The iECM Initiative

Enabling ECM Across System and Organizational Boundaries.

By Cornelia Davis and Eric Stevens

Organizations that have deployed enterprise content management (ECM) systems are realizing significant benefits from improved accessibility, management, use, and reuse of their content assets and the streamlining of their content-centric business processes. The value is so significant that companies are now seeking similar efficiency improvements through the implementation of content-centric processes that span the numerous content management systems that they inevitably have. In fact, the environment of these applications not only spans numerous systems *within* the enterprise but the reach also *extends beyond* enterprise boundaries; to achieve maximum business benefits, organizations must work together with their partners, suppliers, and customers. Because there necessarily is no single point of IT system control, the implementation of the required systems presents some unique and significant challenges.

Localized solutions, optimized to meet the very specific needs of their user community cannot simply be replaced by a single, one-size-fits-all solution. The users of each specialized application who wish to continue working within their familiar environment, however, must be able to utilize the content and processes of other systems as if they were their own. The challenge is further compounded by the fact that the content infrastructure is constantly changing through the deployment of new systems, corporate acquisitions, and the dynamics of external corporate relationships. Finally, the systems and applications that comprise this ecosystem are deployed on a variety of platforms and are written in many different programming languages. All of these factors combine to create a tremendous challenge for the IT professional tasked with delivering necessary business solutions.

Today, organizations that are deploying solutions that involve a multitude of individual content management systems are generally doing so through integration. That is, technology is created, sometimes with the assistance of purchased middleware components, that connects the various systems in the specific manner required. Unfortunately, the resulting solutions are rather static and brittle, expensive to maintain, and cumbersome to upgrade.

Interoperability Instead of Integration

The Interoperable Enterprise Content Management (iECM) approach differs from this in a very fundamental way. Rather than placing the majority of the coordination burden on the application, iECM requires that content management systems offer standardized interoperability capabilities. This would essentially allow an application to speak the same language when communicating with any of the content management systems involved. In specifying such a standard, the challenge is ensuring that the set of components facilitating interoperability is completely defined. If only parts of ECM are standardized then the application will still be left implementing and maintaining a great deal of "one-off" code and the resulting solutions will be as inflexible as they are today.

The iECM model identifies three fundamental areas of standardization. The first is a set of common content management

operations, the *iECM services*. All content management systems today offer functions such as document transfers, check-in/out, metadata reading and writing, and many other capabilities beyond pure repository access. To achieve interoperability there must be agreement on what the core, common set is and on the exact semantics of each of the included functions.

Standardizing the set of operations without addressing normalization of the information that flows through those operations would leave us with a remaining integration problem. Therefore the second element of the iECM model is the *iECM domain and metadata model*. Content management is well enough established that there is a pervasive domain model. For example, virtually every system exposes *files* and *folders* as well as *content types* and various other structures. All CM systems support the attachment of metadata to the unstructured content they manage with some overlap in the types of metadata natively supported, such as author and creation date. And all systems allow for custom metadata fields. Despite the similarities, however, today each system maintains its own namespace for these objects and in some cases there are also varying semantics for similar concepts. iECM will establish an agreed-upon domain model as well as a standardized means for describing extensions to it.

The third piece, the *iECM component model*, is a concrete schema that formally describes the entities of the content management ecosystem including the services, the domain and metadata models, the access mechanisms and protocols, and even the repositories themselves. This component model serves numerous purposes. First, the content ecosystem relevant to a particular consumer is ever changing. New systems come online, old ones are eliminated, and configurations of existing ones change. The applications utilizing the CM systems in this environment must dynamically adapt to that changing environment and can do so only if the environment is succinctly described and the descriptions are readily available. Second, while in some ways the simplest way of achieving full interoperability would be to have a hard requirement that all systems adhere to exactly the same standard, realistically, achieving interoperability will be an incremental process and there will be CM systems with varying levels of maturity in the content ecosystem. By clearly describing the characteristics of a CM system, a consumer can adapt, requesting information in the appropriate manner and expecting only the results available for that system.

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The iECM services, the iECM domain and metadata model, and the iECM component model will be formally delivered as an *iECM reference model*. This will be the point of consolidation, where the formal, detailed, and agreed-upon definitions of all the elements of content management needed for CM system interoperability will be documented. This model itself will not be explicitly tied to any existing standards or protocols, however, the models implicit in established standards will influence the design. Explicitly providing this formal model serves not only subsequent API mappings or developments, but also acts as an important normalizer for the content management industry.

Web Services

We have already acknowledged that there are existing standards that address interoperability to some extent and the design of the iECM reference model allows for their inclusion. None of the existing standards, however, offer interfaces that play nicely in service oriented architectures (SOAs). Because of the content management ecosystem heterogeneity, the distributed nature of the solutions, and the need to leverage infrastructure components that are a part of SOA, the iECM initiative will also produce a Web services standard that instantiates the agreed-upon services and other artifacts of the iECM reference model.

The iECM initiative has manifested as a consortium with the objective of informing and assisting stakeholder communities with the challenges of managing content over disparate systems. In addition to the creation of the above described iECM reference model and the iECM Web Services Specification, the iECM consortium will endorse existing applicable standards and work collaboratively with standards organizations to enhance those standards for greater interoperability. The iECM consortium will also provide market guidance by producing best practices that instantiate the iECM reference model against existing systems and standards, demonstrating an incremental path to achieving a fully interoperable content management environment.

The standardization driven by the iECM initiative is of clear value to the end user community in that they will have pervasive

access to all relevant content without customized connectors. IT departments will be able to redirect funds from these expensive tasks to projects addressing the core business functions of the enterprise. The ECM vendor will benefit from the inevitable expansion of the content management market. Once sufficient standardization has been achieved, application developers will be able to include content management as an integral part of virtually any type of application, much in the same manner they do with RDBM systems today. Solutions integrators will benefit by being able to deliver high-value business applications more rapidly and with greater margins, once they are no longer required to create and maintain expensive connector plumbing. Achieving ECM interoperability will result in billions of dollars of new sales and services income to vendors and integrators and many times that in increased profits, savings, and enhanced business efficiencies for the consumers of these products. Within the next 10 years the value and relevance of business and government will be based on their ability to seamlessly interoperate with organizational, national, and global information flows. iECM will enable that.

Shape the ECM Industry

The iECM consortium is actively seeking members to help guide and contribute to the work being done. Members in iECM will help shape the content management landscape of the future through the exchange of ideas, development of best practices, and the consolidation of the collective experience of organizations all focused on solving similar information sharing challenges.

If you are interested in joining the iECM Consortium you can get more information on the AIIM iECM website (www.aiim.org/standards.asp?ID=29284) or by contacting Eric Stevens (eric.stevens@hummingbird.com).

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Both authors are active participants in the iECM initiative.

Service Oriented Architecture and Business Processes

Used together properly, these tools can improve efficiency within your organization.

By Gary Gershon

Document scanning ushered in a new era for automating paper-centric business processes, and with it the world of production workflow software blossomed. In the ensuing decade we have found these systems to be highly useful for routing non-paper documents and the industry has extended workflow into a new software category: business process management (BPM). BPM moves beyond traditional workflow with highly useful capabilities to manage and control processes as well as incorporate business activity monitoring (BAM) features.

Now we are at another junction point