

ECM – Ruler of Information

Enterprise Content Management, eBusiness, eRP & eEverything

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P R O J E C T C O N S U L T

Unternehmensberatung Dr. Ulrich Kampffmeyer GmbH

Hamburg 2001



ECM – Ruler of Information Enterprise Content Management

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Abstract

Every year, new buzzwords emerge in the IT industry. Some last only a year, while others mark new trends and emerging products that sustainably transform the IT landscape. Enterprise Content Management (ECM) belongs to the latter category. In 1999, the term appeared with increasing frequency in publications. Two primary sources can be identified for this development: AIIM International, the international umbrella organization for the document management industry, repositioned itself, and IBM rebranded its existing Enterprise Document Management product line as Enterprise Content Management. By contrast, the term "Content Management" had already been adopted by numerous companies in the internet domain. Today, users face the challenge of determining which technological solutions and functionalities should actually be attributed to Content Management Systems (CMS).

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Content Management is Not Equal to Content Management

Tracing the roots of the term "Content Management" reveals that the concept of "content" itself is not precisely definable. It is not merely a redefinition of the traditional term "document." In principle, content encompasses all informational data maintained within systems. Even the conventional distinction between unstructured and semi-structured data no longer applies. Today, content is managed in databases, and the boundary between structured data records and unstructured content has long since blurred.

Nevertheless, certain characteristics distinguish content from other types of data. Content always consists of the actual information payload paired with associated metadata. This metadata does not necessarily need to be visible to the user; primarily, it serves the administration and control of the content itself. A key component of Content Management



Systems (CMS) is therefore the separation of layout and structural information from the core content. XML is gaining increasing importance for this task, although the use of XML for interfaces and document formats cannot yet be regarded as a foundational characteristic.

Consequently, any discussion of Content Management must distinguish between the general category of Content Management Systems (CMS) and two specific manifestations: Web Content Management Systems (WCMS) and Enterprise Content Management Systems (ECMS). These domains originate from different backgrounds, fulfill distinct functions, and pursue very different objectives. Currently, three main streams of terminology usage regarding "Content Management" can be identified.

Content Management in the Narrower Sense

The first stream can be designated as Content Management in the narrower sense. Here, the primary focus is truly on the content itself—digital books, digital videos, and digital music that require management, monetization, protection, and distribution. The objective of publishers and other content providers is the secure commercialization of content tailored to the specific requirements of target audiences.

Consequently, specialized components play a crucial role in this domain, including:

- Multimedia Clearing Rights Systems for legally compliant copyright usage,
- Content Syndication for aggregating content,
- eProcurement for usage billing,
- Telecommunication Integration for WAP and home internet televisions,
- eBooks, digital watermarks, and copy-protection mechanisms, as well as
- rapid, compressed provisioning across diverse networks.

Company names associated with this content-centric variant of Content Management include Bertelsmann, Disney, EMI, Sony, and others. Technical solutions are of secondary importance here; the primary focus lies on the commercial exploitation of the content itself.

Web Content Management

The second manifestation is Content Management in the context of Web Content Management (WCM). Initially, this approach aimed simply to overcome the inadequate capabilities of HTML in designing websites by employing professional tools.

The core focus of this product category comprises:

- Website versioning,
- Integration of secured intranet zones,
- eCommerce with transaction capabilities,
- Dynamic page population from databases, and
- Efficient maintenance tools supporting the editorial process of content creation and publication.

WCM products differ from traditional document management solutions through their explicit focus on internet formats such as HTML, XML, GIF, and others. Over time, the boundaries



between website design, website content management, database-driven information delivery, personalization, and automated content publishing have largely dissolved. Web Content Management is evolving into the foundational technology for portals, frequently reinventing necessary document-oriented components in the process.

Web Content Management solutions currently encompass four primary categories:

1. WCM Authoring: These solutions primarily support website design and the editorial workflow process.
2. WCM Repository: This category focuses on the internal management of provided information and its deployment within a runtime environment. A key feature is the aggregation of content from various source systems.
3. WCM Publication: In addition to traditional pull-based information delivery, these solutions offer push principles for targeted information distribution.
4. WCM eBusiness: Beyond mere preparation, management, and distribution of content, these integrated systems provide advanced functionalities that enable direct interaction and personalized utilization. Such solutions are typically built upon complex portal systems.

Enterprise Content Management

The third stream, Enterprise Content Management (ECM), may appear at first glance to be merely a transformation of existing technologies—or even just a marketing narrative—following the maxim: *"From archive server to document server to content server to portal server to xyz..."*

Drawing from document-related technologies, the functionalities of traditional archive, document management, and workflow solutions are adapted to meet the demands of content management, or new product suites are generated that integrate web-based components with legacy products. In this context, Content Management is largely reframed as Enterprise Content Management (ECM). This shift signifies a transition away from merely web-oriented external presentation toward unlocking all structured and unstructured information across the enterprise.

Consequently, the focus of most solutions remains oriented toward intranets or, more broadly, Business-to-Employee (B2E) environments. However, this approach also introduces new components that meaningfully expand content management capabilities—such as automatic classification, profiling, transactional archiving, and others.

Thus, the term "Enterprise Content Management" denotes solutions that leverage internet technologies while focusing primarily on in-house information delivery. The solution spectrum focuses predominantly on enterprise portals for Business-to-Business (B2B) extranets and B2E intranets. The majority of legacy document management, groupware, and workflow vendors who have not yet fully re-architected their systems and merely place a web server in front of their applications also fall into this category.



The primary application areas include:

- ECM Portals: Browser-based, personalized interfaces providing access to information from diverse internal and external sources, designed to replace legacy host and/or client user interfaces.
- ECM Data/Document Warehouses: Applets, middleware, and metadata databases for consolidating and aggregating unstructured information from various enterprise sources.
- ECM Workflows: Process-driven aggregation and utilization of information.
- ECM Knowledge Management: Preparation of structured and unstructured information, automated classification, and Computer-Based Training (CBT).

Three Core Concepts Shaping Enterprise Content Management

Examining the definitions of the various application areas of ECM and WCM makes it clear that the current distinctions between system categories cannot be sustained indefinitely. This applies equally to products, technical platforms, and usage models. Capabilities utilized exclusively as in-house solutions today will be made available to partners or customers tomorrow. The content and structures of a web portal currently focused on external presentation will soon serve as the platform for internal information provisioning.

Consequently, the value proposition of an Enterprise Content Management system distills into three core concepts that differentiate such solutions from Web Content Management:

Core Concept 1: ECM as Integrative Middleware

ECM aims to overcome the restrictions of previous vertical applications and "island architectures." In principle, users should be unaware that they are working with a specific ECM solution. For the new paradigm of "web-based IT"—which has established itself as a third platform alongside traditional host and client/server systems—ECM provides the necessary infrastructure. Consequently, Enterprise Application Integration (EAI) plays a critical role in the deployment and utilization of ECM.

Core Concept 2: ECM Components as Independent Services

ECM is designed to manage information independently of its source and intended use. Functionality is provided as a service that can be consumed by a wide variety of applications. The advantage of a service-oriented architecture is that each function is provided by a single, generalized service, thereby eliminating redundant, maintenance-intensive, and costly parallel implementations of identical functions.

Core Concept 3: ECM as a Unified Repository for All Information Types

ECM serves as a Content Warehouse (spanning both Data Warehouses and Document Warehouses), consolidating all enterprise information within a uniformly structured repository. This overcomes costly redundancies and the associated challenges of information consistency. All applications deliver their content to a unified repository, which in turn supplies all applications with the information they require.

By integrating into a multi-tier model, ECM encompasses all Document-Related Technologies (DRT) for handling, unlocking, and managing weakly structured data. Enterprise Content Management thus constitutes one of the essential foundational components of the overarching eBusiness application field. Furthermore, ECM claims to manage all information handled by WCM systems and, as a universal repository, to fulfill



compliance and archiving requirements. This aspiration ensures that ECM will not merely be a short-lived buzzword.

Information within enterprise systems constitutes genuine corporate value, and organizations are becoming increasingly dependent on its availability. Scanning paper is no longer the primary information bottleneck. Instead, inboxes are overwhelmed by emails, electronic documents in diverse versions populate file systems, operational systems generate ever-increasing volumes of data and analytics, and identical information is prepared in numerous distinct renditions for various use cases.

The challenges of efficient information organization now surpass the well-known problems of paper archives and traditional paper-based workflow processing. Rapid IT evolution—characterized by a lack of standards, media disruptions, and institutional discontinuity—contributes significantly to these issues. Reliable ECM solutions capable of providing information independently of specific applications will therefore form the backbone of any modern IT architecture in the future. Long-term information availability, coupled with database indexing, search engines, and classification tools, is what ultimately renders content actionable and useful.

The Market for Enterprise Content Management Solutions

The ECM market attracts a wide array of participants—ranging from major platform providers such as Microsoft, Lotus, and SAP, through the entire spectrum of Document-Related Technology (DRT) vendors, to small web-authoring tool garage start-ups. The global definition of Enterprise Content Management suggests a colossal market that does not exist in its totality; rather, it breaks down into numerous distinct market facets.

Consequently, the current AIIM International study on the ECM market, prepared by the Gartner Group, struggles significantly with market delineation. The study was based on the following foundational definition:

“Enterprise Content Management: The technologies used to create, capture, customize, deliver, and manage enterprise content to support business processes.”

The Gartner Group explicitly notes that despite this rather concrete definition, participating analysts and stakeholders held slightly divergent understandings of the terms. However, it became evident that traditional boundaries between enterprise applications and the evaluated document technologies are gradually softening and ultimately blurring entirely.

For the deployment of technologies identified by Gartner as core components of ECM, the following adoption metrics were determined:

- Workflow / Process Management
- Data Warehousing/Mining
- Content Management
- Electronic Document Imaging
- Collaborative Tools

(Note: Implementation status of Enterprise Content Management technologies worldwide according to Gartner data below).



A distinct weighting emerges regarding the deployment of Web Content Management solutions:

- eProcurement
- Extranet
- Marketplaces

These figures demonstrate that while traditional ECM components—such as archiving, workflow, and document management—are already widely adopted, the greatest need for catch-up investment lies within the web, intranet, and portal domains. However, because ECM is increasingly understood as a foundational infrastructure integrated across all application types, office communication products, collaboration and groupware suites, and even operating systems and databases, the Enterprise Content Management industry faces challenges in maintaining a distinct profile.

ECM Technology	installed	planned	probably	not planned	don't know
Workflow / Process Management	36%	27%	10%	24%	2%
Data Warehousing/Mining	37%	21%	13%	27%	2%
Content Management	31%	21%	12%	32%	5%
Electronic Document Imaging	58%	17%	9%	15%	1%
Collobarative Tools	45%	17%	10%	25%	3%

Implementation Status of Enterprise Content Management Technologies Worldwide (Source: Gartner)

For the deployment of Web Content Management solutions, a differently weighted picture emerges:

WCM Techno-log	active	planned	in consideration	not involved	no answer	don't know
B2B	30%	30%	14%	24%	1%	2%
eProcurement	35%	25%	13%	23%	0%	3%
Extranet	25%	22%	11%	34%	1%	6%
Mrket places	17%	9%	13%	55%	1%	5%
B2C	25%	22%	11%	34%	1%	6%
B2E	30%	15%	10%	41%	0%	3%

The figures clearly show that traditional ECM components—such as archiving, workflow, and document management—are already widely adopted, whereas the greatest backlog and demand for catch-up investment lie within the web, intranet, and portal domains. However, because ECM is increasingly perceived as a foundational infrastructure integrated into all forms of applications, office communication products, collaboration and groupware suites, and now even operating systems and databases, the Enterprise Content Management industry struggles to maintain an independent profile.



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Author Profile

Dr. Ulrich Kampffmeyer (born 1952) is Managing Director of PROJECT CONSULT Unternehmensberatung GmbH, one of Germany's leading product- and vendor-neutral consulting firms specializing in document management, electronic archiving, office automation, groupware, intranets, and workflows. He is the founder and Managing Partner of PROJECT CONSULT International Ltd., London.

He has engineered the system design for several document management products and advised numerous users, manufacturers, and system integrators on the planning, organization, and implementation of such systems. His clientele includes prominent German and international organizations, corporate groups, and enterprises.



Dr. Kampffmeyer is a recognized conference chair, speaker, and moderator on topics related to the document management environment. His speaking engagements span events such as AIIM, AWV, datakontext, dc, DMS, DLM-Forum, Documation, EUROFORUM, IMC, IIR EDOK, IIR Interflow, Online, VOI, and others. He is among the few German consultants and analysts who enjoy international acclaim, as evidenced by numerous invitations to moderate, deliver keynotes, and speak abroad. His keynote presentations—including *"Document Management as IT-Infrastructure"* (1995), *"The Future of Document Management"* (1997), *"Paradigm Shifts in Document Management"* (1998), *"The Electronic Documents Management Market in Europe: Technologies and Solutions"* (1999), *"Market Transitions: DRT Document Related Technologies"* (1999), and *"Dokumenten-Management im Wandel – und wo bleibt der Mensch?"* (1999)—are regarded as pioneering contributions to the entire DRT industry.

Dr. Kampffmeyer serves as a Director of AIIM Europe (Association for Information and Image Management International). As a member of the Executive Committee and Vice Chair of the Board of Directors of AIIM, he is recognized as one of the leading figures in the European industry. For his

Client: Computerwoche CW- Extra
Theme: Enterprise Content-Management
File: Ulrich Kampffmeyer ECM - Ruler of
Information Computerwoche extra
20011010 en.doc

Project: CW – Extra
Topic: ECM – Ruler of Information
Date: 10.10.2001

Author: Kff
Status: Fertig
Version: 1.1 English



successful contributions to the document management sector, he received the “Award of Excellence” (1992), the “Fellow of IMC” award (1994), and the “Award of Merit” (1997) from the IMC, as well as the “Fellow of AIIM” award (1999) and the “Master of Information Technology” distinction (2000) from AIIM International. He is a member of the advisory board for the European edition of the AIIM journal “e-doc”.

As the long-standing Chairman of VOI (Verband Optische Informationssysteme e.V.) from 1991 to 1998, he possesses extensive market expertise in document management, workflow, groupware, electronic archiving, intranets, digital signatures, knowledge management, and digital optical storage. According to the magazine *Computerwoche*, he is considered the mentor of the DRT industry in Germany.

Having written for journals such as Info21, DoQ, Document World, e-doc, Office Management, Bit, Document Manager, Computerwoche, Markt & Technik, Information Week, Password, ComputerZeitung, Management Berater, INFOdoc, and numerous other German and international publications, he has published over 230 articles on document management topics over the past years. He writes regular columns for trade journals, edits the PROJECT CONSULT Newsletter, and his publications are frequently referenced across websites. He is the author of the book “*Grundlagen und Zukunft des Dokumenten-Managements*” and co-author of the German codes of practice “*Grundsätze der elektronischen Archivierung*” and “*Grundsätze der Verfahrensdokumentation nach GoBS*”.

Dr. Kampffmeyer is actively engaged in standardization bodies such as the AIIM Association for Information and Image Management International, WfMC Workflow Management Coalition, DMA Document Management Alliance, ODMA Open Document Management API, and others. He is a member of the European Commission’s DLM Forum and contributes to European codes of practice and legal frameworks regarding the use of document management technologies.