



## *AIIM White Paper*

### ***Building an ECM Strategy – Alternatives and Decision Points***

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## Facilitating User Interaction with an Information Architecture

Enterprise Content Management (ECM) is often discussed as if it were a single entity. In reality, ECM is a family of many technologies, which, if properly orchestrated, leverage the features of each component to bring about a powerful level of interaction between people and the business content and processes they use. Looked at in this way, ECM can be considered to encompass business strategy as much as it does information technology (IT) strategy. ECM systems offer a myriad of benefits. ECM can cross virtually every corporate application and every IT platform, on desktops, intranets, and so on, and thus affect virtually every user.

Powerfully orchestrated ECM systems are far from the norm, however. ECM solutions have typically been developed piecemeal over a period of years. Created as individual targeted solutions, they “work,” but collectively, user interaction with content and processes becomes unnecessarily complex. Users are required to learn multiple interfaces to create, manage, or access content and interact with business applications. What most organizations do not have, and should, is the centralized strategy for content organization and access known as information architecture. Information architecture (IA) takes a holistic view of the organizational need for ECM, and strategically deploys technologies as part of a controlled approach to managing content and processes. With an IA, multiple layers of information management functionality are coordinated as a service, capable of being deployed against any number of content sources and repositories and providing the user with a simplified single view.

In this white paper, we discuss the benefits of a holistic, integrated approach to ECM. We look at the approach required to perform a needs assessment. Alternative deployment strategies, including outsourcing options, are introduced within a framework that assists in determining which is the best fit for your organization. We introduce an approach to developing a content governance model that encompasses an information architecture and technology strategy directly supportive of user and management requirements for interacting with business content.

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## The Benefits of IA

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A well-defined IA is the antithesis of approaches that create isolated “solution silos” in an organization. An IA provides numerous benefits to users, management, and IT alike:

- **Redundancy Reduction:** IA reduces (or, in the best cases, eliminates) redundant functionality in an organization, such as multiple search engines, each tied to a specific repository; multiple records management systems, each tied to a specific department; multiple content capture platforms, each independently deployed at a different location in the enterprise and each tied to a single application; and multiple imaging systems, each associated with a particular application or department. As a result, user interaction with the managed content is simplified. Users are no longer required to “thrash” among various interfaces to access content and orchestrate processes.
- **Risk Reduction:** IA eliminates content redundancy, which in turn reduces storage costs and lowers risk. A holistic approach to content management eliminates users’ perceived need to store multiple copies of the same content. Users are provided a single repository, which can be centrally managed and secured without inhibiting distributed access. Organizational risk and compliance are thus more easily managed. Process and content policies (for example, records management policies) are deployed universally from a central source.
- **Increased Productivity and Increased User Satisfaction:** A well-defined IA increases user satisfaction by providing a single interface for all content and processes (and thus reduces process redundancy). Though a single user interface is provided, the interface can offer a flexible approach to content access, including both search and navigation aids. This typically results in increased productivity and increased efficiency by providing a single intuitive point of access to content. Processes and content are more tightly integrated, lessening the need for the user to act as the point of interaction.
- **IT Cost and Effort Reduction:** The deployment of an IA eliminates redundant functionality (for example, multiple imaging systems) as well as the IT costs associated with maintaining and supporting these multiple systems.

## Defining ECM within the Context of an IA

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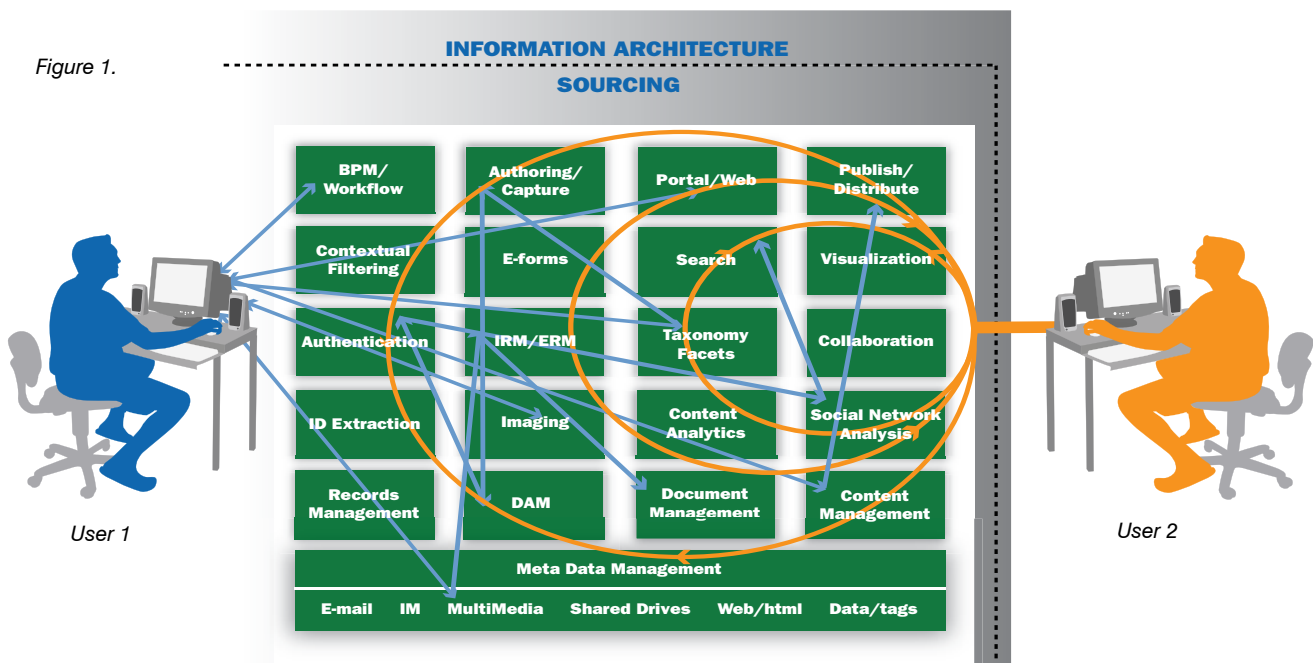
For many organizations, development of an IA represents a new challenge or a rethinking of their Enterprise Content Management strategy. In most organizations, ECM has evolved bit by bit through tactical implementations, each addressing an individualized need. This has led to a proliferation of siloed solutions and applications. It is not uncommon to go into an organization and find multiple intranet platforms, search engines, imaging systems, capture platforms or systems, document management systems, workflow tools, records management systems, etc.

One might argue that if each system is working, there is no need to change. However, although siloed, targeted solutions may be successful at first, organizations typically come to find that their benefits are short-lived. Users discover that the siloed solutions are counterproductive and frustrating as they find themselves thrashing back and forth from one system to another. Content and content-related processes transcend applications and departments. Users find themselves as the point of integration, manually providing the “glue” among multiple content repositories, access interfaces, and process management systems. There is a need to establish an organization-wide approach to ECM that facilitates cross-department and cross-application content and process functionality, removing this burden from the user and simultaneously meeting management’s need for tighter control, reduction of risk, and compliance with regulations. Furthermore, as noted above, IT complexity and its associated costs can be significantly reduced by the elimination of redundancy in software and services associated with a piecemeal approach to ECM.

## Developing an ECM Strategy and Framework That is Right for Your Organization

Formation of an IA requires development of a strategy and framework. This approach to ECM is based not on the implementation of a single product, but on the integration of multiple products, each strategically deployed and leveraged. A centralized ECM strategy takes a holistic view of the needs of the organization. It provides the required ECM functionality across the organization using as few tools as possible, centralizing support and maximizing the return on investment.

Development of an IA must address technical and business issues. The “right mix” of component technologies and services for the organization might include search; collaboration; authoring or capture; workflow or business process management (BPM); content, document, or records management; security; or authentication. But it is not just the right mix that is important, but also the orchestration of the components and minimization of functional redundancy. The center of Figure 1 illustrates an IA as a series of component technologies. User 1 in this illustration is using an IA that is built on siloed solutions. For example, functionality such as search, though a single feature of the IA, is deployed as many systems, and thus there are many points of interaction between the user and this “single” feature. User 1 is positioned as the point of integration. As a result, the user thrashes among multiple interfaces and systems. User 2 accesses the IA as an orchestrated and integrated series of functional components. As a result, for User 2, the IA becomes the point of integration and the user experience is simplified. In this case, while individual technologies and functionalities are separate and distinct, they are integrated and deployed as production systems, providing functionality across applications and across the organization to the greatest degree possible.



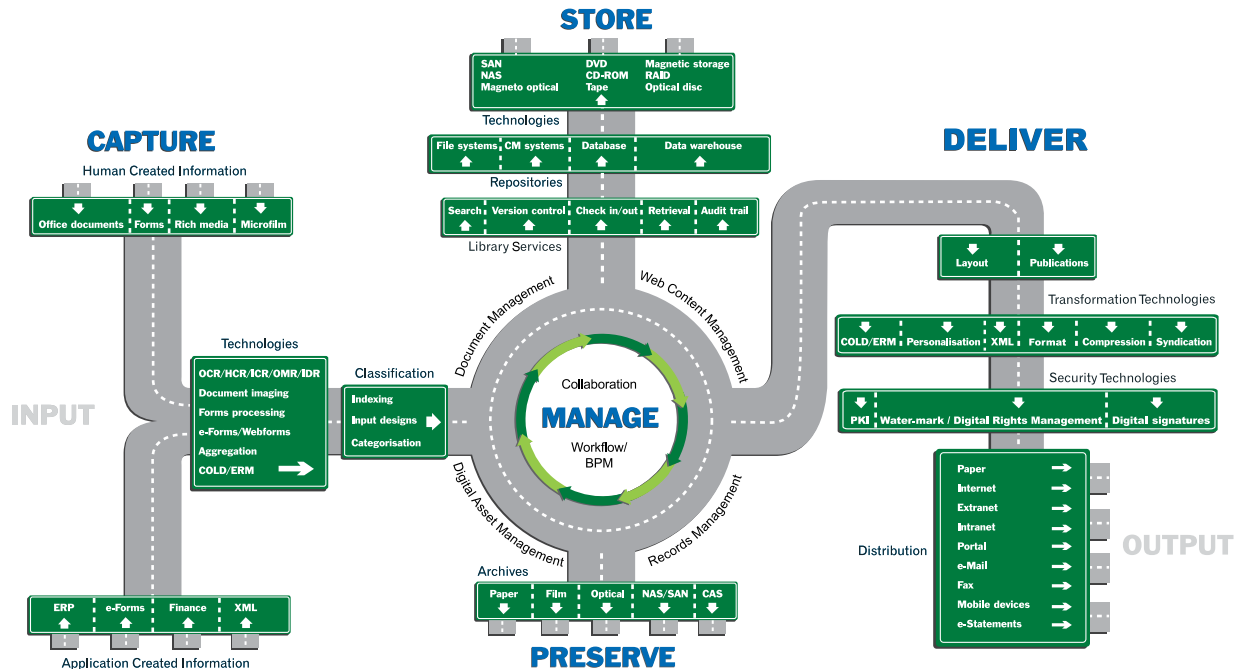
### Where is Your Point of Integration?

ECM is made up of multiple technologies positioned collectively to bring about a desired level of access and management of content (the green boxes in the illustration above). The role of IA is to deliver that functionality as an orchestrated and integrated resource. (The sourcing bar that separates the IA from the deployment of technology represents the potential to outsource ECM, discussed in more detail below.) For User 1, the IA has not been developed strategically, if at all. The individual functional components exist as silos and can occur multiple times in multiple stand-alone applications. As a result, User 1 is burdened with being the point of integration. User 1 must, for example, learn and interface with several search tools, process interfaces, and content or records management tools. User 2, on the other hand, has the benefit of a well-defined and orchestrated IA, strategically leveraging sourcing options and federated approaches to functionality (explained in more detail later in this paper). As a result, User 2 accesses ECM functionality and related content and business processes as cross-organizational capabilities or resources, which simplifies access, eliminates frustration, and increases productivity.

Organizations that wish to develop an IA must make two decisions: what the right mix of ECM technology components is and what approach they will use to deploy or integrate the components. But these technical decisions should be preceded by definition of the business applications or processes that exist in the organization. Development of an IA is as much about business process as technology. (It should be appreciated that this white paper focuses on an enterprise-wide approach to ECM and IA. If corporate sponsorship of the project does not exist at a senior level, strategy and design can be limited to the domain under the control of the business sponsor.)

Process diagrams should be developed for each business application. These are not technical diagrams but rather business process flow charts. Special attention needs to be paid to the inputs and outputs of each application (that is, *What content is necessary to support or drive the application? What content is created or modified as a result of the application?*). The level of control required by each application over the content should be noted (for example, *At what stage in its life cycle is the content? At this stage of its life cycle, what types of security and access are preferred?*). With the process models defined, look for commonalities across applications (for example, *How often is a records management system, a search engine, meta tags, or document capture and imaging required? Is the need for automated, structured process control evident?*). Look for needs that span all or most of the applications. These represent a need to deploy functionality centrally, provided as a platform capability to all users and applications, as opposed to deploying it in silos. Specialized user and application requirements may represent a need for tweaking in certain situations, but may also indicate a need to deploy specialized siloed functionality.

Figure 2.



It is often very helpful, at this stage of design, to also examine needs across the five distinct stages of a content life cycle: capture, store, manage, deliver, and preserve. Group the required functionality across applications under these stages of ECM, looking for commonalities among applications. Emerging clusters of user and process need are further evidence of the practicality of centralized, singly deployed platforms of functionality that can be made available across the organization. For example, a centralized platform or service for capturing and storing images can be used across multiple applications and users. Similarly, a single approach to preserving content declared as records, from within multiple applications and across user types, can be centrally configured and leveraged.

As common needs are identified that cut across these five stages of ECM, potential arises to deploy ECM in a platform. The organization should consider whether it is possible to use one product suite to address all these functions. If there is evidence for a “best of breed” approach to each stage of ECM, then separate products, each addressing a specific stage, can be integrated and deployed in a manner that mimics a platform solution. In either case, the goal is to provide a solution that functions as holistically as is practical, supporting departmental and user requirements within a centralized infrastructure.

## The Role of Outsourcing

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Finally, in an effort to streamline ECM production and support, maximize solution effectiveness, and achieve the highest degree of cost effectiveness, it behooves each organization to assess the degree to which the ECM solution can be outsourced. Virtually every component of the IA, as well as processes and applications, can potentially be sent to an outside party. A careful cost/benefit analysis should be undertaken to determine the merits of outsourcing in each case. This analysis should focus on two things: ECM functionality and business processes. In other words, it should be determined whether there is merit in outsourcing a function that can be provided across applications (for example, third-party delivery of document capture or scanning), or in outsourcing an application (for example, having accounts payable run by a third party). In each case, models including in-house outsourcing (a service provider approach that is delivered by an on-site third party) and off-site provision of services or functionality (for example, an entire process or department being run remotely by a third party) should be evaluated. On-site outsourcing, near-site outsourcing, offshoring, and SaaS-based (Software as a Service) outsourcing are models that can provide entire ECM platforms, ECM components, or business applications. All options should be explored.

*“... in an effort to streamline ECM production and support, maximize solution effectiveness, and achieve the highest degree of cost effectiveness, it behooves each organization to assess the degree to which the ECM solution can be outsourced.”*

A framework for this level of evaluation can be supplied by the application-based needs assessment discussed at the beginning of this section. A grid can be used to determine the attractiveness or applicability of outsourcing models to the deployment of an ECM. As illustrated in Figure 3, the grid is built on two axes: competency and criticality.

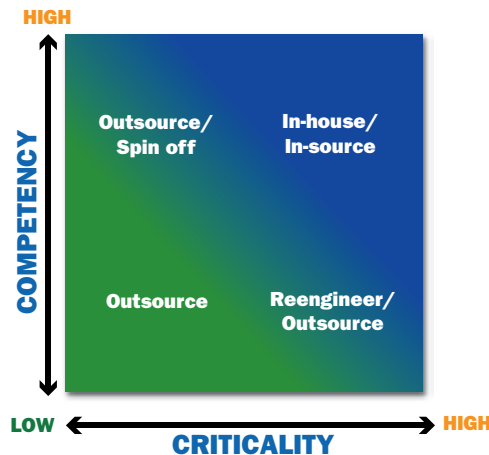
**Competency** is the degree to which the organization possesses the talents and experience to execute the process or function with agility and in a cost-effective manner. That is, is this a core competency of the organization?

**Criticality** is the degree to which the process or function is innate to the organization or the degree of differentiation it provides for the organization. For example, payroll may be important to an organization, but in most cases it is not critical to defining the value of the organization. Each function and process can be positioned along these axes, which will position them within the grid.

In practice, applications may not sit squarely in any quadrant, but may instead lie in the darker center of the grid, indicating that hybrid alternatives may be used. Let us take the processing of new customer accounts as an example. Processing of new customer accounts may clearly be critical to the company. Thus, initial assessment positions it on the right side of the grid — keeping it in-house. If current processing is inefficient and clumsy, a reengineering effort is indicated, and this reengineering initiative might use outsourced resources to help build a better in-house competency. Continuing the example, further investigation of the process uncovers that it is actually made up of many sub-processes. One of these sub-processes is the scanning and indexing of incoming paperwork. If scanning is not viewed as critical to the process, and there is little scanning expertise in-house, this function could be outsourced, sent off-site. If, however, the role of scanning and indexing is seen as fundamental to the overall acquisition process, company leaders may be reluctant to fully outsource it. In such a case, the sub-process may be “in-sourced,” operated by a third party, but under the control of and within the physical confines of the organization.

The grid is a first pass at determining how a function or application might be addressed. In the end, an analysis that takes into consideration the organization’s propensity for change and outsourcing, as well as a cost/benefit analysis of alternatives, should be undertaken.

Figure 3.



**Outsource/Spin off**  
 Those that are positioned in the upper left quadrant are candidates for outsourcing or spin-off as a separate entity. They are not critical to the organization, but they require a great deal of expertise or competency. The level of competency implies that the expertise or process model can be explained or transferred to a third party; in some cases they are candidates to spin off the competency into another organization.

**In-house/In-source**  
 Those in the upper right quadrant likely remain in-house, under the direct control of or heavily supervised by organizational personnel. These are applications or functions for which there is an established competency and critical need. Thus, such applications may utilize outsourced or third-party resources, but a wholesale divestiture of the process is not likely due to its criticality.

**Outsource**  
 Functions and applications that are positioned in the bottom left quadrant are candidates for outsourcing. Lack of criticality makes outsourcing a distinct possibility, but the low level of competency warrants a closer relationship and handoff than a simple, carte blanche outsourcing. This may suggest a SaaS model.

**Reengineer/Outsource**  
 Those that are in the bottom right quadrant are candidates for an in-house reengineering effort, or an effort in partnership with a service provider. Their criticality warrants keeping them close to the organization, but poor performance necessitates review and overhaul.

## Developing Your Strategy

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Once the inventory of processes, the identification of required ECM technologies, the scope of functionality, and the inventory of existing technology investments are completed, an organization can begin to form its implementation strategy or timeline.

In some cases, it may make sense to deploy a single technology component across all departments and processes. For example, if there is a dire need to maximize the efficiency of capture across several departments or applications that rely on capture as foundational to the process, then it makes sense to initially deploy that functionality across the organization (perhaps leaving other process components untouched initially). In other cases, it may make sense to deploy several component technologies in a single department or process. For example, if there is a pressing need to automate the handling of loan applications, and reaching that goal necessitates the deployment of capture, imaging, workflow, and records management simultaneously, then it makes sense to deploy each of these functions within the framework of loan applications. However, one should keep in mind a strategy for how that functionality will scale to other areas of the organization. If the overall strategy identified centralized outsourced capture as part of the IA, then the capture process for loan applications should be deployed in this manner from the start. Whether an organization is deploying a single technology or several technologies at once, however, the goal is to have a central strategy and to deploy the total organizational solution in whatever progression makes the most sense and ultimately results in the realization of the overall IA strategy and design.

In the real world, it must be appreciated that the information architecture design is seldom starting with a clean slate. Decisions will be affected by the current inventory of in-house technology. Where redundant functionality exists, and it is determined that each instance does not require a siloed solution, there are two options: Select one solution as the organizational standard or implement a federated model. A federated approach can be used for many component technologies, such as records management, search, and workflow. In these instances, point solutions remain in place, but one tool provides a single interface to the tools. For example, a federated search tool accepts a single query from a user, brokers it to multiple search engines targeted at different repositories, and returns a single list of retrieved content.

ECM should be positioned as a hub, an underlying set of functionalities made available to the organization in much the same way a telephone network is made available. As was introduced earlier in the context of Figure 2, the establishment of organizational office and production capture, imaging, and storage functionality should be used to establish standards across the organization, thus providing better control and consistency, lowered risk, and reduced cost. The same should be done for archival and records management, production, and localized printing and content distribution across Web sites. This will support the organization's approach to compliance, which should lead to reduced costs.

Similarly, best practices for how content and processes are linked should be established. Preferred or organizational standard approaches to workflow and BPM should be defined. Preferred approaches to linking content to specific processes and to integrating processes (including legacy systems) should also be defined. To the degree practical, these should be positioned as callable, plug-and-play modules to be used throughout the organization. Existing integration between applications should be maintained in an inventory that is accessible by process owners and creators. For example, if a sub-process exists that integrates capture and records management (so that when a document is scanned, defined policies automatically declare the image as the appropriate record type), that process should be able to be invoked by virtually anyone in the organization. This should include the availability of workflow templates that users can configure to facilitate the integration of multiple back-office document-driven processes. Using this approach, it is likely that standard or preferred approaches to authoring, capturing, and publishing content

can be established as ECM on-ramps and off-ramps. These would be commonly used throughout the organization, providing ease of use, a common look, increased consistency, reduced risk, and the distinct possibility of lowered costs that accompanies standardizing technology components.

What will result is one of two basic architectural models. In the first model, a single vendor solution is used to provide all ECM functionality. In such a case, the single solution provider delivers a fully integrated set of functionalities. The second architectural model would leverage distinct ECM component technologies or applications. In this scenario, the individual technologies can be sole-sourced and integrated with other component technologies, or a federated approach to that component technology could be taken. The first scenario is typically used when there is legacy functionality that will remain in place, but one tool is selected as the single interface (or federator) of the functionality. In each case, the level of granularity is customizable. For example, a single solution could be used to provide integrated search, records management, and document management, while the remaining functionality is provided by other solutions.

In every scenario, outsourcing is a viable option. This could include the development of in-house capabilities by a service provider, the provision of functionality in a SaaS model, or the complete transfer of a process to a service provider.

In conclusion, it should be reiterated that there is no one-size-fits-all when it comes to IA. Each IA and ECM deployment should be a customized approach that best leverages the organization's competencies and strengths, the competencies and strengths of potential outsourcers, and existing investments. Many factors play a role in determining which approach to IA and ECM is right for the organization. For example, large, geographically dispersed organizations could benefit from an outsourced, centralized mail processing capability that includes capture and automated linking to an in-house workflow system. Small and mid-sized organizations with little IT expertise or budget may benefit from a SaaS model in which functionality is supported by experts and maintenance is automatically provided. Hybrid models are often the best approach.

## About the Author

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### **Carl Frappaolo - Vice President, AIIM Market Intelligence**



With over 25 years experience working with a broad array of business solutions including knowledge and content management, portals, search engines, document management, workflow, BPM, records management, imaging, intranets and electronic document databases, Mr. Frappaolo is well versed in the practical business and technical aspects of implementing large scale e-applications. Valued for his technical, practical and market expertise, he has consulted with a variety of organizations spanning multiple industries.

Prior to joining AIIM, Mr. Frappaolo founded Delphi Group, where he led the firm's consulting and market research practice for nearly 20 years. He is the creator of several methodologies designed to address the needs of knowledge management, content management, business process management and portal design.

Mr. Frappaolo has published 4 books and over 300 studies, articles and whitepapers, and has lectured to audiences around the world.

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