



White Paper

The Agile Business and Its Digital Media Supply Chain

*An Effective Flow of Digital Media Depends
on the Right Management Architecture*

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Executive Summary

Has digital asset management (DAM) “crossed the chasm” from a technology used only by early adopters to one that is more part of the IT mainstream? The broader category of content management technology certainly has. Organizations have devoted considerable time and effort to ensuring that all enterprise information is managed according to how people create, manage, and consume information in the company’s business processes. Content is a high percentage of business-critical information, spanning a broad array of information that includes documents, Web pages, digital assets, and other unstructured and semi-structured information that often makes up as much of 80% of enterprise information.

So as content management has emerged as a key enterprise application, it follows that digital media assets be managed as carefully as other content types. The management of digital media has become a mainstream information technology challenge. To begin with, the definition of digital media has changed and expanded for many enterprises today. In addition to video and audio, digital media includes compound documents such as desktop publishing files and Microsoft Office files such as Word, PowerPoint, and Excel. Digital media represents a significant—and quickly growing—percentage of mission-critical content, so aligning content with business processes means aligning digital media with business processes. As a result, an efficient supply chain of business processes and content demands technology that provides the greatest flexibility in managing digital media assets. Like much of an enterprise’s content, digital media resides in PCs and departmental silos. Unlike other content types, however, digital media has special attributes such as file size and layered complexity that require specialized functions (e.g., transformation). Most content management systems fall short in addressing these specialized demands.

In a number of ways, an effective platform for digital media management differs from a general-purpose content management system. Advanced functionality becomes important because digital media can be costly to produce. Digital media assets such as audio and video are obvious examples of high cost production, but even compound documents such as brochures represent significant investment, not only as a whole, but also in their component parts such as illustrations or photography. Too often, these individual assets are not closely managed after creation, so enterprises can lose them—literally—and lose control over tracking the right versions, approvals, and rights of such expensively created and important assets.

The keys to a successful platform for digital media management include an approach to development based on service-oriented architectures (SOA) and a rich underlying content repository that exposes both the content and its metadata. There is also a need for security controls that protect the assets while allowing flexible, user-friendly, and highly productive workflows and tools to be applied to the assets, while also promoting on-target distribution. A successful platform for digital media management must also provide useful, intuitive interfaces for a variety of users. After all, providing access to digital media has little value if those who create, edit, approve, and use the content are shackled with limitations.

We see in ClearStory’s Enterprise Media Server a platform that supports the development of SOA-based digital media applications that can efficiently support business agility. Because of its J2EE application architecture, Enterprise Media Server can readily be deployed into a wide variety of enterprise-class IT environments, and makes use of current and evolving standards for enterprise deployment, integration, and agility.

The Role of Digital Media in Business Communications

Is digital media content core to business communication today? We think so. Business processes are driven by information, and while digital media assets have perhaps in the past been seen as a specialized area of content management, these assets are in fact critical elements of key activities—including marketing, product development, and customer support, to name a few. So managing the supply chain of this content is becoming an increasing priority for companies across a wide range of industries.

In simple terms, a digital media supply chain is a system that provides the right person with the right content at the right time, within the enterprise itself and outside it, to suppliers, partners, and customers. After years of exponential growth, unstructured information can now represent 80% of an enterprise's information. As a result, enterprises have begun to fully embrace and take on the content management challenge. Companies that leverage collaboration tools, provide information to customers, partners, and employees in timely and relevant ways, and automate core business processes such as information security, distribution, and localization have much more effective supply chains. Faster time-to-market, lower operational costs, improved employee productivity, and quick access to high-quality key content for business planning, production, marketing, and managing can all follow from having content—and notably digital media content—closely tied to these supply chains.

Aligning information systems to core business processes requires content management, yet content is so pervasive in business processes that arguably enterprises need to align content management with all of their core business systems, including manufacturing, supply chain management, customer resource management, and others. In turn, enterprises need to align these core business systems with all of their content, from fixed assets such as scanned documents, to electronic forms and email, to digital media such as image files, audio, video, and compound documents such as brochures and sales materials.

We think this last area, digital media, is especially significant for businesses. In addition to video and audio, digital media includes compound documents such as publishing files like Quark, Adobe, and Illustrator, and Microsoft Office files such as Word and Excel, rich media such as Flash, PowerPoint and other multimedia. Digital media represents a significant—and quickly growing—percentage of mission-critical content. Yet much of this content resides in PCs, Macintoshes, or departmental silos, which create significant operational obstacles for the agile enterprise. Most enterprise applications don't know how to handle digital media files, given that digital media have special attributes that require specialized functionality. Typically, digital media files are big, have layered complexity, and require specialized processing tools—content must be transformed into a useable format for mainstream use.

Simply put, companies looking to create a digital media supply chain need technology that provides the greatest flexibility in managing digital media assets.

We also think digital media is significant because many digital media assets are intrinsically tied to the overall value of an enterprise. In some cases, the digital media assets are themselves the

very products of the enterprise, in such industries as entertainment, publishing, and education. In many other cases, the digital media assets are closely tied to products and are major elements in promoting and reinforcing a company's brand or brands; consider industries such as pharmaceuticals, financial services, and consumer products. In all cases, digital media assets support the core product lines in important ways.

Consider the need for on-demand content in customer communication. At many points in the sales, marketing, and customer support process, prospects and customers must be provided with an array of content. Depending upon the nature of the product and the nature of the customer, this content must often be customized or personalized for the situation. A digital media supply chain is able to provide precisely the right content to the customer when needed.

Digital Media on Demand, In Business Context

Digital media assets such as brochures, advertisements, and direct-mail pieces—not to mention audio and video assets—provide a driving need for additional, specific functionality that will help enterprises maximize their investment in these assets and help individuals be productive.

By having digital media available to both human and machine processes in standard formats that lend themselves to rapid editing, manipulation, transformation, re-assembly, and distribution, the agile enterprise not only makes its mission critical content accessible “on demand,” but also delivers such content in context. In the ideal situation, the enterprise has business processes for both the products it creates and for its efforts to market those products. There is content that supports the product, from research and development all the way through to customer support. Digital media involved in many of the enterprise's business processes have corollaries in basic product development stages as well as customer-focused efforts such as product marketing (*Figure 1*).

This intimate connection between the product and media assets is especially critical in businesses such as consumer products and pharmaceuticals, which depend on global markets and must intensely manage both the product and the associated brand. Bringing a product to market also means bringing a brand to market, and when the markets are global, localization of the content can become a bottleneck before the product is released. And during this process, use of the wrong digital media (or the wrong version of the right digital media) in market entry or regulatory compliance can spell disaster.

Branded digital media content—product collateral, presentations, video, images, and animation—is core to business processes, and critical to sales and marketing success. Yet most companies are ill equipped to enforce controls around this high-value intellectual property.

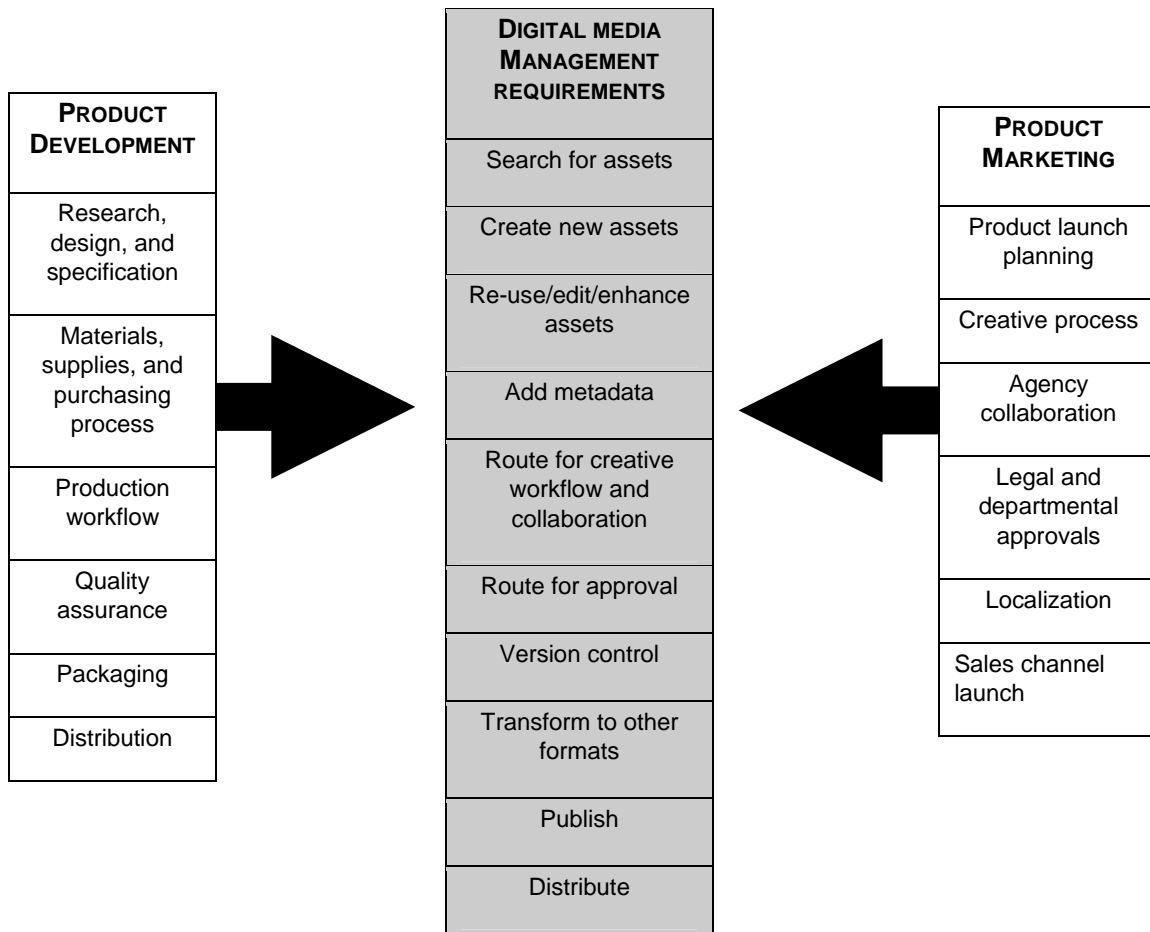


Figure 1. Content involved in many of the enterprise's business processes has corollaries in basic product development manufacturing stages as well as customer-focused effort such as product marketing and branding.

The Role of Digital Media in Marketing Agility

When a company introduces a product to global markets, the associated content must be localized for each market. For many companies, this means taking digital media assets such as ad templates and brochures and localizing them, in operations such as translating the text and including a relevant local photograph. Too often this kind of localization is done by hand, one piece at a time, for market after market. The result is a slow, expensive process, while also being prone to error.

It is far better to undertake this kind of globalization and localization collaboratively and centrally. Rather than deal with content in multiple silos, marketing and brand professionals in each of the local markets can work with a centralized repository of brand and marketing assets that avoids reinventing the proverbial wheel. Efficiencies are derived from a robust digital media management system that enhances collaboration and control, while supporting the full range of content involved in the business processes of the enterprise.

The Agile Business and Its Digital Media Supply Chain

Today's enterprise must do more than make a rich mix of content available when wanted, but also understand how content of all sorts can be managed to support the business processes of the enterprise itself. For example, an industrial supplier may be in the business of selling hundreds of thousands of products that are almost always supported by content, including rich content assets such as brochures, spreadsheets, and other marketing collateral. This content not only needs to be accessed at many points in the marketing, sales, and support cycle for direct customers. The successful industrial supplier likely requires this content to be easily and reliably available to the distributors and resellers it heavily relies upon. The content management need is also strong in the other direction as well: Manufacturers of products sold through industrial suppliers are creating and controlling their own sales literature, data sheets, technical articles and papers, and other compound documents and multimedia.

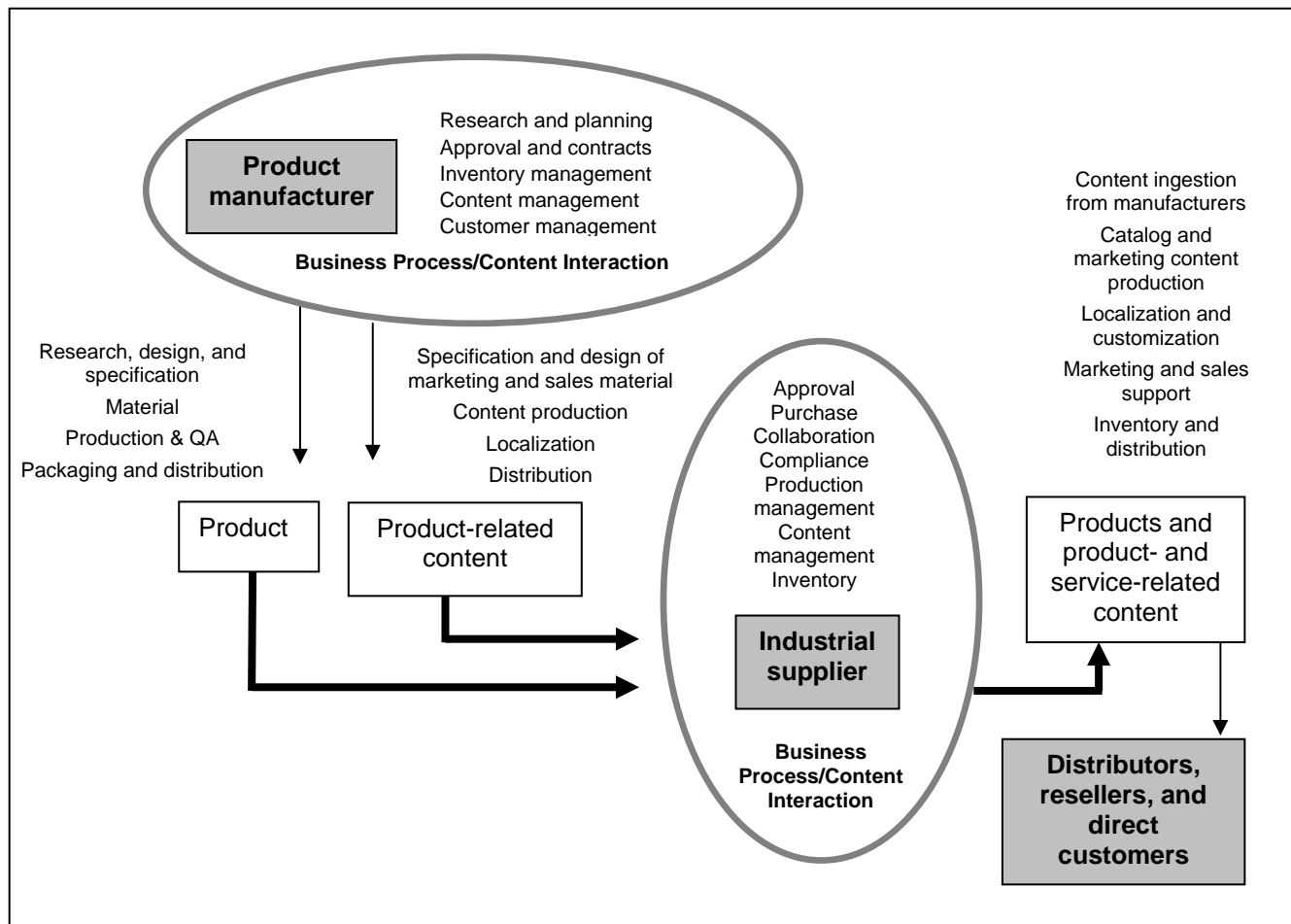


Figure 2. In agile enterprises, there are often numerous and complex content creation and use cycles that reflect the full scope of the enterprises business processes and the collaboration such processes demand.

Indeed, manufacturing and service companies alike often sell through complex, multi-tiered networks of distributors, brokers, resellers, and retailers. In these cases, it is crucial for the enterprise to dynamically produce, update, and distribute catalogs and other marketing materials, and often on a global basis. Product updates, which may include new features to an existing product line, also need related marketing material ready as soon as possible. What this means, in practical terms, is that many different people, with different jobs and responsibilities, need to be able to find, create, edit, review, and approve content and the related business processes the digital media may feed (*Figure 2*). At the same time, there is a critical need on the customer side, which is that customers should have a consistent experience with a company's brands and products. For example, the same photo a customer sees in the print catalog should appear online and at the point of sale.

Digital media services platforms must therefore be able to support many different users and many different interfaces. An update to a product line might need to be reflected in several different print products, various web sites and other online campaigns, and even in multimedia materials such as radio and television commercials. Consider, too, the collaboration needed within highly regulated industries that require rapid approval of materials, tight control over usage of the content, and easy and reliable content updating. One simple example: Pharmaceutical companies can only use the word "new" in product marketing materials for a period of time not to exceed six months, and past that time, the word must be stricken from all related content. How does a pharmaceutical company reliably locate and rapidly update marketing materials for products that are no longer "new"?

The Use of Digital Media Spans Industry Segments

The digital media supply chain applies across many industries, including those as diverse as pharmaceutical and healthcare, manufacturing, financial services, educational institutions, and entertainment.

Pharmaceutical/Health Care

For a leading global pharmaceutical firm, branded digital media content—product documents, marketing materials, ads, graphics, presentations, video—is core to business process and critical to marketing success. Yet like most companies, the company was ill equipped to manage this high-value intellectual property. Often this content resided in departmental silos around the globe—making it nearly impossible to maximize the digital media's value. What's more, creation and distribution costs were high, collaboration among geographically dispersed teams was difficult, and access to current materials by remote sales teams a challenge.

To solve its global marketing challenges, the pharmaceutical giant looked at document management systems and other ECM solutions. But these systems were not designed to support digital media files, which are relatively complex, typically large, and have multifaceted metadata requirements. In addition, because of digital media's layered complexity (i.e. PowerPoint or InDesign files), certain additional functionality is needed to work with files and their subcomponents.

To manage the supply chain of its brand-marketing content, this company implemented a digital media services platform that centralizes branded digital media and delivers it on demand to cross-

functional teams. In addition to superceding silos of content, the digital media management platform provides a common workspace for product launch activities that can include the creation of materials, collaboration, review and approval among brand teams, procurement of print materials, and delivery of final media files to remote country managers and sales teams.

The system is designed to handle the often very large digital media files, offering such functionality as network-friendly browsing of thumbnails, automatic transformation to the right rendition for business use upon download, and optimal performance in supporting over 2300 diverse users. Such users include marketing team members, legal staff, global business units, creative agencies, joint venture partners, and print houses that—day or night, in over 70 countries—find themselves working with a wide range of marketing materials. With a digital media management solution, greater business agility and faster time to market became a reality, with, for example, an overseas ad agency now able to download the actual production file for repurpose in other markets—changing just the text and a few cultural images for extremely cost-effective localization, even while the system also automatically creates and manages renditions of an asset, such as low-resolution jpegs for presentations and high-resolution .eps files for production printing.

The result is better brand control with effective version control, rights management, and localization. The management of regulatory compliance is also improved with automated review and approval processes, and the pharmaceutical firm can enforce rules that only the most current, approved content is distributed.

Manufacturing

A leading-brand North American flooring manufacturer needed a solution for improving the effectiveness of its distributors and 16,000 retailers, while seeking to improve on its significant investment in market research, positioning, brand messaging, and advertising. Originally seeking a point solution for dynamic, template-driven ad creation, the company quickly saw the need for a broader digital media platform to drive its marketing communications supply chain.

The company was heavily reliant on its outsourced advertising and marketing services firms, even while facing the challenges of supporting requests from distributors and magazine editors for its trend-setting room scenes depicting the interior design value of high-quality flooring materials. In addition, distributors did not have easy access to the full range of marketing and advertising support materials, with the fulfillment of these requests a costly and time consuming process. The manufacturer's lack of agility prevented timely response to media opportunities and regional distribution advertising goals.

By implementing a marketing services platform, the company has derived greater value from its digital media investments by better integrating this content into its overall business processes. The company's public relations teams have a solution for distributing product photos and room scenes to design, home improvement, and consumer magazines for tight-deadline editorial opportunities, and now are able to instantly fulfill these requests by emailing secure links to images and captions directly to editors who can download high resolution images for their print publications or low resolution for web publishing. Marketing teams can shorten agency project cycles through a collaborative workspace for review and approval of works in progress. Distributors and retailers have self-service access to current sales collateral, commercial videos, promotional and point-of-

sale material, improving the effectiveness of independent sales organizations by ensuring correct messaging and protecting the integrity of the company's careful brand investments. With decreased reliance on outside firms for managing their digital media, the company has reduced outsourcing costs.

Overall, the enterprise now saves hundreds of employee hours and thousands of dollars per year by better managing the consumption of digital media and its associated workflow.

Media and Entertainment

Entertainment marketing was once simple—a theatrical release was promoted before it went to theaters to drive ticket sales, and then the movie was marketed for home entertainment. Today, the marketing organizations for media and entertainment companies have to react very quickly within a far more complex environment: the marketing for a poorly performing theatrical release may shift to home entertainment faster in order to reduce word of mouth or unfavorable reviews, while the marketing for a blockbuster moves fast and hard, with Internet advertising, cross-promotion, and interactive marketing.

To accommodate this marketing complexity, creative content needs to be shared very quickly across several lines of business, with content being repurposed across many marketing channels. In addition, complex digital media content needs to be moved around the world to distribution partners and for cross-promotional program participants.

The home entertainment division of a major studio found itself needing to react quickly to new demands in the face of a number of marketing issues such as shrinking windows of time before commercial launch, new and expanding video formats here and abroad, and a catalog of releases that was growing exponentially. The division needed to exploit its library of creative and marketing content across all of its departments' marketing efforts, in order to support its endeavors more quickly and more cost effectively.

The division did not have a single global library of creative assets. Local libraries were kept with vendors, agencies, and packaging companies, and there was no framework for consistent branding and quality assurance. The group also suffered from disproportionate reliance on external vendors to manage all of this critical intellectual property, and simply moving large digital media files resulted in high shipping and courier costs.

By adopting a digital media services platform, critical lines of business gained greater agility and overcame many of the marketing operational challenges they faced in today's changing entertainment market. The platform manages over 43,000 marketing assets, including packaging, photography, outdoor ads, character art, disc art, banners, point-of-sale displays, TV spots, movie trailers, production notes, and legal documents. Theatrical release materials are now automatically available for other lines of business within the overall studio, providing a compressed timeframe for releases globally. Assets are being used across the several lines of business, allowing the company to better exploit its creative content, with repurposing that has lowered costs and accelerated time to market.

Supporting the Digital Media Supply Chain with Digital Media Management

Content management technology is commonly defined as providing critical functions at three process stages:

- **CREATE:** When the content is initially being created or otherwise brought into the system
- **MANAGE:** While the content is being stored, modified, enhanced, and otherwise managed during its lifecycle
- **DISTRIBUTE:** When the content is distributed, in many forms—both to audiences of users and to other systems and processes

Traditionally, digital media management technology stores assets in standard formats that lend themselves to search, selection, editing, manipulation, transformation, re-assembly, and distribution. The requirements of digital asset management and business process management are best supported with the technology platform that offers particularly strong features in the following areas:

- ❑ **Metadata and taxonomy**, because appropriate, flexible, well defined descriptions of content are crucial to accessibility and delivery of the media and integration with other applications and business processes
- ❑ **Collaboration framework**, because so many content tasks are collaborative
- ❑ **Flexible security**, because digital media spans traditional business boundaries and often involves valuable, proprietary assets
- ❑ **Dynamic media conversion**, because digital assets require so many formats for storage, management, distribution, and use
- ❑ **Support for many user applications**, because different business processes and the personnel involved in them bring different roles, experience, and capabilities to content tasks

Metadata and Taxonomy

Metadata, or what people commonly think about as “data about the content,” is often applied and managed at each of the stages of content management. Authors can add metadata manually, and some metadata can be added automatically when the content is first ingested, while it is under management, or as it is being distributed.

Why is metadata so important? *It is critical to recognize that content management technology interfaces with both humans and with other systems.* The metadata plays a key role in helping both humans and other systems interface with the content because the digital media assets themselves

are often stored in opaque, binary formats. Metadata is important because it defines how an asset is or will be used or consumed. The way the content is to be used matters as much as the content itself.

For example, many business processes require content to be opened and read by users based on their access privileges. Large enterprises have hundreds of business processes, and the touch-points for content sharing number in the thousands. The right content management technology will facilitate business-related transactions at each of these touch-points, making process-critical content readily available, only to users who should access it. Content must be provided in a standardized form so that it can readily be used by any number of software applications. When the content is richly described with metadata, each application can find and act on the content in the right ways.

An enterprise's agility is best served when it can quickly and easily develop applications that support its critical business processes. The most useful applications can be built when the digital media management platform exposes the functions, the content objects, and a rich array of metadata that can support numerous interfaces and workflows while enabling a robust and flexible security model.

Providing digital media objects through these many kinds of user interfaces is not simply a matter of delivering the content object to the application in a recognized MIME type. At a minimum, the content object must be managed in close association with critical metadata, including, of course, the kinds of fields that enable ongoing use and searching, such as the title and subject of the material. To enable the kinds of collaboration necessary in digital media applications, the metadata should also define the asset's appropriate use and its current "state" in a loosely coupled workflow.

It is no surprise then that content management vendors argue that the richer and more comprehensive the metadata support, the more useful the platform is, and the better the applications that can be built upon it. For example, a platform that exposes content objects as well as the security and workflow metadata associated with them can readily support applications such as secure distribution, syndication, and collaboration. While many content management vendors will agree on the importance of metadata, not all may agree with the conclusion that metadata drives content workflows, and in doing so, plays a fundamental role in binding content objects and their associated metadata to broader business applications.

Connecting content management to business process management uses metadata as the key to such binding and integration, and this is especially true for digital media management. Where textual content objects more readily benefit from text search technologies that assist search and retrieval, many rich content objects either do not have the textual basis or the text is trapped in opaque, binary format unreachable by search engines. Thus, descriptive, workflow-related, and state-specific metadata remains the essential glue for binding digital media objects to other business processes.

Collaboration Framework

Consider the workflow around a compound document, such as a sales brochure. The brochure may well include several photos and illustrations that need to be separately created, edited, touched up, and approved. A flexible digital media management system should provide automation in

managing the media from the time it is created to when it is packaged and delivered. It should also allow for tools such as shared folders that collaborators can access, workflow support such as asset approval and routing, and powerful search features so that assets can be readily found and acted on. A photo retoucher, for example, should be able to log on to the system, immediately access the work in progress, perform the creative work, and then rest assured that the system will forward the results of the work to an approver or publisher through a ready mechanism such as notification from the system or email.

Flexible Security

Flexibility actually assumes two important underlying elements—sufficient metadata to support such access and workflow, and *a security model that allows this kind of flexibility while also protecting assets from unauthorized users*. Each user must be able to access the right content with appropriate restrictions and permissions. Such access and protection ultimately requires control at the asset level, which presumes again that there is sufficient metadata about the asset to enable the correct access and protection.

Traditionally, security has been cumbersome with some digital media management systems, leaving organizations with a lot of administrative overhead and the inability to scale. This points again to the role of on-demand digital media and the growing necessity for service-oriented architectures in content management. When a platform exposes a discrete content management function—for instance, allowing a user to “read” a given asset—and makes it available through a service-oriented architecture, useful applications can be built. Take this a step further, where the platform exposes both this kind of function—and the content and appropriate metadata—and enterprises can develop even more useful applications.

Dynamic Media Conversion

Terms like “content on demand” or “digital media on demand” are useful ones, but the more important point is that the digital media management platform needs to be able to provide ready access to dynamic content throughout all business processes, especially during marketing, sales, and customer support, and the underlying features and functionality of the platform itself. Part of making content available “on demand” is making it available in the many formats that are appropriate for the end users’ roles and tasks and actions.

Supports Many User Applications

The key to making digital media management flexible enough to drive a digital media supply chain is a platform that enables many different users ready access to rich content based on their role within the supply chain or the media applications they use for their job. Moreover, it's key that the technologies support these many different users accessing content through a wide variety of user interfaces and application use contexts. Such is the nature of the kind of collaboration that goes on in content-intensive applications. Users may access content through client applications, browser interfaces, through search engines and portal applications, and even through dedicated production and publishing systems.

The Agile Business and Its Digital Media Supply Chain

Enterprises need access to the digital media objects and the associated metadata through a flexible, open standards-based platform upon which they can develop the kinds of applications that will help automate and enhance critical business processes using that content. The key to success is comprehensive adoption of SOA. Such an adoption facilitates integration of a digital media platform with many incumbent or legacy applications that are used to facilitate current and ongoing business operations. Service-oriented architecture is all about saving significant time and money on the implementation side, while also accelerating the availability of new applications that can drive business and create significant cost savings.

Service-Oriented Architecture and Digital Media Management

Addressing application and process integration barriers is an ongoing issue for many IT organizations. A relatively recent approach to getting multiple software applications and technology platforms to work together provides a highly efficient aggregate system that delivers precise capabilities to a business operation while remaining flexible and preserving investments in technology. Referred to as Service-Oriented Architectures (SOAs), such applications are built on top of core technology platforms where individual software functions are addressable by many other applications.

Businesses once relied on mainframe applications and inherent “stove-piping” or “information silos” that resulted from the separate applications. Expensive custom development was not able to push integration forward significantly. As enterprises turned to client-server architecture, partial progress was made in integrating applications through enterprise application integration (EAI), enterprise content management (ECM), point-to-point, and other strategies, but significant limitations for integrating information among critical business applications remained. An important development was, of course, the pervasive adoption of the Internet as a common network, which lead to content sharing platforms such as portals, although getting content in and out of applications that addressed different business processes still remains a stumbling block for many CM platform vendors. Today, the twin pressures of supporting ever more and richer content types while ensuring platforms conform to standard programming methodologies—namely, J2EE and .NET—are felt by virtually all CM platform vendors.

The rise of SOAs is a significant advance: the notion of software where a function such as “*find document like...*” is addressable as a “service” through standard protocols such as SOAP (Simple Object Access Protocol). SOAs facilitate applications that use common standards to talk to other applications (*Figure 3*).

Service-oriented architectures enable dissimilar systems to interoperate more easily and cost effectively than earlier and more tightly coupled approaches. With the SOA approach providing an easy and consistent means of passing data between applications, it remains necessary to integrate content-format specific applications to alter the content format. The abstraction layer significantly lowers connectivity barriers by presenting the means to let different applications know about and act on available services.

Virtually all of the content management vendors have announced support for SOA, but enterprises are recognizing that this is not a checklist item. Rather, the vendor’s support for SOA must be examined closely.

The Agile Business and Its Digital Media Supply Chain

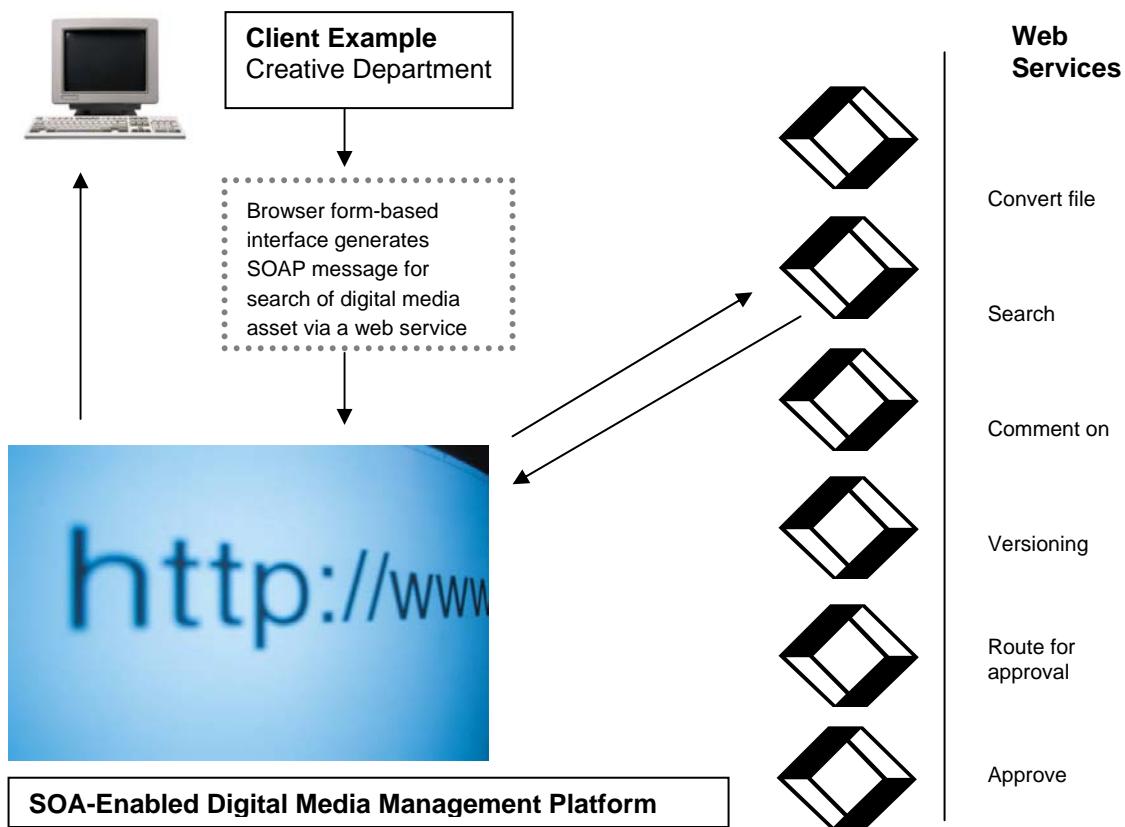


Figure 3. Web services allow digital media to become available on-demand to other enterprise applications.

SOA Success Factors: Modular Architecture is Key

Vendors are quick to claim support of such an approach, and vendor marketing literature is replete with the right acronyms from SOAP, WSDL, and UDDI, to J2EE and .NET. What constitutes a true adoption of an SOA approach? It is worth the buyer's time to determine whether a content management platform has the right level of SOA support.

In looking at how truly and how richly a given content management system supports SOA application development, the potential buyer does need to look at certain technical aspects of the platform. These include the nature of the programming interfaces supplied with the platform as well as how programmers are supported in developing applications for user interfaces such as browsers. (For purposes of this discussion we will use Java and the J2EE platform for examples, but the examples apply equally to .NET.)

Many content management systems were designed and built before Java was a dominant programming language. It is important to note that content management systems have always been designed in such a way so that programmers can extend them, typically through application programming interfaces (APIs). The earliest APIs were often proprietary, allowing programmers to use only selected programming languages and work with specific and arcane program calls and

functions. The marketplace soon demanded standardization of such APIs, and vendors responded by adopting *de facto* standards such as CORBA and COM.

Over time, the market moved to SOAs, and newer platforms are increasingly being built as “pure” Java, where all the underlying code is written in Java and programming interfaces use standard calls and methods in a way that all Java programmers are coming to understand. This leads to several key advantages, including:

1. Modular architecture leads to distributed applications, taking advantage of the Web and inherent cost-savings in easier implementation and maintenance and support
2. Key functionality such as security, metadata management, and compliance can be more easily added for more flexible use
3. Open, common, and robust APIs will reduce costs, increase functionality, and expand flexibility of platforms

Key Consideration: True Java API?

A key question buyers should ask: To what extent do the content management platform and its many programming interfaces conform to Java? For example, can a programmer accomplish certain tasks—such as requesting the platform to provide the latest version of an asset for viewing or editing—in a straightforward manner? An older platform that is not pure J2EE may have the programmer integrate with a “wrapper” application or servlet that does the heavy lifting of connecting to the legacy, non-Java platform. While this wrapper application provides the programmer a seemingly ready means of integrating with the content management platform, it may not provide the specific points of integration that he or she actually requires. The programmer may only have one way of requesting the document and may have to write a cumbersome workaround. In addition, will this programmer gain the benefits of writing open reusable modules of code? Moreover, the wrapper application itself represents a proprietary technology, putting the programmer in the position of dealing with or writing proprietary code.

Some older platforms might also require the programmer to interface with the content management platform through so-called “low level” or proprietary interfaces. Such an approach may require more effort, with the programmer having to use specialized entry points to the platform and proprietary functions and calls to tease out the necessary information and then act on it. In such instances, the programmer may well develop a Java servlet specifically to function as this interface; the servlet would necessarily embed very detailed knowledge of the legacy system. But here again, the enterprise is put in the position of writing proprietary code.

The clear preference would be to allow the programmer to interface with a true Java API and not go through either of these intervening technologies. A newer content management platform, with native Java interfaces, provides a more efficient means for developing the programming interfaces.

Key Consideration: What Can Developers Create with the Platform?

All of this technical detail is useful, but the real test of a digital media platform is its flexibility in supporting developers. Can developers create functional digital media applications that support users at their point of interaction with digital assets? If the goal is a digital media supply chain,

does the platform allow developers to rapidly deploy interfaces and applications that provide the right person with the right content at the right time? At the end of the day, a digital media platform will succeed if it efficiently and economically supports users engaged in essential business functions—product development, marketing, sales, customer support. This kind of efficient interface and application development can best be done on a scalable enterprise-class digital media platform that fully embraces open standards for software development and integration.

The ClearStory Solution

We see in the ClearStory Enterprise Media Server (EMS) offer a platform for the development of SOA-based digital media applications that can efficiently enable business agility. Enterprise Media Server (EMS) is a pure J2EE platform that supports a wide range of application servers and databases to allow it to be readily deployed into a wide variety of enterprise-class IT environments.

With a well-documented Java SDK and a SOAP Web Services Interface, EMS delivers a full and extendable complement of digital media services through a highly scalable Services Oriented Architecture for both Java and .NET environments in both centralized and distributed IT infrastructures. The architecture of EMS enables integrators to quickly integrate new media processing tools (to support new or additional file formats or media handling requirements) as well as to define specific file manipulations and procedures that ensure that key content is available in the right format, at the right time, and to the right people to maximize business productivity.

In particular, the ClearStory offering provides a flexible platform to meet the heterogeneous IT and business requirements for a digital media supply chain:

1. The kind of robust metadata support to model many kinds of assets involved in many kinds of workflows and business applications
2. An asset-level security model to support collaboration both inside and outside the firewall.
3. Dynamic media conversion to enable both high-volume batch-processing and the specialized requirements of various users' access to content through many kinds of user interfaces.

In addition to these important features, the real differentiation of the EMS platform may be its highly modular framework. An example of this modularity is in how the ClearStory offer has decoupled its own graphical user interface from the underlying platform. Because the platform's underlying functions are all addressable through standard Java programming interfaces, the implementing organizations can use the GUI provided with the product or straightforwardly develop other GUIs for specific users and business functions.

Together, these qualities of EMS make it an excellent fit for organizations that manage digital media assets and need to integrate these assets with complex, changing business processes in a digital media supply chain. With an underlying digital media services platform such as EMS, companies can better leverage digital media investments by better integrating this content into its overall business processes. With a contemporary digital media management solution, the outcome is greater business agility and faster time to market

Sponsoring Company Information

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