



A 15 Minute Guide to **Enterprise Content Management**



Foreword

As a professional knowledge worker, you know how valuable your time is. You need to distill concepts, evaluate options and execute complex transactions on a daily basis. So you need as much information as you can process as quickly as possible to be proficient. We understand that need and aim to communicate concepts and ideas as clearly as possible to aid your understanding of a particular subject. This 15-minute guide is the second in a series that began with the “15-Minute Guide to Enterprise Content Management” (which can be downloaded from www.EMC.com/documentum). The series is aptly named. In no more than 15 minutes we hope to provide a starting point for learning about a particular subject, and to make it an easy and entertaining read. This particular guide focuses on the importance of Information Lifecycle Management (ILM) for enterprise content management users. We aim to identify the key drivers for ILM, why organizations need to adopt an ILM strategy and the benefits of ILM for enterprise content management users.

So what can we achieve in just 15 minutes?

It is interesting to note that Percy Shelley, the poet, apparently wrote his celebrated poem, “Ozymandias,” in 15 minutes in a timed pub poetry competition (see <http://www.poets.org/poems>). You can be assured it took a lot longer than 15 minutes to create the content in this guide—but you should need little more than 15 minutes to read it.

We hope that the long-term effect, however, will be measured in months and years and, of course, in thousands of dollars saved.

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The what

What is enterprise content management?

Enterprise content management (ECM) is the category of software that helps you manage all of the unstructured information—or content—in your enterprise. This information exists in many digital forms: text documents, engineering drawings, XML, still images, audio and video files, and many other file types and formats. ECM helps you create content with common desktop applications and easy-to-use content authoring templates. It can also capture and incorporate existing content from a variety of sources.

ECM manages this content and the content from other enterprise applications such as enterprise resource planning (ERP), customer relationship management (CRM), and enterprise portals. It adds intelligence by creating categorization schema, metadata, and tags that make search and retrieval faster and more efficient. ECM also manages the review, revision, and approval process for any piece of content according to user-defined business rules—a capability known as workflow and lifecycle management.

Truly robust solutions allow you to manage relationships between pieces of content, allowing one piece of content to have multiple identities depending on how it is used in various contexts and renditions. This is the “object model” of content management. Combined with intelligent tagging of content, the object model supports efficient repurposing of information.

ECM also controls the publishing of content through multiple channels. For example, a single piece of content may be published simultaneously to a Web site, broadcasted as a fax, printed as a text document, and sent to a handheld wireless device.

ECM is generally considered to be an amalgamation of a number of distinct but interrelated applications: enterprise document management (EDM), Web content management (WCM), digital asset management (DAM), enterprise records management (ERM), business process management (BPM), enterprise content integration (ECI), and collaborative content management (CCM). BPM goes beyond workflow and lifecycle management to define, model, and manage all kinds of business processes consistently and reliably across multiple organizations, systems, and applications. ECI technology, a subset of ECM, enables the integration of all content sources inside and outside the enterprise regardless of content location or how content is accessed. Collaboration technology, another subset of ECM, is becoming increasingly important in organizations. Working in harmony with BPM, collaboration allows the participants in a business process to come together to optimize the process to mutual benefit. This brings partners, suppliers, customers, and agencies together in a controlled way and manages and leverages collaborative content such as discussion threads, voting results, and documents.

All of this functionality has one purpose—to leverage enterprise knowledge assets for competitive advantage.

The why

Why should I care about ECM?

It is estimated that unstructured content is growing at anywhere between 65 percent and 200 percent per annum depending on industry sector. Research sponsored by EMC and others concluded that nearly 800 MB of data or content is produced per person each year.

Organizations are drowning under a sea of content. They are unable to classify it effectively. They don't know whether a piece of content has a high value or whether it is just clogging up the arteries of their file systems. They are unable to say whether it is the latest version or not. They don't know who controls or has access to it. They are unable to audit the lifecycle of a piece of content and tie it into a business process. The same piece of content might be used in several contexts and there is no way to assess the impact of changing it. There might be important but inaccessible content that is resident in repositories or file systems outside of organizational control. Many organizations are not able to use and reuse important content effectively regardless of its origin or ultimate destination.

Content promoted to a website and displayed to a customer might well be inconsistent with content that customer finds in a brochure, discusses with the call center, or might find in a local branch. ECM provides an infrastructure that enables you to address these issues and get your content under control.

More importantly, at a business level, ECM assists you in meeting some of the challenges you face as a commercial or a public sector organization. The world is becoming more regulated. Whatever your industry sector, you know that regulations are becoming more stringent. Compliance demands clearly vary by sector: for the life sciences, 21CFR Part 11 is a key requirement; in financial services, Basel II, SEC 19B-4, SEC 17A-3 and 4; in oil and gas it is OSHA and the EPA; in government, data protection and the Freedom of Information Act (FOIA); and so on. However across all these regulations, whether legally enforced or best industry practice, the need to provide process around content and documents is paramount. This drives the need to store specific content that is either valuable, admissible, or both, in secure, immutable storage environments for a defined period of time. Document management, along with its cousin records management, provides the structure to define policies associated with content. By combining them with a fixed-content addressable storage system like EMC Centera, those policies can be enforced, guaranteeing immutability and authenticity.

Your costs are spiraling. You are supporting content management systems across your organization that are in departmental silos and are restricted to certain geographies. They are unable to share content. Content is being duplicated, triplicated, or worse. You need digital content, like graphics, in your Web pages; you'd like to be able to archive your collaborative content; your e-mail content is exploding and you want to categorize it, archiving the essential and disposing of the rest. The solution to these and many other problems is to implement an ECM system.

But you don't want to do all this just to save costs and to be compliant with your regulators, do you? Where's the fun in that? You want your systems to make a difference—to enhance the rate of innovation, accelerate the new product development (NPD) and introduction processes (NPI), and help you access new channels to market, and so on.

ECM systems allow you to collaborate with your suppliers, partners, and customers to accelerate the NPD and NPI processes; manage your brand assets effectively; and increase your sales channels effectiveness with timely and relevant content dissemination to the field. It helps you cut costs from your bottom line, add to your top line, and keep you compliant.

The when

What's the urgency? Should I be doing something right now?

It should be evident that getting your content under control is a good thing. But, how important is this in relation to all your other IT investments? Should you be prioritizing ECM above other investments? Evidence shows us that content management, in one form or another, is being seen as a strategic area of investment. In the Morgan Stanley CIO Survey, CIOs and IT directors consistently rank document management software among the top spending priorities. The major components of ECM have emerged from “niche” products to become mainstream. The large application, infrastructure, and storage vendors have all turned their attention to this software category. This is a sure sign of its importance to business. So, the question is “what is the urgency?” Why should I be investing in ECM right now? Shouldn't I wait for the market to mature and for the large vendors to deliver their solutions for managing unstructured content?

The simple answer is no. There are some overriding imperatives that are driving the adoption of content management technologies. These can be neatly encapsulated as the three “Cs”: compliance, consolidation, and collaboration. Each has a different degree of urgency and a different focus.

As we outlined above, compliance is an important driver. It is the CEO and CFO who have most to lose by not ensuring their organizations are compliant. Both face litigation if they are not complying with regulations. It is the CFO's responsibility and for that person there is a great degree of urgency in finding an effective compliance solution. In some sectors, there are impending deadlines to meet. In the public sector, most governments in Europe are mandating that their departments and local authorities go online—not just in publishing information to citizens but also being able to interact proactively with them and then carry out transactions. In the U.S., the Sarbanes-Oxley Act places significant demands on CFOs and CEOs for corporate governance. In the financial services sector, the Basel II Capital Accord, which focuses on risk regulation, has a compliance target of 2005/2006. SEC regulations around archiving business communications have been around since the 1930s but now extend to e-mail and immutable storage media. Content management is critical to helping organizations achieve compliance.

Consolidation is a second major driver. This tends to be the preserve of the CIO. It is the CIO who is concerned with delivering high service at the lowest possible price point through the exploitation of IT. Investment in IT is at an all-time high and shows no signs of diminishing. However, expectations have risen commensurately. The CIO needs to reduce costs as much as possible and is looking for ways to do this. ECM systems allow the CIO to achieve this by lowering overall costs. Rather than running separate systems to manage documents, rich media, digital content, collaborative content, and records, the opportunity afforded by ECM is to manage all these in a standard repository and provide a set of content, process, and repository management services that are applicable across multiple content types. Thus a CIO can implement a standards-based, single infrastructure for content rather than supporting multiple systems. The economies of scale prevail and overall total costs can be reduced. In addition, ECM systems are becoming more scalable than ever before. Repositories are scaling to over a billion objects with subsecond response times. This means they can feasibly challenge the mainframe as an operating environment for content-centric transactions such as mortgage applications, insurance claims, or loans processing.

Finally, the CEO wants to improve the efficiency of the business, the hit rate of new products, and the responsiveness of the supply chain. Business process management and collaboration technology help to achieve these goals. ECM enables business processes to be designed in a graphical modeling environment that can include existing processes, collaborative workspaces, and integration with external systems. The designs are input to a process engine that executes, monitors, and manages business processes and work queues; automatically evaluates business rules; assigns process tasks to the correct system, group, or individual at the appropriate time; and delivers audit data that is critical for performance tuning and compliance initiatives. Collaborative workspaces can be established to map to business processes and to coordinate supplier, partner, and customer activities. The plans, tasks, and results can be captured and shared in an easy-to-use Web interface. Tying collaboration to critical business processes allows organizations to improve client relationships, optimize the supply chain, and accelerate new product innovations and introductions.

So, should the CIO implement this technology now? If the goal is to gain competitive advantage—yes. Today's technology is sufficiently robust to make a difference.

The how

I want to implement, but how do I go about it?

ECM is not a one-size-fits-all kind of technology. The application of ECM can vary enormously. For example a major manufacturer of motor racing engines uses collaboration technology to bring together its suppliers and to optimize its supply chain; pharmaceutical companies use it to manage their new drug approval processes; investment banks use it to automate the contract production process for swaps and derivatives trading; governments use it for their citizen online portals; airlines use it to manage their vital aircraft manuals; and retailers use it to create and maintain their online catalogs. In each case, the criticality of the application varies. How it interacts with other applications will also differ from industry to industry and application to application. There are a number of fundamentals that if considered early will make implementation smoother.

Your choice of ECM application is critical. Your plans for rollout and growth of content management within your organization will dictate the scale and complexity of the ECM application that you choose. The importance of selecting your vendor shouldn't be underestimated. You want a relationship with a trustworthy supplier that has leading products but also a focus on customer service. In today's economic climate, you also want to be sure that they are financially stable enough to continue to develop their products and deliver ongoing support. Given the plethora of vendors who claim to have ECM solutions, the task of selecting one vendor over another is daunting. Clearly, the most powerful evidence of your vendor's abilities and product capabilities will be in its references. Ensure that the applications you are considering have been proven by a customer you respect. Most leading ECM vendors have tools and collateral to help you through your evaluation process. As an example, EMC Documentum has produced a very straightforward guide to ECM that makes no assumptions and spells out clearly the evaluation criteria you need to succeed.

Next, think about how the ECM system will work in your environment. No ECM system that is adding value to an important business problem will stand alone. Try to understand the flow of content in your organization. This is sometimes termed "the content value chain." Where is content first created? It may come from domain experts in a specific department; it may come from an enterprise application (like a CRM or an ERP system); or it may come from outside the organization such as a partner, supplier, or external information source. Map the business process, taking care to understand how and where it crosses departmental or functional boundaries. For example, a piece of content might be created by a pharmaceutical research scientist in a laboratory. That content may become part of the patent submission, the clinical trial, the new drug submission, and the training assets used in the field. It crosses many boundaries inside and outside the organization and needs to interact with other systems such as publishing engines, clinical trials applications, and a sales and marketing portal.

Once the business process is mapped, an impact analysis can be conducted and any required points of integration pinpointed. An assessment needs to be made of how much development work will be required, and how much customization needs doing. Then, the findings are matched with the resources available. ECM systems typically include integrated development environments (IDEs) to make development quicker and easier.

The where

Where should you start? A big bang approach or department by department?

Assuming you're convinced that you need to implement an ECM technology, what approach should you take as your first step? Should you launch a major implementation project across your whole organization, like you may have done in the late 1990s with your ERP systems? Or should you take a cumulative approach, implementing ECM departmentally, identifying high-value scenarios and accretive milestones for success, and building progressively across your company—the “start small, think big, and execute fast” strategy? The answer is that both approaches are valid. There are clearly certain advantages to implementing ECM in an incremental fashion, as that will allow you to focus on a specific requirement set, obtain budgetary approval, and achieve payback as quickly as possible.

So where do you start? First, you need to identify the most critical areas of investment. Do you need to comply with industry regulations and implement a compliance control system, where audit trails, electronic signatures, and longevity of content are paramount? If so, you need to start by implementing a document management system, possibly supplementing it with records management. Perhaps your most crucial requirement is managing your relationships with your suppliers and partners more effectively. Business process management and collaborative workspaces can help you with that. On the other hand, if your most pressing challenge is to improve the quality and functionality of your customer-facing Internet sites, then you probably need to start with Web content management. There are many other examples of business critical content-centric processes for which content management systems are essential: catalogue management, policies production, new account openings, derivative processing, standard operating procedures management, invoice (or claims or application) processing, and so on. Again, identify the most pressing needs and look to implement ECM there first.

Some companies look at ECM in a holistic sense and seek to implement a corporate-wide content management backbone as their initial foray. Such companies view ECM as an infrastructure technology, in the same vein as they view a relational database or an ERP system. They may start department by department, but with a defined goal of connecting these departments to leverage content across their business processes. Few strategic business processes are confined to a single department and few are devoid of important, unstructured content. Companies with vision understand this.

One thing is clear. It is extremely rare for an organization to stop at one content management application. Experience shows us that most medium to large-scale organizations implement at least three more content-centric applications after their initial experience. And here is another significant point: you will undoubtedly implement ECM in one form or another in more than one business area over time. Once you do that you will want to leverage content from one system to another.

If you are using different ECM components, the likelihood is that you will face an integration challenge and significant extra cost. Because if you've deployed multiple applications that just “talk to” each other to support the entire spectrum of content management requirements, you will also be burdened with multiple release cycles, membership and security models, databases, object models, and audit trails, as well as isolated repositories and platform certifications and multiple synchronization points with fragile integrations and architectures. This approach drives up total cost of ownership (TCO) because it requires a variety of skill sets, particularly from IT, increased administration costs to support asynchronous product releases, and increased administration costs to stitch together reports and audit trails from disparate systems. Furthermore, multiple synchronization points across all these systems degrades performance and increases the risk of system failure, while producing a single audit trail for compliance purposes is difficult at best.

So, when you are looking at your individual content management needs, always have a view on how to scale and leverage your initial choice to other departments and other business processes. You may start out by implementing a records management application to ensure you are complying with government regulations for example, but your next application might well need to support your CRM application with unstructured content. Wouldn't it be more effective to ensure both applications are served from a unified content management service?

With this approach, you take advantage of one code base, with one membership and security model, one database and object model, one audit trail, and one administration console. A unified platform for all of your content management needs costs less to deploy and administer and requires less training with fewer interfaces and fewer integration points to manage. Fewer integration points also delivers superior performance and reliability, reducing your risk of system failure. A unified security model and audit trail and one administrative console makes for a more secure system that offers better accountability and visibility.

The who

Who does the work? Who benefits from it?

The level of resources required to successfully implement ECM technologies in your organization will of course be dependent on the scope of the initiative. If you are planning to create and manage websites, the tools exist within Web content management technologies to automate many of those processes. Templating, XSL style sheets, and support for XML are used to make the content creation and management process fluid and less technical. These technologies address the issue of Webmaster bottleneck, where all content has to be reformatted by a technician before it is promoted to the website. Some technical expertise in Java, J2EE, .Net, and COM technologies is very useful when implementing content management applications. If the focus is on managing rich media, for an online catalog or for video streaming for example, specific digital skills might be required. Ingesting a video stream, transcoding it from one format to another, and streaming it to different devices will require some technical expertise. However, one of the goals of ECM vendors is to create intuitive, easy-to-use applications. Much of the complexity is hidden from the developer, the administrator, and indeed the user.

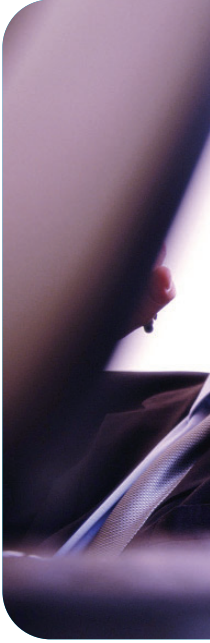
A small-scale, departmental implementation of content management may not require much more than an administrator to implement the system. Most ECM products come with robust installation software that eases the burden of implementation. Since most of the client interfaces are Web-based, there is little that needs to be rolled out to users. The issue is more likely to be training and education to encourage the use of the system.

Nevertheless, if the scope of the implementation is larger, you will need commensurately more resources focused on a successful implementation. If you have effectively mapped the content flow to business processes, you will be confident in your estimate of the required level of customization or development. If you have chosen your ECM platform wisely, the development environment and the administrative interface to manage customization will be there to support your requirements. The amount of resources you need at this point will depend on the scope of the implementation. A straightforward Web presence delivered through a Web content management system can be up and running within a few weeks.

For more complex processes, the implementation time will be longer. If you have relatively complex business processes, you may find you are spending as much time analyzing process flows as you are implementing technology. For very intensive environments where complex workflow and significant lifecycle management is required, the up-front work in mapping business processes becomes essential.

You do not have to do all this yourself. There is a large community of systems integrators with extensive experience in deploying content management applications. They can implement as much or as little as you require. Integrators vary considerably in their focus, domain expertise, and overall project management capabilities. Take up references and talk with others in the content management community. If your requirement is industry specific, you will probably find a smaller but more effective list of potential integrators. Often this is worth the premium that they will no doubt charge.

So the final question is: who actually benefits from ECM? The main beneficiary is clearly “the business.” Internally, staff will gain advantage from getting access to the latest approved content; suppliers will welcome a deeper relationship with the company, as collaborative technologies that enhance the supply chain are rolled out; CFOs will welcome the ability to ensure compliance with industry regulations and corporate governance standards; CIOs will be able to reduce IT costs and gain control of all the unstructured content in the business; and, finally, the CEO will embrace the opportunity to drive the top line while increasing competitive advantage.



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where information lives®

EMC Corporation
176 South Street
Hopkinton, MA 01748
1-508-435-1000
In North America 1-866-464-7381
www.EMC.com

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