

Dynamic Content Software Strategies Consulting Service

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Extending across the Organization: Reuse and Collaboration with XML-based Content

Introduction

The benefits of XML and its ability to support a robust reuse model for content management are increasingly becoming understood. Indeed, this is where many organizations have gained significant return on investment (ROI) on content management initiatives. Yet component-level management of XML content is only now becoming as equally widespread: moving from a specialized need within a single department toward cross-function use in many organizations. Historically, this slow growth has been tied to cost and complexity; only the most demanding needs could justify its use. A closer look at the situation today, however, shows that many of the impediments to growth are being overcome. Technology for XML content creation, management, and collaboration maps well to the growing demands in the marketplace. The time seems right for organizations to invest more heavily in this core architecture for a larger variety of document requirements.

The Power of XML Content

While some may believe it to be over-hyped, XML has indeed established itself as a cornerstone enterprise technology. XML is essential to Web services-based architectures such as .NET and J2EE, and software professionals use XML for routine functions such as database integration and access, and messaging. XML is a featured element of platforms from companies like Sun, Oracle, IBM, and Microsoft.

Although a great deal of emphasis is placed on XML as an information exchange format, XML has gained traction in the arena where some of the first implementations took place—content management. While there have been systems that manage XML content (and before that SGML), the greater number of content management deployments have been focused solely on building and supporting Web sites. These typically manage HTML content, often in relational databases, some kind of object store, or file systems. As a result, XML was rarely at the core of such implementations.

Nevertheless, the content management market has a new focus on XML, with existing vendors adding XML features, and vendors with XML-centric approaches bolstering their offerings as they gain ground. Why? The overarching business justification for XML is practical as well as profound. Organizations that use XML to store enterprise content at a granular level are able to *reuse* those content components to save money, improve organizational efficiency, increase product and customer service quality, and more nimbly move into new markets and opportunities. The power of XML is represented in

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the benefit of reuse and delivery of information to multiple users and multiple touch points. In this analysis report, we look at LightSpeed Software content management applications and tools as a good example of how organizations are using XML for its maximum advantage.

The Demand for XML Content

The increasing focus on XML content is fueled by a number of interrelated factors that continue to drive demand. As organizations implement content management applications, they see XML addressing several key requirements for content and collaboration, including:

- The growing and expected need to deliver many types of information to print, Web, PDAs, and other devices—getting the right information to the right user at the right time.
- The need to support users who are often distant from, or loosely coupled with, content repositories.
- The need to effectively balance security and access when it comes to content management and collaboration. Users need to be authenticated, and their access to content must be controlled based on their role. Not only are some users remote, but they also have multiple and various roles—author in some cases, reviewer in other cases, consumer in others, and so on.
- The need to support content management for a wide variety of document types, and not just a single class of documents.

Benefits of Managing XML Content

To meet the demand of growing market pressures, organizations are realizing the value that lies in their enterprise content and the business benefits of managing that content on a more granular or component level. XML collaboration and content reuse do in fact produce quantifiable benefits. As XML content management and authoring tools have improved, enterprises are adapting the tools and processes to business requirements such as improving the product lifecycle, increasing customer service responsiveness and quality, responding to and entering new markets, and increasing overall efficiency and productivity.

To realize the true benefits of XML content, it needs to be under management at a component level. The notion of single-source publishing is no longer visionary, but increasingly mandatory.

- *The key is reuse, and reuse is best achieved when content is managed at a component level.*

Managing content at a document level is necessary, but not always sufficient. The key to successful reuse is to manage content at a granular level where components of content can be liberally shared, reviewed, and updated independently, or combined together and compiled into different aggregations and collections. The benefits of reuse are soon realized when content managed at a component level is updated: the revision is made once to the source content and automatically extended to the many documents that share that content. Reuse comes not only from versioning, but also from making use of the content itself and the associated metadata. In XML terms, this comes from effective management of the element structure and the attributes. With such component management, the content can be reused efficiently and accurately. The more information a system knows about the components, the greater the ability to reuse.

- *Reuse results in flexibility, and a flexible business is a successful business.*

Organizations face many different pressures that are mitigated by a flexible content infrastructure. The company with regulatory pressures will be more responsive to government sponsors and overseers. The R&D organization will be able to speed time to market. The product company with a complex catalog will be more flexible when the catalog content is under management. In addition, all kinds of organizations can benefit from having a single source for creating, updating, and managing their

content. Simply stated, organizations need to be responsive to the needs of their information consumers, providing what they want, when they want it, in the format best suited for the task at hand.

- *Reuse best supports multi-channel publishing, a core requirement among today's demanding information needs.*

Organizations need to deliver content to multiple touchpoints, and these touchpoints require flexible output in many forms. This means true multi-channel delivery, including print, Web, and wireless. While Web content management systems often solved Web delivery, content management for print output—still a core requirement in all businesses—often languished. Reuse gives organizations a flexible way to assemble documents, Web pages, and other content products. A content management system with reusable components and a solid *document assembly* tool can easily be configured to push print, PDF, XML, HTML—whatever format an organization requires.

- *Reuse scales when supported in a robust XML-aware repository.*

While organizations can successfully use XML in ad hoc applications and with loose aggregations of content, XML-based content management works best when the content is managed in an XML-aware repository. To begin with, organizations want the benefits of a well-managed content repository, with features such as security, logging, and rollback. The XML content itself, and the ability for reuse, is enhanced when the repository can deal natively with the XML structures.

- *Ultimately, the user-facing tools and workflow engine are fueled by reuse.*

In other words, reuse is really the means to an end. The desired result is improved quality and speed of information delivery. That puts workflow at the heart of the solution. Workflow is made dramatically more flexible and the reuse more effective when the starting point of the system is based on the highly granular management of content. In other words, businesses must make it easy for users to find, select, and incorporate information.

In short, to realize the true benefits of XML, organizations need to determine their most valuable content assets and where they live, bring the content under management at a component level, and make it available for reuse in a distributed environment where many parties can act on it. The notion of single-source publishing is no longer just visionary, but increasingly mandatory. Organizations would be wise to:

- Understand where content assets live, what forms they are in, and in what kind of systems they reside. This includes content in databases, file servers, desktops, legacy document management systems, and portals.
- Put the highly valuable and long-lived content under control and migrate it to an XML-smart repository.

Once valuable content assets are managed in a component-level repository, they can be accessed and shared in a distributed environment with necessary security, authentication, and workflow. Finally, to leverage reuse, a robust document assembly tool is required. The tool must enable users to search against all content sources living in an enterprise, view it, assemble unique documents, and distribute these documents to multiple touch-points for consumption.

Technology Meeting Increasingly Complex Business Requirements

The need for reuse needs to be considered against the realities of information technology. In other words, reuse has always been a good idea, but has technology caught up to enable it to happen? The answer seems to be yes, when the right tools and technologies are selected. XML authoring and component-level XML management must be supported by an application framework that:

- Works with contemporary IT architectures (can be integrated in n-tier development, is compatible with application servers, and uses contemporary integration techniques including Web Services.)

- Can integrate assets from several content sources, and can assist the organization in determining what assets can and should be put under control.
- Recognizes that contributors are distributed and have multiple roles (supports users with a Web interface and provides the right level of authority through mechanisms such as single sign-on, supports users with ready access to familiar and appropriate tools for the task they are about to perform, provides a similar user experience regardless of where a given user is accessing content or tools).
- Is browser-based (requires little or no additional tools; plug-ins and controls are installed and updated in ways that are transparent to the user).
- Makes users immediately productive (provides tools that require little or no training, provides familiar tools, and adds value for key functions related to workflow).
- Provides a highly automated and flexible process for document assembly that allows business users to search for, assemble, and publish content assets in multiple formats and to multiple audiences and touchpoints.

Such a system would enable more applications and more users to participate in the creation and use of XML content. The result is a content management and collaboration environment that has “caught up” with the realities of current business objectives and IT.

Making XML Content Collaboration Easier

XML authoring has also been perceived as a stumbling block for more widespread adoption with business users, and authoring has often been reduced to the lowest common denominator tool set. More traditional document management systems relied on dominant word processing applications, while Web content management systems introduced forms-based or “template-based” authoring where text elements would be captured in a form with HTML tagging automatically added to support its eventual Web display. XML authoring was often viewed as too difficult, too expensive, or both.

The reality of XML authoring is in fact quite different, and has been for a number of years. Established XML authoring vendors such as Arbortext (with Epic), Corel (with XMetal), and Adobe (with FrameMaker) have made their products highly extensible and increasingly user-friendly. In addition, these products are now offered at competitive price points. All of these products are highly configurable, enabling organizations to tailor the technology to best fit their needs, for example deploying forms-like interfaces for business users and more document-like interfaces for power users and adding guided editing metaphors to simplify the process of creating structured and attributed content.

There is also a new class of vendors, including Altova, Ektron, and Ephox, who have focused on XML editing within the browser with lightweight controls that can be integrated with content management solutions. For example, Altova’s Authentic or Corel’s XMetal 4 ActiveX plug-in can extend XML authoring into the browser, giving organizations the ability to parse and validate content on the fly as it is contributed and reviewed by a wide range of users. Hosted XML content creation technologies, such as those by Veridocs, are also starting to emerge as alternatives.

On the horizon we also have Microsoft Office System 2003 (Office 11), with Microsoft Word’s enhanced support for XML authoring. It is important to note that Microsoft Word’s future support for XML will not obviate the need for the other tools. There will still be a need for the full-fledged XML editing tool on the one end of the spectrum and the lightweight XML browser controls on the other. Indeed, the growth of products in this area will benefit the enterprises, as they will be able to mix and match the creation and collaboration tools that are most effective for a given process, type of information, task, or user. As these tools become even easier to use and deploy, XML will become more ubiquitous and the value of the data asset will increase incrementally.

LightSpeed Software

San Francisco-based LightSpeed Software, Inc. offers an XML-based content management system, LightSpeed Astoria. LightSpeed Astoria manages the content components in an XML-aware repository, and works with XML authoring tools such as Arbortext EPIC and Altova's Authentic.

LightSpeed Astoria offers core content management services such as support for authoring and workflow, check-in and check-out, versioning, and dynamic assembly and delivery, without requiring a database administrator to set-up or manage on a daily basis. A flexible rules engine manages access to the LightSpeed Astoria repository, providing varying levels of authoring, viewing, and administrator level access. In addition, LightSpeed Software provides solutions that meet the key business requirements we have emphasized in this report including:

- *Flexible assembly and delivery of content components:* LightSpeed Software provides a strong document assembly application module to rapidly assemble and distribute content in multiple formats. LightSpeed Astoria supports dynamic output to print, Web, CD-ROM, and wireless.
- *Extended collaboration:* We like LightSpeed Software's Web-based application module, LightSpeed iREVIEW, which is a collaboration tool that provides a secure, workflow-supported interface to the LightSpeed Astoria repository. LightSpeed iREVIEW is personalized to the individual user, depending on their role(s), and provides a rich set of features for reviews and annotations.
- *Timely access to relevant content:* We are interested in the overlap between LightSpeed Astoria and LightSpeed Knowledge Appliance. LightSpeed Knowledge Appliance provides the ability to search and gather information from within and outside of an enterprise, extracts core concepts from content, and converts it to enriched XML that is made available to feed into search engines, portals, and content repositories. This enriched XML metadata can then be used to enhance search, workflow, and corporate applications.

Texas Instruments: Making the Most of XML Content

Texas Instruments' (TI) recent experience with Astoria speaks directly to how reuse can contribute to an organization's bottom line. TI's product line is supported by product data sheets, highly technical and dense documents that require intensive and iterative creation and review cycles. TI had a growing concern that a lack of automation and an inconsistent workflow were creating inefficiencies in the process.

Engineering management personnel at TI decided to implement a system designed to support information reuse, where the contributors and reviewers would all work from a central repository and make changes on a core set of XML components. TI implemented LightSpeed Astoria, with Corel XMetal as the XML editing interface. The company is also using the LightSpeed iREVIEW application module for collaboration between distributed workgroups. The effects for TI have been positive:

- The company has been able to streamline and better control the authoring and review processes.
- It has been able to create a set of reusable components that support thousands of products.
- It is extending collaboration to seven publications teams and over 1,000 engineers.
- It has begun to reuse its materials in other areas of the business, including marketing.

The upshot for TI has been greater efficiency; the documentation is produced with less effort. Significantly, the engineering personnel who formerly had to devote significant time to cumbersome, one-off review processes now have a single application for content review and collaboration. They are able to quickly access, review, revise, and comment on work in progress. This new efficiency frees them to spend more time on core engineering activities such as product development.

At the end of the day, this kind of efficiency has a tremendous impact on the bottom line. XML makes sense for content management precisely because it supports the kind of granular, flexible, multichannel publishing that allows organizations to be nimble and efficient at a time when they need it most. Efficiency and flexibility are important, but they are not ends in themselves. The real goal for organizations is to make maximum use of all their resources. Organizations are beginning to understand how valuable their content is, and that content under management becomes even more valuable as organizations leverage this content to better their many constituencies. An XML-driven content strategy may be an organization's best path to its highest return on content.

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