

Enterprise Content Management: Expected Evolution or Vendor Positioning?

Executive Summary

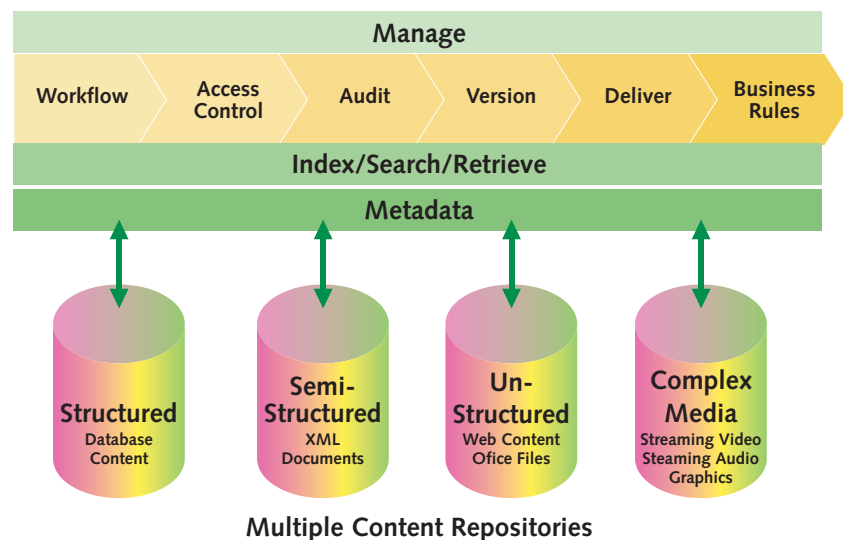
Document management, Web content management, and digital asset management represent the three most prominent categories of information management solutions that are converging into the broader enterprise content management category, at least on the market's surface. As the market for corporate information and content management has grown, vendors have created new categories to describe their narrowly focused products. While these products have a plethora of differences, they may have more in common than many vendors would like to believe. This overlap is clearly driving a consolidation of vendors and convergence of products as the leading companies in the large Web content and document management categories extend their products through acquisition, integration, and development activity to offer wary customers a more complete solution for managing a broad base of digital asset formats. Exhibit 1 illustrates how increasingly complex content usage has driven vendors to attempt to solve a larger content management problem. This evolving solution seeks to consolidate all categories of asset management into a single enterprise content management solution.

Yet, is it truly possible, or for that matter, desirable, to implement a single infrastructure to manage all digital content assets? Can one product effectively prepare technical documents for printed and online manuals, and also ingest, tag, and manage video files destined for streaming to Web users? While Web content management and document management are proven at an enterprise-level, where do departmentally focused applications fit into the grand scheme?

Exhibit 1

Content Management Systems Must Address a Broad Base of Digital Formats

Source: the Yankee Group, 2002



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This Report looks at these important questions and analyzes how vendors are positioning their products to offer enterprises a single-source approach to content management. Further, this Report examines the unique value proposition of each product category and creates a consolidated view of enterprise requirements for traditional content and rich asset management.

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I. Introduction: Technology Drives the Development of Content Management

As businesses began to realize the value of corporate computing, they saw the need for repositories to handle the information they were processing, and ultimately adopted relational databases. The turn of the century brought with it a new breed of enterprise data and information management products, as databases of structured content began to work side by side with less structured document and Web content management systems. Newer, rich-media file formats have increased the stakes for content management vendors, putting pressure on market participants to provide an effective means of efficiently and securely deriving business value from complex collections of corporate information.

The introduction and development of tools for managing enterprise content has been the combined result of an increase in Internet usage by businesses and the explosion of electronic content, collaborative workflows, and communications. The market for content management tools remains relatively young, and an industry-wide cutback in software spending by U.S. corporations has slowed anticipated sales by the many vendors in this space. While sales may have slowed, vendors are actively enhancing their products. What began as a relatively simple vendor landscape has emerged to become one that can be confusing to even the most savvy business manager.

This market confusion has been caused by the introduction of specialized and overlapping asset management tools and services and the convergence of these products into broader solutions, resulting in complex relationships among vendors in the market.

This Report aims to simplify this rapidly evolving and frequently perplexing market so as to assist end-user organizations in determining their need for content and asset management systems.

As a component of this analysis, we will identify the unique value proposition that each category offers. We will make this assessment based on the types of content the customer must manage, the quantity of that content, and the level of collaboration and interaction that content owners and users may need.

II. Confusion in the Content Management Market

Document management systems arose in the early 1990s with the goal of automating and securing the document authoring and review process. Early providers either targeted organizations creating large complex documents such as FDA submissions by pharmaceutical companies, or sought to manage the flow of documents as part of a business process. While the application of these solutions differed, they shared many fundamental functional components, including a secure document repository and a process-oriented workflow.

Characteristics of Content Management Today

Several basic capabilities remain core to the many asset management systems on the market today. Without the following functions, asset management systems would be difficult to differentiate from existing databases and file systems.

Content Repositories

The content repository may consist of either a data storage medium that holds the digital asset, metadata describing the asset (though no actual asset), or both. The repository also enforces the business rules controlling its access, use, and presentation.

The actual digital assets (files) are stored in the file system, a relational database, a native XML database, or possibly a system optimized for delivery. The underlying storage system is becoming less important as part of the asset management system, as products move toward a “virtual” approach to the repository, provided, of course, that the underlying system offers appropriate security.

The repository stores the rules that support the basic asset management capabilities of access control, check-out/check-in, asset versioning and rollback, and auditing.

The metadata (data describing the asset) is the most important data stored by the asset management system. The metadata includes information necessary for enforcement of business rules as well as descriptions of the asset’s content including categories, named entities, and tags to support search and repurposing. The extent of the metadata varies with the type of asset and represents a fundamental area of difference among the variety of asset management systems.

Team Authoring and Process Management

Asset management systems extend into the enterprise and enable team authoring and collaboration around the production of content, documents, and Web sites. To be effective, collaboration must be organized and controlled. Content management systems

organize group authoring by controlling access to the content and identifying the current editor (check-out and check-in); creating and managing the review process (workflow); allowing a simple return to an earlier state (rollback); and tracking who changed what and when.

While these features are common to all categories of asset management solutions, the depth of function varies. Process-oriented collaboration or workflow can be implemented in many ways. A simple workflow moves a document from author to approver to production in a step-by-step or serial manner. Some organizations have more sophisticated workflows that may include multiple approvers that actually participate in the review process at the same time, creating a parallel workflow. They may also require capabilities including delegation and voting-based approval.

Content and asset management systems available today vary in terms of the depth of their workflow and the ease with which it can be defined. Traditional enterprise document management products are designed to securely manage the production and delivery of high-value documents. These solutions have developed sophisticated and flexible workflow processes supported by appropriate security and auditing. The lifecycle of Web content is usually shorter and requires less sophisticated process management. Collaborative document management solutions are more interactive in nature, involving less workflow and more synchronous communication.

Information Access

A PC-based interface, increasingly delivered through a Web browser, provides users with access to assets under management. Using the client as an interface to the application, users can contribute assets to the repository, find and edit assets, and participate in the approval workflow.

The set of capabilities and the features provided in the client vary based on user and asset types. For example, administrators and Web publishers require tools to control and manage content access and deployment. In contrast, content creators may use the client to contribute content assets, but must be able to work in the appropriate desktop applications, including Microsoft Word, Adobe Photoshop, and Macromedia Dreamweaver. Additionally, users of complex asset types such as audio and video often require a separate set of specialized capabilities. These capabilities are described in more detail below.

Asset Search and Retrieval

Asset management systems enable location of and access to content through search and retrieval technology that quickly locates the relevant content stored in the repository. Search and retrieval is a large and specialized product category with products now expanding beyond basic text indexing (scanning the text within documents and noting the location of specific content for future use) to being able to infer the subject of photos from the surrounding text, and read the dialog of rich audio and video media to index subject and scenes. Asset management systems have differentiated their products by including indexing and retrieval technologies focused on the specialized content types under management.

Today, search and retrieval technology has expanded beyond the single repository to index content throughout the enterprise. This index serves as a unifying metadata layer allowing users to find all indexed content through the enterprise. While potentially creating new security and access control concerns, this enterprise index is key to knowledge management and collaboration initiatives within the enterprise.

Specialized Needs for Complex Asset Types

The unique features of rich (graphic) and complex (audio and video) assets present challenges for asset management tools, particularly while contributing assets to the repository and presenting them to the end user. The use of the term “ingest” for the process of reading and describing complex assets demonstrates the uniqueness of this process. Yet the creation of metadata that provides a virtual structure on complex assets is essential to deriving value from these assets efficiently.

A fundamental part of the contribution or ingestion process is structuring the asset with the required metadata. The contribution process is straightforward with text documents. The metadata describing “category” or “purpose” can be created by the user or by an automated categorizer. Search tools can also index the text as part of the contribution process. Graphics present a different challenge. Graphic indexing and classification tools usually rely on associated text and specific metadata. Thus the asset management system must require contributors to include appropriate and useful metadata.

Complex assets present additional challenges during ingestion. Audio files with voice narratives must be turned into text so they can be tagged and indexed. Video files contain even more information and the ingestion process converts speech to text, tags and indexes, and also structures the video by identifying scene changes and creating thumbnail images to represent specific segments of the video file.

The presentation of rich and complex assets is also unique. Images come in many sizes and resolutions, requiring systems to store many versions of files or render versions on demand to meet the requests of the application. Audio and video assets are most often streamed to the user and are most effective when only the requested segment or scene is delivered. Tools that extend to the presentation phase of asset management must support these additional requirements.

Solutions and Product Categories

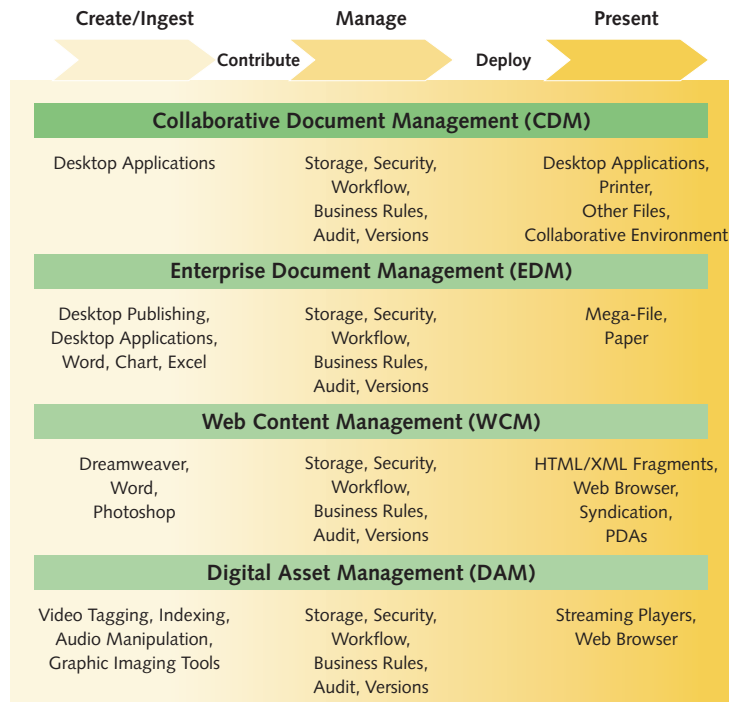
The content lifecycle consists of three main phases: create or ingest, manage, and present. Content management systems of all categories have a hand in each of these phases, but differ in terms of specific application of the technology. The specialized requirements of the contribution and presentation phases of asset management have been the key differentiators of the various asset management systems, resulting in specialized tools to manage and deliver the value of each asset type. Yet, as discussed above, many of the requirements, particularly in the “manage” phase of the content lifecycle, are consistent across categories. The following list describes the similarities and differences among the categories of content and asset management across the content lifecycle (see Exhibit 2):

- **Document management (DM)**, the grandfather of the category, originated to provide secure group authoring and presentation (usually on paper) of a document, or of the result of a business process.

Exhibit 2

Clear Similarities Between Solution Categories Can Be Seen Across the Content Lifecycle

Source: the Yankee Group, 2002



- More recently, lightweight document management tools, or **collaborative document management (CDM)** solutions, have come to market to organize the sharing of documents to facilitate collaboration and enable knowledge management applications.

Key vendors: Microsoft (Sharepoint), Gauss Interprise, Vignette (Multisite Content Manager), Stellent.

- Traditional document management supports enterprise-scale applications, including the secure authoring and managing of document-based business workflows, and is referred to as **enterprise document management (EDM)**.

Key vendors: Documentum, FileNET.

- **Web content management (WCM)** arose with the growth of the Internet and manages content, usually smaller chunks of text or graphics, into an HTML template destined for presentation to a Web browser. These tools help create better Web sites more quickly and easily. The “Web” terminology is becoming archaic as these tools increasingly manage content to additional destinations including handheld and wireless devices.

Key vendors: Atomz, divine, Documentum, Interwoven, Microsoft, Stellent, Vignette.

- **Digital asset management (DAM)** solutions extend the basic control and access capabilities of the DM and WCM products to meet the specialized needs of complex assets such as audio and video. DAM products were introduced to meet the need of media companies managing their image, audio, and video assets to the Web, and are now extended to meet enterprise requirements.

Key vendors: Artesia, Documentum (Bulldog), Engage, MediaBin, North Plains Systems, WebWare.

- **Brand asset management (BAM)** is specialized form of content management that considers the needs of rich asset types (graphic identities and branding, for example) and provides collaboration, content repurposing, and specialized access and control to manage content usage.

Key vendors: Artesia, MediaBin, WebWare.

- **Video Asset Management (VAM)**, a specialized split from DAM, focuses entirely on the ingestion process for video assets, creating the richest metadata for the contents of the video.

Key vendors: Pictron, Sonic Foundry, Virage.

The proliferation of these management systems has confused buyers and ultimately created as many problems as it has solved. The soft economy and the resulting lack of spending on software are culling the herd, forcing the weaker companies out and the less-valued categories (DAM) into the stronger categories (WCM, DM). The result is a market trend toward consolidated product offerings referred to as enterprise content management (ECM).

Enterprise content management, the topic of this Report, presents an all-encompassing view of a single management infrastructure for assets throughout the enterprise. ECM systems are most commonly thought of as having the combined functionality of document management, Web content management, and digital asset management systems. While many vendors have jumped aboard the ECM train, the category has yet to leave the station. And, despite current vendor activity, the destination is not clear.

Two different approaches for unifying content across the enterprise exist in the market today, differentiated by the presence or absence of a single consolidated asset repository. Though a single repository offers efficiencies in management and administration, potentially resulting in lower total cost of ownership, its use raises other potential challenges. A single repository may not, in fact, be optimal for every asset type, and the tools required for ingestion, management, and presentation of complex asset types may not connect to the single repository. No single repository solution capable of handling these requirements exists.

The opposing approach unifies content through the metadata and management layer. Some content management systems are evolving to create robust metadata and connectors to various structured, semi-structured, and unstructured repositories. This enables these tools to manage the content lifecycle application across all asset types while remaining independent of physical asset storage. Stand-alone metadata repositories, databases of the metadata from a broad set of applications and repositories, are also seeking to unify information access independent of the application with the promise of providing flexibility of storage and presentation of content assets.

III. Content Management Convergence: Past, Present, and Future

Drivers of Change: A Universal Problem and Fragmented Tools

The explosion of enterprise content and increasing adoption of rich and complex media types has led to demand for a more robust asset management system. The Yankee Group's Enterprise Computing & Networking Planning Service forecasts that by 2005, the total storage capacity of installed networks will have more than quadrupled from year-end 2001 levels, and the percentage of rich content will have jumped from 12% of total stored content in 2001 to 34% in 2005. This electronic content growth has been driven by increased PC penetration among businesses around the world and higher corporate Internet usage. Business processes that once involved messy paperwork are now completed in a paperless environment, as corporate communications materials, faxes, presentation documents, sales collateral, and billing statements may never see the light of the physical world. All this new electronic data is stored on file servers and in databases scattered around corporate networks. While on the surface, the digitization of corporate documentation may help to cut costs and speed operations, most large businesses will have a threshold at which content glut becomes overwhelming to their organization, causing processes to break down and become inefficient. At this point a system for managing content should be considered.

Recognizing a definitive corporate need for more effective content and asset management, thousands of early-adopting end-user organizations have already rolled out content management systems. The growth of the Internet as a business application has helped vendors such as Vignette, Interwoven, and Documentum drive the Web content management category past document management in terms of software revenues. WCM software sales represented approximately 56% of the total content management market in 2001, while DM lagged with 41%, and DAM represented a mere 3%.

Generally, content management systems are horizontally focused applications, and end-user organizations can be found across the major industry segments, including financial services, consumer packaged goods, pharmaceuticals, telecommunications, government, media and entertainment, and technology. These organizations have recognized that, in addition to document and Web content management requirements, there may be a need for specific genres of asset management within corporate lines of business.

DM and WCM vendors have seen smaller, niche vendors sell products to marketing departments within large enterprises and to specialized vertical markets such as media and entertainment. These smaller, niche vendors include providers of solutions for brand asset management, digital asset management, video management, and specialized enterprise search. Recognizing a market opportunity, content management vendors and niche players quickly began to partner with any and all vendors that demonstrated the slightest sign of product synergy. These partnerships provide a quick-fix solution for content management players, as well as a perspective on market demand, adoption, and usage of specialized asset management systems. This perspective allows a larger content management vendor to determine whether to build its own specialized functionality, buy a smaller vendor, or maintain the status quo and continue to partner.

Product Convergence

New and complex content management needs have created a fragmentation of tools for managing traditional and rich content. The following section provides an overview of how integration and partnership activity are driving convergence among asset management tools.

Above, we addressed several examples of how tools and technologies for content and asset management have begun to overlap on an informal basis. We will now look at the more formal relationships between large application vendors, as well as smaller vendors offering niche products that are being used for specialized content management applications.

Web Content Management, Document Management, and Digital Asset Management

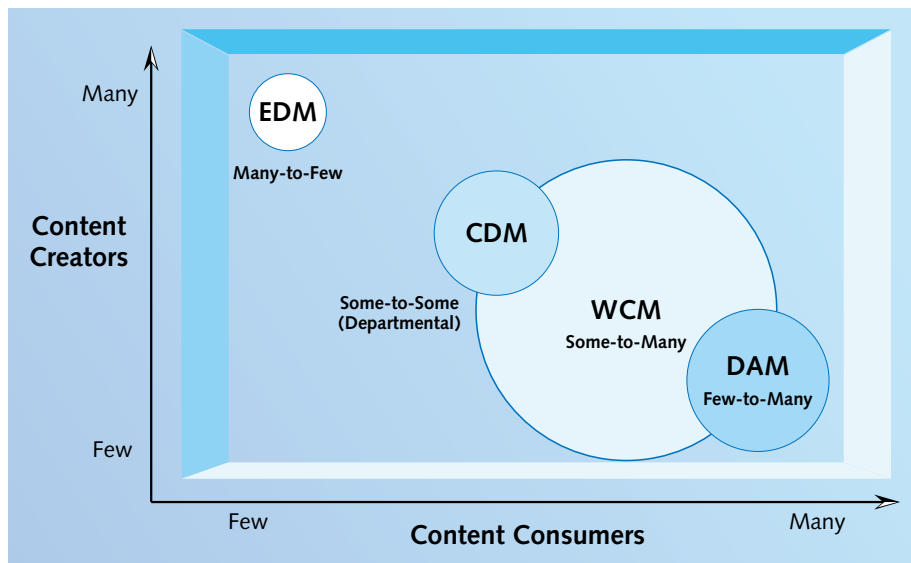
The crux of this Report is the increasing convergence between WCM, DM, and DAM tools. As enterprises become more creative in their use of electronic content, utilize more complex formats, and become more geographically dispersed, their content management needs change. As a result of these more diverse end-user needs, large content management vendors are stretching core competences and expanding their product focus in an attempt to gain the favor, and ultimately the dollars, of enterprise customers. These software vendors are in a precarious situation, as few are particularly healthy, and all are driven by the same motivating force: match product capabilities tit for tat with the competition as a means of capturing a higher percentage of potential customers. Because there is only enough room at the top of the market for a handful of large vendors to compete for ECM revenues, there will almost certainly be further consolidation.

While there is clear product expansion, particularly among WCM, DM, and DAM tools, there remain relatively few implementations that not only are enterprise in scale, but also involve functionality delivered by all three of these categories. Existing vendors, including Documentum and Interwoven, have many customer implementations that utilize the value of WCM or DM, both of which have been proven as valuable enterprise solutions. However, DAM is limited as an enterprise application by its inherent “few-to-many” nature (see Exhibit 3), meaning that it has few specialized creators but many potential consumers. Further, enterprises are finding that they can take a short cut by using specific, but limited, rich media management tools (that lack the workflow of DAM) in conjunction with DM or WCM, instead of rolling out full DAM capabilities. Today, those enterprises that manage traditional documents, Web content, and digital assets or rich media are still doing so through a combination of products and services from multiple vendors.

Exhibit 3 demonstrates how different sets of content creators and content consumers are interacting with specific categories of content management solutions. This graphic helps to illustrate the clear differentiation between the actual end users (both creators and consumers) of the content management solutions that vendors are aggressively attempting to bundle to create ECM. This separation between users and creators is an important differentiation and leads us to believe that ECM is fundamentally a marketing-driven phenomenon that customers don't necessarily understand. In addition to the surface product category synergies, enterprise content management is appealing because providing access to, and management of, any and all content formats is a simple concept, and simple concepts are easier to sell than complex ones. Despite vendors' best attempts, there remains a lack of a clear value statement for corporate ECM use.

Exhibit 3**The Distribution of Content Creators vs. Users Varies According to Product Genre**

Source: the Yankee Group, 2002



Note: Area of circle represents total number of creators and consumers.

Digital Asset Management Blurs the Lines with Video Asset Management

While DAM products were initially developed to help businesses more effectively manage rich media files, more specialized and complex products have since been developed. Focusing entirely on the creation, indexing, management, and distribution aspects of video in particular, a handful of vendors, led by Virage, have developed expertise in managing video-based content. Virage no longer positions itself as a Video Content or Asset Management player, and has moved toward a more solution-specific approach to its products, offering specialized product sets for learning, publishing, Webcasting, and production.

Though Virage currently has relationships with a handful of DAM vendors including Artesia and WebWare, its sales are increasingly coming through direct channels due to its recently repositioned modular approach to the market. Only about 10% of sales come through, or are influenced by, software vendors, while 40% are the result of reseller agreements, and 50% are direct sales. Fewer and fewer customers are asking Virage to integrate with DAM vendors, while the number that are inquiring about integration with content management and portal providers, which offer less specialized products, is on the upswing. The line between DAM and video management tools has become blurred, especially when content management functionality is included as a third-party application or is already in place at a customer site. End users are finding that their content management system, when enhanced by Virage or another video specialist, can handle many of their DAM needs.

DAM and specialized video management tools are disintermediating. However, the still limited demand for highly specialized video management as a stand-alone product within the enterprise market will lead to faster consolidation between these products than between products that serve a broader enterprise need.

Brand Asset Management Is Often Regarded as a Subset of Digital Asset Management

Differentiating clearly between DAM and BAM systems can be difficult. Brand asset management is a specialized subset of digital asset management, with a focus on creative content workflow. Brand asset management should be considered a solution, instead of a platform. Organizations typically purchasing software for BAM from vendors such as Artesia, MediaBin, and WebWare are typically consumer products companies; brand is a major product differentiator for them, and is therefore critical to their overall business.

Companies in the media and entertainment space are well suited to leverage BAM due to their inherently heavy use of rich media, as are advertising and marketing agencies due to the creative project management and distributed workflow approval capabilities of the software. Businesses use BAM solutions to create a stronger brand image and develop more consistent brand messaging. Components of brand asset management include copyright protection, brand abuse protection, campaign management, creative repurposing, and production workflow. When these components work together, it can result in more cohesive creative process and campaign management. Companies such as NameProtect offer BAM tools for brand protection, using image and copyright search engines (in this case, provided by LTU Technologies) to monitor for patent infringement or brand abuse.

Vendors Choose Paths Toward Industry Convergence

There are clear early signs that tools and technologies in the enterprise asset management market are beginning to converge. This blending of solutions is taking place through solutions partnerships, software integration (OEM), and merger and acquisition activity.

ISV and SI Partnerships

The most common strategy for offering comprehensive content management systems is to partner with independent software vendors (ISVs) that offer complementary solutions. Examples of this type of partnership can be found across multiple categories of content and asset management markets. High-end content management vendors such as Documentum, Interwoven, Vignette, and Stellent have relationships with the major corporate portal and e-business software vendors, including IBM, BEA, Citrix, Epicentric, Corechange, and Plumtree. Content management vendors also typically have strategic partnerships with the major search vendors, such as Inktomi and Verity. Other solutions categories that frequently partner with content management vendors include DAM, security tools, and to a lesser extent, collaboration and e-learning tools.

Systems integrators such as Accenture, IBM, and EDS represent another group of partners for asset management vendors, and in many cases represent the single largest sales channel. Artesia, for example, has seen 70% of recent sale activity come through its SI channels and has more than 200 people trained to deliver its solutions. Partners also represent a productive channel for large content management vendors. Sixty-five percent of Documentum's sales are influenced by, and between 20 and 30% are facilitated completely by, partners. Interwoven and Stellent see 75% and 50%, respectively, of sales being influenced by other vendors and systems integrators.

Channel-related sales activity is increasing among content management vendors, and departmental and other smaller implementations are becoming the norm, rather than the exception. Based on these issues, it could be more valuable for vendors to maintain a neutral status and leave integration opportunities open, rather than forcing an "end-to-end" ECM solution upon the relatively few customers that direct sales channels have been able to attract.

Software Integration Activity

Licensing third-party software to strengthen an existing solution is a common occurrence in the content management space. One particularly common weakness of "traditional" content management vendors is their relative inability to offer robust search and retrieval capabilities within their application. As discussed above, the major content management vendors partner with all the leading search vendors, and there is a trend toward the strengthening of relationships between individual vendors. Solution integration is occurring across each product category, as vendors are wary of disqualifying themselves from potential sales before the selection process even begins. However, natural market shakeout has seen several vendors in each category emerge as clear market leaders, putting them in stronger positions from an integration perspective. In these cases, market leaders can be more selective about formal integration relationships, allowing them to gain an advantage through "preferred" status, while remaining open to informal integration with smaller vendors should there be a need.

IBM has used its own kind of integration activity to move into the content management market. With strength in infrastructure, IBM can take advantage of its penetration into the middleware market, its relationship with its Global Services unit, and its influence as a huge technology company to find an array of specialized solutions partners to integrate with its content manager platform. IBM focuses on the cross-industry delivery of media-enabled applications through a single repository. Though its repository is fundamentally a middleware platform with APIs to integrate with an array of applications, IBM should not be forgotten when considering a content management deployment.

Merger and Acquisition Activity

The decline in market valuation and decrease in corporate spending have led several aggressive content management vendors to opt for a quick fix to perceived product weaknesses through acquisition of weaker companies.

There have been several recent examples of merger and acquisition activity in this space, including FileNET's acquisition of Web content management company eGrail; Interwoven's acquisition of XYZFind; Documentum's moves to acquire Bulldog and Boxcar; and divine's acquisition of Eprise and Open Market.

These consolidating events are a clear indicator of the challenges and opportunities within the content management space. Given the crunch in software spending, the segment simply has too many vendors chasing too little available revenue. The ecosystem cannot support the current population, and recent disappointing earnings announcements demonstrate that even the strong are going hungry.

Documentum's acquisition of the technology and customers of DAM vendor Bulldog represents a move that many large content management vendors have considered. Existing Bulldog customers include BBC, Cablevision, Disney, EMI, McDonald's, Microsoft, Sony Electronics, and Sears; and Bulldog adds a platform of ingestion and management of rich media assets to Documentum's 4i Platform for document and Web content management. This functionality puts Documentum in a position to market its product suite as a true ECM solution, as it has helped to label the category.

Cutting the Confusion

While the confusion of market consolidation continues to make headlines, more end-user organizations are coming to the conclusion that they have a need to purchase some type of content management system. Today's purchasers of content management systems must define a business need and ROI justification, and then implement the appropriate supporting technology. This is resulting in smaller software investments focused on the needs of the business unit or department. Vendor pricing structures have been adjusted to suit limited departmental implementations. Therefore, products must be both scalable enough to handle potential enterprise expansion, and flexible enough to handle a variety of business processes and content formats.

Choosing the Correct Content Solution

Content management systems, regardless of how they are built into an organization's business process, can be extremely useful as efficiency tools, a value proposition that is paramount for businesses in today's tight economy. Selecting the solution that is best suited for your organization can be a confusing task, particularly amid today's marketing-driven environment. Beyond choosing the most appropriate software lies another problem, one that enterprises face with any new technology deployment . . . end user adoption. Regardless of how compelling and clear-cut the value proposition for a content management system, the inability to integrate the new solution into the business processes of employees will render what may be a several-hundred-thousand-dollar investment useless.

Solution Category Value Propositions

In all software acquisitions, the business goals and target users must be carefully considered when making buying decisions. Each content management category offers value to the enterprise in different areas.

As described above, document management has bifurcated into two separate categories. **Enterprise Document Management** is a mature business dominated by Documentum and FileNET. EDM is a highly effective solution for securely managing high-value documents through a creation cycle or business process. For example, insurance

companies use FileNET extensively to automate claims processing. In contrast, Documentum developed its initial solution to manage, secure, and track the delivery of FDA pharmaceutical filings. In each case, these automated solutions deliver value by speeding specific business processes, organizing participation, and providing an audit trail for changes and approvals.

Collaborative document management offers a softer value proposition. All organizations realize that valuable document-based information resides on desktops and file servers throughout the enterprise; yet, quantifying the return from systems to facilitate access to this information remains elusive. Reducing the time spent searching for information clearly increases productivity, but how will organizations reap that reward? Can they reduce staff? Will decisions be based on more complete information, reached more quickly, and offering greater business value? In fact, all these are possible.

In CDM, users, primarily knowledge workers, are equal participants in contributing and consuming information, placing additional importance on the user interface and work environment. For this reason, the strongest CDM players today and in the future will be Microsoft and the corporate portal providers. Microsoft has a great advantage in collaborative document management. It can leverage its dominance on the desktop PC and its strength in the departmental server market to establish Sharepoint as a valuable part of the information infrastructure.

Portal providers such as Plumtree, Epicentric, and Corechange deliver the information access platform and other basic content management, information aggregation, and collaboration tools to create an effective knowledge management platform. ROI from these tools may be hard to measure, but improving communication and collaboration within the organization has clear value, which has been demonstrated by the growing adoption of portal platforms.

Web content management delivers value by connecting content creators to the content presentation process. ROI is delivered through a more efficient process, with more reuse and less duplication of content, and with fewer technical resources applied to content editing and updating. In addition, a better, more dynamic Web presence augments Web site ROI, whether that means increased sales, more qualified leads, or simply more sophisticated company branding and awareness. The addition of new output destinations increases the value of the WCM solution by leveraging managed assets into additional channels.

Digital and brand asset management tools offer specialized functionality for enterprises that must manage rich content assets through a production cycle. Marketing-heavy businesses or marketing departments within large-scale enterprises can benefit from the ability of DAM to speed the time-to-market of promotional and branding campaigns that may include creative content for distribution across multiple platforms. In addition to marketing, DAM provides a specialized application for companies in the publishing, media and entertainment, and advertising sectors. Similar to its other asset management cousins, DAM's value proposition is built on the premise of efficiency through repurposing, reuse, and streamlined workflow and approval cycles.

Today, **video asset management** remains a niche application, though it continues to make modest inroads outside its strength among media companies. Many corporate buyers have not seen the value in streaming media as a horizontal, or enterprise, application and thus have not required this specialized software. However, enterprise

streaming media has found a niche in vertical applications such as the presentation of corporate training, communications, and e-learning materials. Organizations are increasingly adding video to their intranets and Web sites, but the use of video is easiest to validate with large, distributed user bases and is therefore less applicable to individual departments than other asset management systems. Excluding activity in the financial services and media and entertainment markets, the modest additions of streaming video to the enterprise have not created the need for dedicated repositories and management tools.

Enterprise content management promises to deliver more value through reduced infrastructure costs while easing the ability to manage additional asset types. An ECM solution can certainly reduce costs, particularly if a legacy document management system already exists in the enterprise. Extending the existing relationship may make sense for many organizations. Yet, as shown above, the objectives and users of each of these software solutions are very different. ECM systems, particularly those that are repository-based, provide most of their value by securing content creation and delivery. The open repository systems deliver value by enabling content access and use. This difference drives the value the organization can hope to reap from an ECM product.

IV. Conclusions

Confusion reigns in the market for enterprise content and asset management software at the moment. The catalyst for this disorder cannot be identified as a single item or event, but rather the collision of several. Analogous to a “perfect storm,” the recent economic downturn, simultaneous explosion of corporate digital content and Web content, and an extremely competitive market filled with similar products each positioned toward corporate CIOs have combined to drive the content management market toward disorder and, ultimately, further consolidation. While consolidation is likely to have greater effect on the DAM space, the vendors likely to emerge from each major product category are those that currently own the market share in the DM category (Documentum, FileNET, iManage, OpenText) and in the WCM category (Documentum, Interwoven, Stellent, Vignette).

Despite the current hyperactivity of the market, it has become clear that many of the more recent sales and implementations are occurring at the business unit and departmental levels, where users are more readily trained and are likely to realize the value of the software more quickly. This rapid time-to-value allows the most effective vendors to extend their solutions to other departments, divisions, and eventually the enterprise.

Realizing that the department does not represent the enterprise is critical to identifying the weakness of the enterprise content management direction. While the development of a consolidated infrastructure to manage some types of content for some business objectives is occurring, large organizations are too diverse to establish a single infrastructure for all types of content. For this reason, the Yankee Group concludes that ECM is a segment of the content management space that will include other complex asset types. While ECM tools can provide CDM capabilities, the CDM segment will remain the domain of the portal and the departmental file server provider. Enterprise search will consolidate access while desktop applications, including the Web browser, will serve as the interface for contributors and consumers of collaborative content.

Overall, the content management segment will remain focused on managing content assets into many channels of delivery. The content management category is evolving into a platform for delivering content-rich applications, yet it derives much of its value from the ability to assure that content is efficiently created, managed, and presented to the user.

Recommendations

Recommendations for Vendors

- Software providers must plan for a world where their applications must connect to any repository and they must define a strategy for creating and managing the required metadata. This solution must embrace, but not necessarily own, complex assets. Vendors should consider partner, buy, and develop decisions based on ROI. Keep in mind that the low price for technology assets will drive more to the “buy” option.
- Focus remains critical. Fire sales tempt the weak to buy outside their competencies and diverge from their product strategy. The complete solution should be focused on the delivered business value, not available technology.
- Market participants must resist the allure of the enterprise content management momentum. While ECM meets the needs of some customers, it is not the only way in which value is derived from content. Vendors whose solutions are not fundamentally based on the secure management of content assets should recognize the opportunity to manage a broader set of asset formats, but not undersell the value of their content management tools or oversell their ECM capabilities. For the next 12 months, this means vendors must maintain a presence in the ECM-orientated purchase cycle, yet continue to sell the fundamental value of their content management solution.

Recommendations for Enterprise Users

- Software acquisitions should be driven by business goals. Business goals, particularly for content applications, are driven by end-user efficiency issues. The buying decision should be based on the needs of the contributors to the content management system with a firm view of the content consumers. ECM may seem an attractive way to organize enterprise content, but the payoff will only come if the enterprise can organize itself to adopt this broad solution.
- Understand the distribution of content creators versus content consumers within the enterprise. Familiarity with these relationships will help you to understand which components of ECM are right for your organization. While it is possible that your organizational requirements are diverse enough to warrant a comprehensive solution, the chances are there exists a specific department or group of users that is driving the need for content management.

- **Start small.** After you have selected the most appropriate solution to meet your content management needs, start with a departmental or line-of-business deployment, before moving ahead with an enterprise-scale deployment. Organizations must realize that an ECM system represents the foundation for many applications moving forward, and should understand that one of the major benefits of all content and asset management systems is that they will generally scale to meet an organization's needs.
- Ensure that your software will accommodate existing employee workflow and business processes. Your content management system should be as small an impediment to user work process as possible, though it is unlikely that any enterprise-scale deployment will go without some level of disruption.
- Enterprise software buyers should carefully consider their needs today and into the future. Buyers must select products not only from vendors that are economically viable, but also from those that share vision and partners. Take into account the openness of the vendor's solutions, and the degree to which they can accommodate XML, Web services, and other evolving technologies.

V. Further Reading

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Convergent Communications Asia-Pacific	Mexico Market Strategies	Wireless/Mobile Services
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