Gilbane Beacon
Guidance on Content Strategies, Practices and Technologies

Structured Content for Leadership

Differentiate with Advanced Practices

By Dale Waldt, Contributing Analyst, and Mary Laplante, Senior Analyst

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Leadership and Competitive Advantage

Companies create competitive advantage with technology by building on current practices in ways that others in their industries have yet to discover or implement. They pursue and establish leadership positions by extending existing knowledge into new domains and experimenting with established principles. The rewards for success can be significant, not only in terms of revenues, operational costs or other business measures, but also in terms of new skills, knowledge and expertise that create true competitive advantage and open doors to innovation.

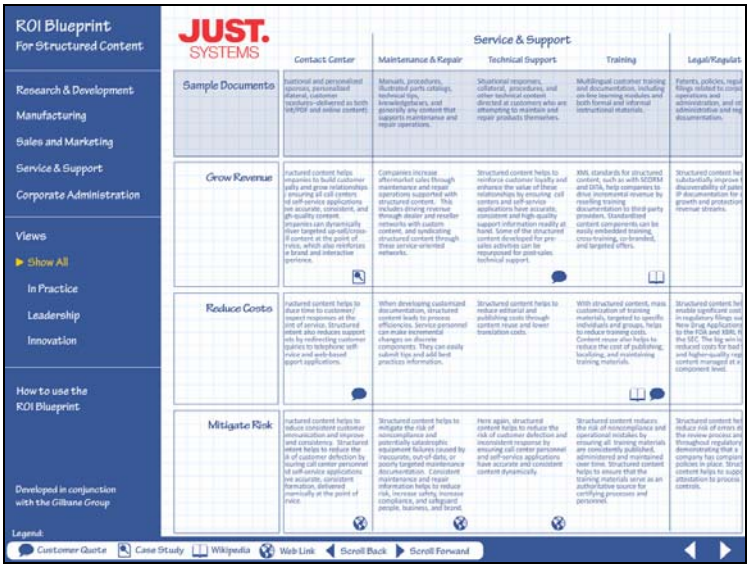
Emerging applications for structured content have the potential to deliver this kind of value to organizations willing to go beyond current practice. Structured content can support a wide range of business activities, from the classic and well understood uses (in areas such as technical documentation) to emerging applications that enable organizations to become leaders in their field. If you already use structured content within your organization, you may be looking for opportunities to advance your current practices to create new value. Which applications are emerging as the next wave of XML adoption? How do they relate to your current implementations and initiatives? Once identified, how can you sell them to management?

In this paper, we look at real examples drawn from companies who are taking a leadership role in defining new approaches and implementing transformational applications of structured content. These examples will illustrate the positive impact on revenue growth, cost reductions, and risk mitigation. The foundation for the discussion is the "Leadership" view of the ROI Blueprint for Structured Content.

The ROI Blueprint for Structured Content

Structured documents are a means to an end. We need a way to link predefined content components to business results. To bridge this gap, JustSystems, with support from the Gilbane Group, has developed the ROI Blueprint for Structured Content. Available in print and online, readers can access the interactive Flash version at http://na.justsystems.com/files/ROI_Blueprint.swf.

Simply put, the ROI Blueprint is a tool for analyzing the business value of structured content. We anticipate that content professionals, information architects, and systems designers will use this blueprint as a guide to examine how heretofore "unstructured" documents affect current activities and business processes.



Five Enterprise Domains: R&D, Manufacturing, Sales & Marketing, Service & Support, Corporate Administration

Three Functional Areas in each, plus sample documents

Three Business Levers: revenue, cost, risk

Three Views: In Practice, Leadership, Innovation

Selling Points for structured content in each cell, plus resources

Refer to the User Guide on "How to Use the ROI Blueprint" for details

The impact of structured content for leadership is well summarized by Bernhard Weichel, Section Manager of Engineering Methods and Tools at Bosch, who notes both short- and long-term benefits to his organization:

> ***In the short-term, we've gained plenty of flexibility and control over the documentation process. In the long-term, XML has changed our way of thinking about efficiency issues and critical business processes.***

Let's focus on how advances in documentation processes can affect business results.

Achieving Leadership with Structured Content

The Grow Revenue Perspective

Our revenue examples focus on applications for structured content within manufacturing operations. Typical documents are process definitions, bills of materials, engineering change notices, documents created from processes such as Six Sigma and Lean Manufacturing, and material safety data sheets. The cell in the ROI Blueprint dealing with this area reads:

> ***Supports agile manufacturing, enabling processes to be captured and automated as structured documents. Such automation reduces the time associated with creating the process instructions and other manufacturing diagrams, accelerating time to market and allowing organizations to capture more revenue and market share.***

The revenue growth scenarios illustrate how structured content can support rapid growth in ways that are far more scalable than traditional unstructured documentation approaches. Structured content allows a company to adopt a single-source publishing model for managing its information.

In this model, a single master source of the information is maintained and repurposed in highly automated ways to produce the multiple versions required to support growth. Accuracy and consistency are improved as well. Also, structured content data models can be based on industry standards, such as DITA (Darwin Information Typing Architecture), which reduce application development time. In short, the structured content approach better enables revenue growth and allows companies to more easily expand product lines and sell into additional markets more efficiently.

Pharmaceutical Product Labeling

By adopting structured content, a pharmaceutical company is able to meet its regulatory requirements more efficiently and grow revenues by entering new markets.

All pharmaceutical products must have a document called the *product label*. Pharmaceutical companies must submit their product labels to the relevant regulatory agencies (such as the FDA in the United States) for review and approval before they can bring their products to market.

While the product labeling information has a prescribed structure, it is different in each market. To market internationally and sell products in different countries, a pharmaceutical company needs to publish the same product information in a number of different ways. Addressing the publishing challenge is fairly complicated. For purposes of brevity, we will simplify the process.

In the US, an XML document model called the *Standard Product Label (SPL)* specifies the format and structure of the label document being submitted to the FDA. Once the SPL documents are approved by the FDA, the content is produced in several forms including the folded-up sheet in the product packaging, the packaging itself, the disclaimer text that accompanies advertisements for the product, and several other versions needed to support the correct use of the product. This information may also be published in electronic form as documents in PDF and Web pages in HTML. In all, there may be dozens of different renditions of the same document, each containing the exact same language about product information but formatted differently and produced for different purposes.

In the European Union countries, the standard is the *Product Information Model (PIM)* document, which is organized as separate documents for each formulation (e.g., tablet, gel capsule, liquid, etc.), as well as for each dosage and package quantity. To add to the complexity, there are several document formats needed for each product, as well as the requirements to publish in more than a dozen languages. In all, a single product may have hundreds of versions of the same information.

Traditionally, these documents were managed as word processing files. A pharmaceutical company that wants to market its product in another jurisdiction creates a separate team working in that region; the team repeats the preparation, review, and reformatting of word processing documents that contain the same information but in the format for that area. This duplication of effort is not scalable and often makes marketing a product across geographic territories cost prohibitive.

Using structured content publishing tools, a pharmaceutical company can create documents and check their completeness against the prescribed document schema more quickly than manually checking word processing files. Creating the different versions of the product label required by different markets, uses, and delivery channels is now automated through data transformation applications that utilize the structured markup to turn it into different forms, including HTML for the Web delivery and PDF for electronic and print publishing. An efficient process for product labeling allows a company to sell into multiple markets more easily and, therefore, grow revenues accordingly.

The Reduce Cost Perspective

Our cost reduction examples are also drawn from manufacturing operations, this time for applications related to operating procedures. Sample documents are policies, procedures, regulatory filings, and manufacturing-related documents created for other regulations. The cell in the ROI Blueprint addressing cost reduction reads:

> ***Reusing content components within structured documents speeds the assembly of SOP and other regulated documents, eliminating duplicate translations of the same content, and reducing the time, cost, and complexity of changes.***

Many companies are beginning to enjoy substantial cost savings throughout their entire information supply chain, including updating, reusing, formatting, translating, and managing the information and processes. Structured content solutions allow information components to more easily travel through internal processes and between partners who provide services or perform important processing or review of the information. These capabilities are consistent with our long-established view that XML content has the potential to be "knit" into a wide variety of operational systems and applications and provide "write once, publish everywhere" functionality.

Software Documentation and Multilingual Publishing

A software firm that is a leader in virtualization solutions is experiencing rapid growth both in the number of licenses sold and the number of products offered in its suite of solutions. In addition, product sales are increasing outside of the US, creating a need to publish larger volumes of complex product documentation in more languages.

The software firm employs an agile manufacturing process, analogous to agile development practices, where components and supporting documentation are reused in new products. The documentation team identified the potential of a similar strategy for agile content; structured content can be easily repurposed for a variety of delivery configurations. The team developed a structured data model based on the DITA standard that enables information to be organized and structured into logical topics. They deployed XML editing tools to create independent topics that can be assembled into the proper configuration to support a specific software product. The topic-oriented content can then be reused for each new product, aligning documentation development with its agile manufacturing philosophy.

Translation from one language to another is an expensive and time-consuming activity that involves quality assurance (QA), project management and coordination of the work, and preparation of each language version into the proper format for that language. The firm implemented a content management system (CMS) to enable the efficient management of structured information components throughout the translation process. For instance, instead of having to translate an entire manual each time it was updated, documentation editors could select for translation only the sections that had been modified, thus reducing total work to be done, related costs, and the amount of time needed to complete the task. Also, once structured, the content can be formatted automatically instead of using slower, more expensive desktop publishing tools.

The Mitigate Risk Perspective

Our risk mitigation examples take us from operations to sales and marketing. Typical documents are proposals, RFP responses, sales collateral, contracts, and other documents created during the sales process. The ROI Blueprint cell reads:

> ***Structured content supports predefined components with the "approved language" and the "standard terms and conditions" for proposals in particular geographies for certain types of customers. Structured content reduces the risk of non-compliance and/or errors by ensuring contracts and other legally binding agreements contain only accurate and current content.***

The risk mitigation examples once again highlight the usefulness of a single source of authoritative structured content. Structured content, managed in the right kind of CMS, and with documented, repeatable workflows and publishing processes, really lends itself to business risk mitigation. In addition to the benefits that derive from rigor, structured content can be more easily integrated with enterprise applications and databases, further reducing business risk by making the information available where it is needed in the suitable format for that use.

Pharmaceutical Product Labeling

In our pharmaceutical example, we discussed how each jurisdiction prescribes a document structure and a set of documents that serve multiple purposes. Structured content, as mentioned earlier, allows the information to be validated against the business rules specific to a jurisdiction and to be checked for completeness, sequence, and other rules prescribed by the regulatory authority.

Each of the consumers of the information may need to access it in different ways. By managing product labels as structured content, the risk to individual consumers can be reduced by publishing the exact information they need in the format best suited for their particular environment.

Lastly, the risk of introducing a new product is reduced through better compliance and lower costs described earlier. Structured content makes it easier to get more products approved for sale.

Software Documentation Example

There are several aspects of risk that can be mitigated through the use of structured content to produce software documentation. One is the legal risk associated with copyright enforcement and boilerplate language that appears in the content. Structured content allows a software firm to manage copyright, patent, and legal information about their products in a CMS system. Also, licensing agreements, contracts, and other important legal documents can be managed in a similar componentized manner.

The ROI Blueprint addresses broad business risk as well as risk related specifically to non-compliance with industry and government mandates. A software provider must meet specific user needs in various markets; otherwise, market entry and penetration are at risk. Variations in cultural and geographic preferences for how the information is presented can be better managed using structured content that is easily transformed into market-specific formats. For instance, the Japanese market is sensitive to the fonts and formatting, page layout, and indexing. Structured content and CMS tools allow the firm to addresses these specific needs and reduce the risk of selling into each market.

Leadership and the ROI Blueprint

The examples above illustrate how the ROI Blueprint can be used to create strategies for building market leadership through the application of structured content technologies. The ROI Blueprint is a good starting point for determining business requirements for content and processes and for developing plans for implementing them.

Advice for Leadership

There are several common threads that run throughout the examples discussed in this paper and highlighted in the ROI Blueprint.

Validation of structure should be designed to support business needs, not be constrained by tool capabilities. If your application requires robust structural validation to support automated processes, we strongly advocate the use a structured editor and CMS repository. Organizations with these requirements are likely to be heavily constrained by unstructured word processors, desktop publishing tools, and other common solutions. Also, effective data modeling that focuses on delivering powerful new functionality is an emerging best practice that engenders leadership.

When planning to implement a structured content solution, look at the broader process and identify enterprise-wide objectives. The need for and interest in structured content creation and management often resides within a single department initially. The content-related work performed within this department is more complex and time-consuming than in other functional areas. But there may be significant benefits related to automated transformation, formatting, and reuse of content elsewhere in the organization that complement the specific challenges of a single department. Strategic plans often require an *enterprise* perspective that may be counterintuitive to *departmental* cost management. During the planning and budget phases, then, consider the Total Cost of Ownership (TCO) for the solution across the organization.

In order to stay competitive in a global market, you need to organize your processes and underlying systems to reduce localization costs. A scalable solution, such as one based on structured content principles, will enable rapid expansion of product lines and their supporting documentation, as well as better address translation and other localization considerations.

A system architecture and well thought-out structured data model will enable flexibility and scalability of your content products and systems. If you have the luxury of starting from scratch, you can create a powerful and extensible platform for content preparation and publishing that will enable, not constrain, growth and cost containment needed to stay competitive in a rapidly changing world. But even existing legacy applications can evolve to adopt structured content approaches to keep the organization competitive.

When planning a structured content solution, you can learn from existing similar solutions. There are many existing examples of leading structured solutions in every vertical industry. The ROI Blueprint is designed to help guide your thinking and planning to meet these challenges.

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