structures (tree-structures)
- a required versus not-required feature, and
- metadata value-lists extracted from other databases (for example from ERP-systems!).

Customization

Almost everything in Content Mapper can be customized through a number of XML configuration files. The table below lists the configuration files and the function of each file.

Configuration file	Function
sysinfo.xml	Defines the connections to CMS's and databases.
doctypes.xml	Holds key information about each supported document type (toolbars, component granularity, metadata, legacy import stylesheets, and so on).
publishing_options.xml	Defines publishing options in terms of available target formats and stylesheets for each document type.
table_options.xml	Provides standard table models for each document type.
templates.xml	Provides standard content fragments and fill-in-the-blanks-forms for each document type.
attributes.xml	Defines available attributes for elements in each document type.
language_options.xml	Allows translation and/or customization of all fixed texts in Content Mapper's user interface

Content Mapper and Structured Content

Introduction

Effective content reuse requires structured content.

If your content does not consist of standard, well-defined, self-contained units or modules, reuse can only happen at the document level and this reduces the possibilities significantly.

No software tool or software standard can do anything about this situation on its own:

The problem is not teaching the users about XML or SGML. The real problem is teaching them how to structure information!

Yuri Rubinsky

Or, directly related to Microsoft Word.

A Key challenge will be authoring in a manner that captures structure well: ... Structure-enforcement in Word

Bill Trippe, New Millenium Publishing

Content Mapper is based on structured writing principles and fully supports leading structured writing methodologies such as

- Information Mapping, and
- DITA.

Content Mapper and Information Mapping

Content Mapper has built-in support for Information Mapping in the following two document types:

- Content Mapper Standard (Mapping without the “traditional” layout), and
- Formatting Solutions (Mapping with the well-known Formatting Solutions layout).

Content Mapper and DITA

Content Mapper offers full support for the basic DITA topic document type as well as for derived, specialized topic-classes.

Content Mapper and other “structured writing” methods

As most of the principles are the same, Content Mapper can easily host document types that have been designed around other structured writing methods.

Technology and Prerequisites

Technology

The Content Mapper application is built on top of Microsoft Office and Word. The following is a list of the tools and technologies used:

- .NET Framework
- C#.NET (pronounced C-sharp, this is a very powerful and robust programming language that combines the best elements from C++, Java, and Visual Basic)
- Visual Basic for Applications and VB.NET
- XML and XSLT (extensively used)
- XML Web Services, and
- Visual J#.NET (Java-sharp, a Microsoft implementation of Java) is used for some of the CMS-interfaces.

Application architecture

The application architecture is based on a number of very robust *engines* (for example: the XML engine and the publishing engine) and all communication between the engines and between the engines and the user interface is done in XML. This means that

- Content Mapper is highly configurable
- a web services based architecture is easy to implement, and
- it is easy to extend or expand the application.

Prerequisites

Apart from *access to working installations of the particular CMS-systems you will be interfacing to*, Content Mapper has the following prerequisites for client PC's:

- Operating system: Windows (98, 98 SE, ME, NT 4+, 2000, XP, 2003)
- Microsoft Office/Word
 - Word 2000,
 - Word XP, or
 - Word 2003, and
- Microsoft .NET Framework 1.1.

Information Mapping®

Overview

Introduction

Information Mapping, Inc. is an information services firm with over 35 years experience helping organizations leverage knowledge to improve performance.

Over the years, we have worked with hundreds of leading organizations throughout the world. The list below presents an overview of the industries on which we focus:

- Pharmaceutical/Life Sciences
- Financial Services
- Government
- High-Technology/ Telecommunications
- Process/Manufacturing, and
- Publishing.

Structured content method

We have developed a unique research-based method to help authors capture information and knowledge and develop high-quality, modular content that is easy to access, use, and reuse and that meets user needs.

Our method involves:

- Analyzing the purpose of the content and the needs of the audience
- classifying the content by its types
- organizing the content into well defined modular units, and
- selecting the most effective way to present the information.

Information Mapping offers multi-level solutions because it is an *enabling technology* for anyone who authors content and - at the same time - it is a *comprehensive information architecture* that promotes effective communication and content reuse.

Information Mapping also provides the information component of solutions to many business problems.

Content management and the Information Mapping method

The Information Mapping method provides exactly those fundamental components to a successful content management implementation that technology and systems cannot provide on their own:

- A shared content standard that can be rolled out and implemented across the organization
- a readable, relevant, modular, and searchable content, and
- the basic building blocks of an information architecture.

Effectiveness of the method

This method has been applied to solve a wide range of information-related business challenges in areas such as compliance, customer service, sales effectiveness, and operating efficiency.

Numerous independent research-studies have demonstrated the effectiveness of the method at improving information accessibility and usability and increasing comprehension and performance.

Service locations

Information Mapping, Inc. and our network of international partners and distributors offer Information Mapping® solutions in over 30 countries.

Our worldwide headquarters are in Waltham, MA with European/Africa/Mid-East headquarters located in Denmark.

For More Information

Contact information

Canadian Headquarters

Communicare, Inc.
35 Ripley Avenue, Suite 102
Toronto, ON M6S 3PR
Canada
TEL: (416) 769-0846 or (888) 463-6627
FAX: (416) 769-7790
WEB: www.communicare.com

Worldwide headquarters

Information Mapping, Inc
271 Waverley Oaks Road
Waltham, MA 02452
USA
TEL: (800) 463-6627
FAX: (781) 472-3005
WEB: www.infomap.com

Europe – Middle East – Africa

Information Mapping Europe
Kr. Kielbergs Vej 3
8660 Skanderborg
Denmark
TEL: +45-8651-1655
FAX: +45-8651-1653
WEB: www.imap.dk