

# Taming the **Information Explosion** with **Enterprise Content Management**

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Information is among every organization's most valuable business assets, regardless of its size or business. As the fuel that powers their unique business processes – from product development, to sales and marketing, product/service delivery, and business management – information must be captured, processed, accessed, measured, integrated, and stored efficiently and effectively.

For most, this is an ongoing challenge; implementing *enterprise content management* (ECM), which is broadly defined as the strategies, tools, processes, and skills needed to manage all information assets over their life cycle, can be a good solution.

Implementing an *ECM system*, which is a single, decentralized system that can serve multiple systems and business areas, offers robust functionality for systematically controlling and analyzing an organization's increasingly complex and voluminous information, whether it is in a structured format (e.g., in databases), unstructured format (e.g., e-mail, word processed, spreadsheet, image, audio, video), or hard copy.

## ECM Functionalities

As shown in Figure 1, an ECM solution typically consists of four essential functionalities:

1) *User interface* – The user interface brings information (digital or non-digital) into an ECM system. This is accomplished, for example, by scanning hard-copy documents to convert them into electronic images, by uploading a born-digital document such as a Google doc word processing file, or being fed from an enterprise resource planning (ERP) system the organization uses to collect information from many business activities.

2) *Information governance* – This key functionality is what separates ECM solutions from other digital archival systems. For example, the information governance functionality assigns incoming information-specific

retention rules that ensure it is kept for the required time and automatically deleted after the retention requirement is fulfilled.

3) *Features/Attributes* – An ECM system is equipped with features meant to achieve specific business purposes. For example:

- *Data archival* provides a systematic approach for archiving and retrieving information using select keywords.
- *Intelligent data capture* con-

for connecting different data streams.

- *Information disposal* affixes a post-dated time to information that will be automatically applied to delete it in compliance with its retention requirements.

4) *Repository* – ECM systems provide a secure approach to storing information for on-demand access. A variety of information storage protocols allow information to be stored on

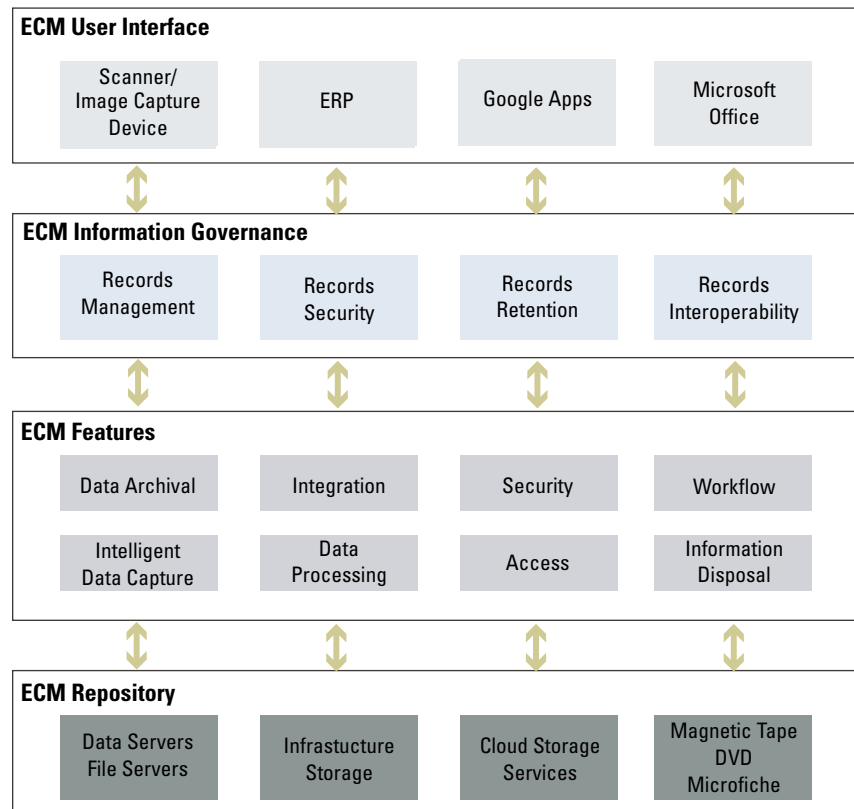


Figure 1: Typical ECM Architecture

verts image-based information to a computer readable format by using optical character recognition.

- *Workflow* provides an automated process for information flowing through different stages; this is based on a pre-configured logic.
- *Integration/Data processing* is a built-in information management functionality

arrayed disks to allow for enhanced data security. The repositories can be onsite or in the cloud.

## ECM Implementation Goals

The main goal of an ECM implementation is to provide transparent content sharing by making different and incongruent applications (for example, web content management and records management) interoperable.

With a complete suite of product

options, an ECM system can manage and integrate data systems, automate document handling, reduce workload by streamlining tasks, provide traceability and version control, reduce duplication, and improve search and retrieval for information across platforms. This reduces costs and the burden on IT departments for information storage and retrieval.

Therefore, transitioning to an ECM can help an organization increase its decision-making capabilities, improve customer service, enhance employee creativity and productivity, facilitate compliance with regulations, eliminate unneeded information on servers and in filing cabinets, implement business continuity measures, and, ultimately, enhance its reputation in the eyes of its stakeholders.

## ECM Implementation Stages

As shown in Figure 2 and described below, there are four stages of an ECM implementation plan: 1) Roadmap Strategy; 2) Development; 3) Deployment; and 4) Support.

### Stage 1: Roadmap Strategy

The primary goal of ECM implementation roadmap strategy is to establish the information governance for the life cycle of the information based on establishing an amalgamated, interoperable space that will reduce the content classification burden for the end user. A well-developed strategy:

- Encompasses the majority of records, including paper and electronic, unstructured and structured
- Meets the needs of a wide variety of stakeholders
- Enables the organization to respond to legal discovery
- Automates business processes, removing the inconsistency of manual processes
- Brings the organization up to date with respect to technology

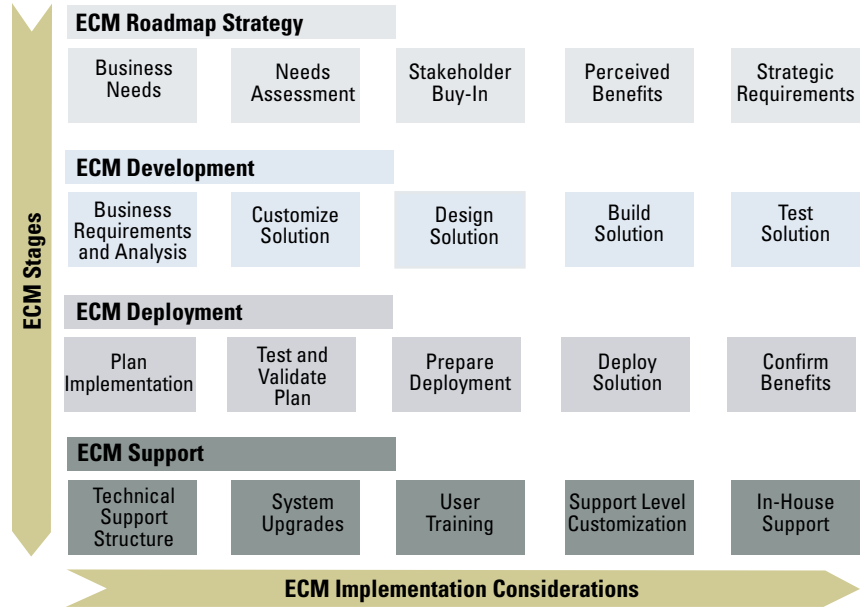


Figure 2: ECM Implementation Stages

Follow these steps to develop the roadmap strategy.

**Conduct a needs assessment.** The “Forrester Wave™: Enterprise Content Management, Q3 2013” report by Alan Weintraub, Craig Le Clair, and Cheryl McKinnon said ECM requirements are driven by user productivity goals and compliance needs. This means that identifying the best ECM solution depends on knowing how the organization intends to use the information that will be stored in it.

An organization’s business needs are inherent and specific to the nature of its business and culture, so the needs assessment should sufficiently cover:

- Existing technology infrastructure/environment, readiness
- Change management
- Immediate and long-term training
- Information security and alignment with regulatory compliance
- Taxonomy and metadata requirements for data classification and retrieval

- Records management and information governance
- Storage capacity – on premises and in the cloud
- Disaster recovery strategy

**Get stakeholder buy-in.** An information governance team comprising representatives from all stakeholder groups should act as a catalyst to enforce consistent governing policies, such as for the adoption of an organization file plan or classification scheme; use of the taxonomy; and application of retention, disposal, and archival rules.

**Identify the perceived benefits.** Identification of tactical benefits may include improving internal and external collaboration, enhancing content quality and maintaining consistency, standardizing workflows, producing organizational metadata attached to content objects, and provisioning for regulatory requirements.

**Determine strategic requirements.** These requirements can be broadly grouped under three categories:

1. Organizational Requirements:
  - Information governance
  - Management of official records

Stress Test Type	Process
<b>Volume handling</b>	Assume 50% of employees log on to the ECM, handling at least 60% of the total data/information volume. Repeat for two different scenarios.
<b>Processing power</b>	<ul style="list-style-type: none"> <li>• Based on information load, write at least 250 scanned pages per minute</li> <li>• Response to user input – retrieval rate</li> <li>• Recover from server failure within 10 minutes</li> </ul>
<b>Test Configuration</b>	<ul style="list-style-type: none"> <li>• Multiple physical servers, hosted on VMWare and running VMWare for failover</li> <li>• Dynamic reallocation of computing resources across cluster</li> </ul>

Figure 3: Industry Standards for Stress Testing Key ECM Functionalities

- Regulatory compliance
  - Knowledge of industry best practices
2. Access and Collaboration Requirements
    - User-easy access, easy retrieval of information
    - Information sharing
    - Defined access rights & privileges based on roles
    - Automation, workflow
  3. Functional Requirements:
    - Based on information/records governance and access
    - Information protection from loss and retained per retention
    - External investigation and obligation may be met easily
    - Reduction in information overload

A well-planned roadmap strategy will help ensure user adoption.

#### Stage 2: ECM Development

ECM solutions are not plug-and-play and can be customized based on application data and content. Every business process is different with varying inflow of information originating internally and externally. Although ECM solutions for specific business types, such as health care, finance, education, insurance, and research and development, provide some basic functionality that is specific to those industries, a certain degree of product customization is necessary.

Numerous ECM providers offer a suite of solutions suitable for organiza-

tions of all sizes and with varied types and volumes of information. The Information Systems Audit & Control Association's COBIT 5 (Control Objectives for Information and Related Technologies) framework – which is globally accepted and provides an end-to-end business view of the governance of enterprise IT – recommends a model for selecting ECM solutions based on the organization's nature of business, size, risk tolerance, resources available, program governance, ease of standardization across the enterprise, and opportunity for continuous review of quality improvements.

The likelihood of ECM success depends heavily on the outcome of connected workflow execution order and process schedules. The following may be considered in designing the ECM to:

- Route documents in a standard, controlled, and prompt manner
- Accommodate exceptions by assigning specific users with rights to add or exempt stages on an *ad hoc* basis
- Forward documents without delay to each successive phase
- Prioritize documents in each queue. If there is no priority assigned, the documents are sorted by the date and time they enter the life cycle.
- Monitor and measure the time to complete a process
- Audit queues for periodic review for quality assurance

- Add or adjust processes at the document, process, group, or enterprise level by specified users or administrators
- Enable point-and-click configuration to customize both the routing and the user interface without programming

#### Stage 3: ECM Deployment

The detailed deployment and validation plan is critical to achieving timely implementation of the ECM. The deployment should be piloted in a test environment to discover any process-related bottlenecks before ECM is migrated to the production environment. Figure 3 provides industry standards for stress testing key functionalities, such as large data handling or varied types of data inflow, for understanding any missing feature during the course of deployment.

#### Stage 4: ECM Support

Training personnel and keeping pace with upgrades for the deployed ECM solution should be part of the ECM vendor's product support. Some ECM providers require power users who serve in an ECM administrative capacity to get certified against standardized testing.

The ECM implementation team must develop training methods that are carefully customized for user preference (e.g., video vs. PowerPoint presentation) to ensure that they will engage personnel through all stages

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## Keys to a Successful ECM Implementation

1. Identify realistic functional needs and configure the ECM solution to meet them – not the other way around. The functional needs should drive the technology; the technology should not drive the implementation.
  2. Include all stakeholders at the initiation of the process, including top-level executives, and get their buy-in.
  3. Analyze the content before deciding on an ECM solution.
  4. Delineate security access controls, roles, and responsibilities.
  5. Document access and approval procedures.
  6. Define the quantitative expected outcomes for the organization.
  7. Be prepared to accept the fact that launching an ECM is just the beginning of a long process that involves training, routine upgrades, and certifications.
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## ECM System Components and Major Features

The major components of an ECM system, according to Gartner's September 2014 ECM Magic Quadrant, and their major features are summarized below:

- Document management – has check-in/out capabilities, version control, security, library services
  - Web content management – controls the website content through management tools; includes content creation and deployment functions
  - Records management – allows long-term retention of content through automation and policies to ensure legal/regulatory/industry compliance
  - Image-processing applications – captures, transforms, and manages images of paper documents
  - Social content – allows document sharing and collaboration support for project teams and knowledge management use
  - Content workflow – supports business processes, routes content, assigns tasks, creates audit trails
  - Extended components – can include mobile applications, digital asset management, search, analytics, and packaged integration capabilities
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of testing, upgrading, and extending ECM functionalities.

## Barriers to Success

AN ECM implementation is often hindered by incompatibility between the ECM platform and the existing technology environment. The ECM solution must be compatible with the existing software applications in use for routine job functions, such as editing documents, storing data files, searching, and electronic record fabrication and preservations.

In other cases, projects fail dismally for lack of:

- A proper initial needs assessment
- A broad stakeholder pool
- A good deployment plan
- Executive support for the project

See the sidebar “Keys to a Successful ECM Implementation” for strategies to avoid these barriers.

## Keys to Success

The success of an ECM implementation lies in articulating the perceived benefits and potential of system efficiency. To achieve these benefits, organizations must involve all stakeholders in selecting the ECM product and vendor, developing the implementation plan, deploying the plan, and training users. Mapping the organization's information management needs, culture, and business processes and threading those into an ECM implementation roadmap strategy will enable organizations to weather the big data and be in compliance.

A small gap between perceived benefits and user adoption is a clear indication of a well-planned roadmap.

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