



## **Effective content management with IBM WebSphere Catalog Manager.**



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### Abstract

“In a networked world you cannot operate in a fully decentralized mode. The Net is an integrating medium. It makes it possible—it makes it imperative—to unify processes and information that, in most institutions, were splintered in the rush to decentralization over the last few decades.”

– *Louis V Gerstner, Jr., chairman of the board and CEO, IBM Corporation*

Instantaneous communication and information sharing – between businesses and customers, purchasers and catalogs, or even two or more databases in different software environments on different continents – is the primary force driving the next phase of e-business. Organizations implementing e-business solutions need a clear view of the information that supports their supply and demand chains. Various database implementations, keeping track of customer information, inventory, pricing, delivery and service, make this view possible.

In the e-business environment, transactions happen quickly and customers expect **fast**, full-service delivery and support. For this reason, businesses are rediscovering the importance of content management. Content management provides an efficient process for uniting, coordinating and using all of the essential information that resides in a variety of information systems.

While some vendors have focused on resolving general enterprise content management issues, they have not always met the unique interoperability demands of e-commerce. Solutions built upon IBM WebSphere® Catalog Manager and IBM WebSphere Commerce Suite address content management needs while ensuring interoperability with existing enterprise content management systems. WebSphere Commerce Suite and WebSphere Catalog Manager deliver correct, consistent, timely product information to your employees, customers, trading partners and suppliers.

This paper examines the business issues and explains the technology advances that make this approach critical for a successful e-business implementation.

### Introduction

Successful organizations have built their e-business strategies on a foundation of Web-based applications, as well as highly efficient front-end, back-end and middle-ware applications. These uniquely tailored e-business applications have transformed these enterprises, enabling them to outperform their competition, offer new Web-based products and services, and improve their long-term profitability.

There are many prongs to a successful e-business implementation. Fundamental to them all, however, is the strategy used to manage and share electronic information. You have a variety of database repositories that keep track of inventory, delivery, pricing, customer information and product data. In many instances, these systems have grown up in a pre-Internet world or without considering the implications of an Internet-driven e-business. As a result, these systems are often slow, uncoordinated and ineffective in meeting the challenges of high-volume, high-speed e-commerce.

It's clear that in order to take advantage of the opportunities that the Internet offers and for you to differentiate yourself from the competition, you must effectively create and manage the content found in these various data resources. You need to provide comprehensive, concise and timely information to all of the people in the supply chain – from the back-end user to the customer.

Today, businesses "...are painfully discovering the excessive cost, time and complexity required for extracting, building, assembling, publishing and distributing catalog content," acknowledges the Meta Group in an October 2000 report. "The acquisition and maintenance of electronic catalog content and the ability to offer item cross-referencing are daunting tasks that require users to aggregate thousands of items with different attributes from disparate sources. Ongoing catalog creation (especially) maintenance, printing, and distribution costs, usually accounts for 5 percent to 20 percent of direct sales revenue (specialized distribution). With shortening product cycle times, the need for efficient catalog content management reverts from tactical to enterprise strategic."<sup>1</sup>

The purpose of this paper is to:

- *Provide an overview of business issues around content management in general and catalog content in particular.*
- *Define key characteristics for successful catalog management solutions.*
- *Explain how IBM catalog management solutions can help you aggregate, categorize, manage and maintain Web catalog content.*

### What is content management?

Content management means different things to different people, but industry analysts describe content management according to four categories of data:

- **Enterprise content:** *Managing all internally used data and documents*
- **Web content:** *Publishing information to the Web and managing all content assets used to produce the published information*
- **E-commerce content :** *Capturing business-to-consumer (B2C) and business-to-business (B2B) transactional content for buying or selling, marketing, auditing, personalization, analysis, contracts, RFQs and RFPs*
- **Shared content:** *Exchanging non-transactional collaborative data, like e-mail, reports, invoices and designs*

**“Content management:  
A broad term referring to applica-  
tions and processes to manage  
Web content, document content  
and e-commerce-focused content.”**  
Gartner Group<sup>2</sup>

Of the four categories, the two that are most directly associated with driving revenue are **Web content** and **e-commerce content**. Managing that content effectively will translate directly to a greater return on your investment.

### Why is content management needed?

The main content management challenges facing e-businesses are:

- **Information (business data) is doubling every year.** *As this happens, the ad hoc management of this content creates continuous challenges that are magnified in proportion to the rate of growth. You need to have better control and management of your content in order, for example, to minimize the amount of duplicate data and to improve access to resources that are already available.*
- **The content publishing cycle is too long.** *With no efficient and automated way of updating product information, it may be weeks or months before your users find up-to-date, accurate information.*
- **Enterprises need to maintain multiple editions.** *In a global economy, with users from around the world accessing your catalog online, the ability to present information (like pricing and product descriptions) in multiple languages creates a distinct advantage.*
- **Support is needed for multichannel trading.** *Product information must be shared and standardized to be used among the different enterprise selling and services channels.*
- **Support is needed for multiple output formats** – such as wireless devices. *Your users want to be able to access information through pervasive devices, such as PDAs and cell phones.*

***“As ... Web sites grow and increase in complexity and in the proliferation of content, the cost and degree of difficulty in producing and managing these sites also grow exponentially. Good Web content management tools are absolutely essential to an e-commerce company that wants to maintain high-quality content, protect its brand and avert a major source of errors that can cause disruptions in its ability to conduct business across the Web.”***

IDC

November 2000<sup>3</sup>

- ***Contributions from outside organizations*** are needed. The ability to incorporate updated information from suppliers will lead to a more robust and information-rich e-business, making it an attractive destination for customers.
- Similarly, ***publishing to outside organizations*** is also needed. The ability to provide updated information to your buyers and trading partners will make you that much more valuable in the marketplace.

Today, Web site owners use an assortment of tools and manual processes to create, organize, store, retrieve and distribute online assets. Although many automated tools exist, very few companies adopt them. Instead, they rely on low-cost, single-user alternatives. Subsequently, the content for these organizations often resides in islands of information that can only be reached through a single tool; such information cannot be shared. This often results in duplicate information, which then increases the workload when having to update information in multiple repositories.

The ability to share and manage resources:

- *Reduces unnecessary duplication of data*
- *Lessens the possibility of data corruption due to inconsistent and incomplete synchronization*
- *Provides assurance that critical data will be available for e-business applications*
- *Establishes ownership and controls around the data creation and deployment processes*

An e-commerce system will rightly be the focal point of any e-business. Likewise, a catalog management solution will be the single most important element in any e-commerce system. Starting with electronic catalog management is a viable and recommended approach for addressing content management issues. A complete enterprise content management system might be costly and require the use of significant resources (or even the reengineering of business processes) to implement. A catalog management solution, however, provides crucial product and service information for those essential components of e-business, without demanding a complete restructuring and deployment of new data systems.

As an October 2000 report by the Meta Group predicts, “Catalog content publishing leaders will merge electronic and traditional channels into more cost-effective, efficient and common processes. Users should begin to remap their fragmented catalog creation process...and ready themselves for participation in the digital economy.”<sup>5</sup>

Catalog management provides the comprehensive and accurate product and service information that promotes successful e-business.

Catalog management solutions can be used in a variety of e-business implementations, including:

- **Direct B2C sales:** Provides a range of products and services directly to the consumer.
- **Private electronic procurement systems:** Large enterprises can use catalog management to support procurement and internal manufacturing and servicing operations, with systems that enable the tracking of usage and spending trends. This can streamline costs associated with manufacturing and procurement.
- **B2B transactions:** The catalog management system supports a range of B2B buying and selling that enables the true automation of complex supply chain systems.
- **Multichannel commerce:** The system helps in sharing and standardizing product information presentation among the different enterprise selling and services channels.
- **Supplier enablement:** Catalog management can also help provide access to multiple procurement and e-marketplace networks; reduce business costs by facilitating the exchange of content and transactions over the Internet; and easily connect buyers, suppliers and partners into a collaborative trading hub.

**Five major content-related chores that translate into compelling e-business experiences:**

- **Content strategy**
- **Content architecture**
- **Content development**
- **Content distribution**
- **Content syndication**

Susan E. Aldrich  
Patricia Seybold Group<sup>4</sup>

The role of catalog management in e-commerce should not be underestimated. And adding dynamic functionality to your catalog management will ensure greater supply chain efficiency. An October 2000 report by the Yankee Group predicts that “suppliers that lack dynamic functionality face the possibility of being left out of the electronic B2B ecosystem.”<sup>6</sup> Dynamic catalog management is a suite of applications and tools used by the supplier or e-marketplace to provide customized catalog information for each individual buyer.

**IBM WebSphere Catalog Manager** allows you to manage catalog content while integrating with the WebSphere Commerce Suite family of products to provide a complete, dynamic e-commerce solution. WebSphere Catalog Manager also offers the **flexibility** to integrate with other enterprise content products in order to share information across content management systems.

### **Flexible catalog management solutions**

WebSphere Catalog Manager enables you to control and manage your e-commerce product information. It addresses the specific needs of e-commerce (high data volume, multicultural editions, disparate sources, etc.) while ensuring interoperability with other enterprise-level content management applications. This ability allows you to address the immediate catalog content management needs for your e-commerce applications, and enables the aggregation and optimization of catalog data originating from different suppliers. It also delivers product information to any of the implemented WebSphere Commerce Suite editions, or to any other targeted deployment destination – for example, distributing product information to trading partners, buyers or e-marketplaces.

With WebSphere Catalog Manager, you can easily create or import, update and manage a rich variety of product information. This can be done efficiently and accurately, while substantially reducing the cost and the amount of time spent on catalog management.

By taking advantage of the rich product data that WebSphere Catalog Manager provides to assist buyers, you can turn browsing customers into buying customers. You can provide robust search capabilities, virtual sales assistance and product comparisons. Instead of placing a call or leaving the site, buyers can get the product information they need to make an intelligent, immediate purchase decision or find alternative products for out-of-stock items. By enhancing the shopping experience, the catalog can help build stronger customer relationships, improve customer retention, reinforce a positive brand experience and generate revenue.

As shown in Figure 1, WebSphere Catalog Manager server becomes the hub for all client activities and for data delivery to the targeted systems, including WebSphere Commerce Suite. Catalog information can also be transferred to other systems in XML or ASCII formats.

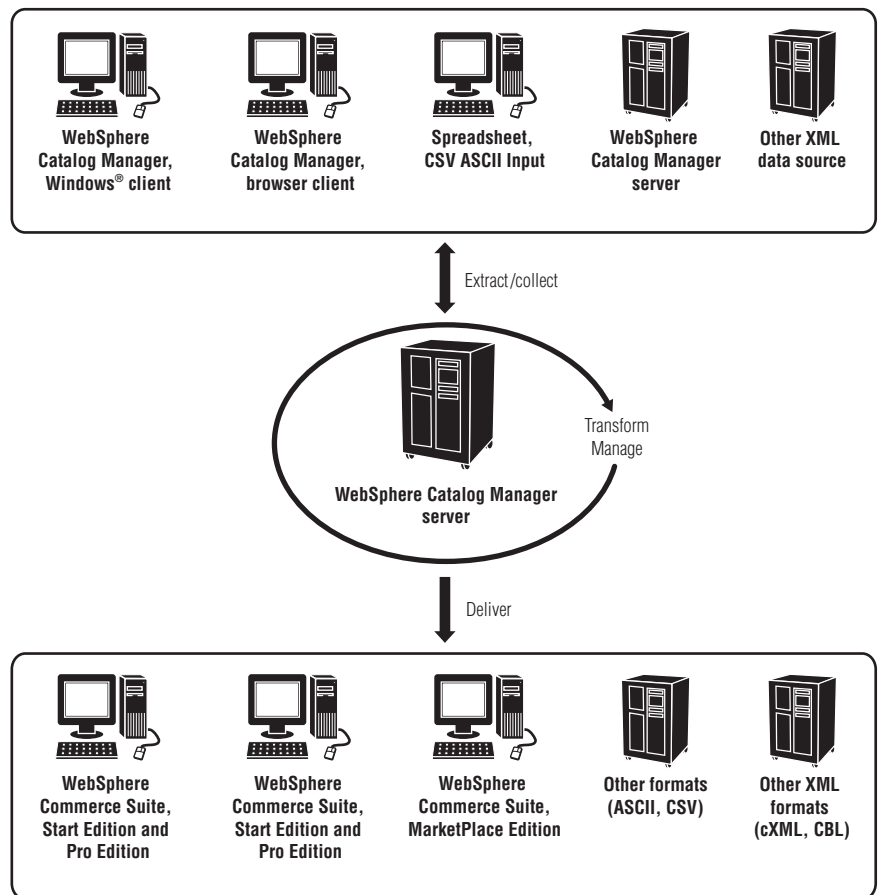


Figure 1: WebSphere Catalog Manager fits into an existing e-commerce environment.



WebSphere Catalog Manager is a central manager of large amounts of product information, ensuring its validity and timeliness. Product information can be created within WebSphere Catalog Manager from various external sources of information or through its automated interfaces. WebSphere Catalog Manager can support spreadsheet interfaces and also has various components to create and manage repositories. It can also store products, items or SKUs, categories and the various relationships that may exist between these objects. Products can have categories and template definitions assigned to them that specify the basic attributes required for a particular type of product such as name, description and price.

### **Enter the global marketplace**

WebSphere Catalog Manager supports multicultural catalogs that allow product data to be shared internationally by using the WebSphere Commerce Suite runtime environment.

The multicultural feature supports:

- *The creation of **multicultural product catalogs**. Allows multiple descriptions for categories, products and items based on the viewer's preferred language.*
- *The assignment of a **default language**. In the instance that a description cannot be found in a specified language, the description can be provided in a default language of your choice.*
- *Shopping in the customer's **preferred languages and currencies**.*

### **Streamline your processes**

WebSphere Catalog Manager is designed to understand the inherent relationships between different catalog elements, such as products, categories, product sets or kits, SKUs or items, and cross-sell items. Its object-centered constraint model architecture provides the foundation for the catalog information knowledge base. By eliminating redundant product information and allowing role-based points of entry for modifying multiple products and SKUs, WebSphere Catalog Manager can help streamline the product information creation and management process.

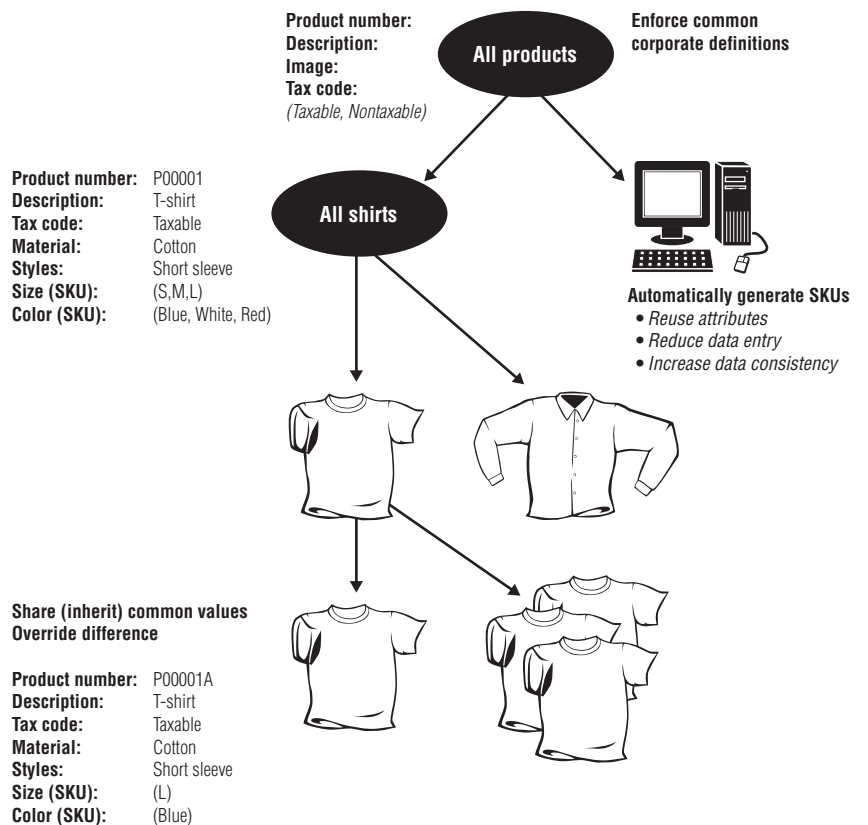


Figure 2: WebSphere Catalog Manager allows a user to reduce data entry, increase consistency and reuse information.

Figure 2 illustrates an example: A merchant selling cotton shirts in multiple colors and sizes wants to begin offering the shirts in new fabrics. Traditional catalog creation would force the merchant to reenter all existing product information and add new fabric attribute values for each type of shirt. WebSphere Catalog Manager enables the merchant to automatically create new items or SKUs by inheriting all the previously existing product information, as well as the new attribute values, significantly reducing the time spent on data entry and content management.

### IBM WebSphere Catalog Manager

Before we go into more detail about how WebSphere Catalog Manager provides this solution, it is important to understand its different components.

### Catalog Manager server

The **Catalog Manager server** is a build-time server designed to aggregate content from multiple sources into a single repository with a predefined categorization schema and product template definitions.

The Catalog Manager server includes:

- *The **transformer**, used to convert data back and forth between different XML and ASCII formats. There are no standard database schemas used within the business environment of any customer. For this reason, it is important to be able to remap data from one schema to another to facilitate information reuse, data migration or other business reasons. The **ASCII CSV to XML transformer** converts incoming ASCII Comma-Separated Variable (CSV) files into a generic XML format. The transformer allows users with data in alternate data management programs to retain their investments and reuse those tools and the information contained within those programs in WebSphere Commerce Suite or other target systems.*
- *The **extractor**, used to collect and deploy catalog data. Customers can use the extractor to pull subsets of data for specific purposes—for example, spring catalog versus fall catalog information or to pull products related to a particular upcoming holiday. Customers can also use extraction to pull information from the consolidated database to repurpose for other systems. This allows you to leverage the rich store of data within WebSphere Catalog Manager and make the information available wherever it's needed.*
- *The **loader**, used to take data in the form of an XML document which has already been mapped to the target schema and load that information into the target WebSphere Commerce Suite or Websphere Catalog Manager server database. The loader can add, delete or update any information within the database subsystem, not just catalog data. The loader uses a Document Type Definition (DTD), which can be created manually or automatically generated by the DTD generator within WebSphere Catalog Manager, to validate the data being loaded into the target schema.*
- *The **Web browser interface**, a browser-based user interface which provides a simple but flexible and customizable means for customers to view, enter, update and delete data from WebSphere Catalog Manager or WebSphere Commerce Suite database servers. This interface offers ease of use for line-of-business managers.*

### Catalog Manager workstation client

Information can be put into WebSphere Catalog Manager in a number of ways, including browsers, workstation clients, spreadsheets, and as ASCII or XML files. You can also use the standard **Catalog Manager workstation client** to access the full set of functions listed below. The workstation client has the added advantage of data validation.

The workstation client consists of:

- **Editors**, used to edit categories, products and items
- **Modeling** component, used to define hierarchical product definition templates
- **Wizard**, used to help extract data
- **Report card**, used to evaluate the results
- **Import** component, used to import data
- **Export** component, used to convert and save data into XML
- **Publish** component, used for selective publishing

Another important component of the workstation client is the **servlet manager**, used to allow the WebSphere Catalog Manager server tools, such as the extractor, transformer and ID resolver, to be invoked using servlets. Typically, the servlet manager runs on a WebSphere Catalog Manager client machine, and sends messages to the WebSphere Catalog Manager server machine to launch the designated servlet. The servlet manager also enables selective installation of particular tools in the Catalog Manager workstation client for specific users.

### IBM WebSphere Application Server

WebSphere Catalog Manager uses award-winning **IBM WebSphere Application Server**, a Java™ servlet-based Web application server used to deploy and manage Web applications. WebSphere Application Server is a Web server plug-in based on a server-side Java programming model that uses servlets, JavaServer Pages™ files and Enterprise JavaBeans™.

Additional components include the **Web server**, which provides a Web interface and the **database**, which stores all product and customer data. WebSphere Catalog Manager uses IBM DB2® Universal Database™ but can extract or publish using Oracle or DB2 databases on any native WebSphere Commerce Suite platform.

Figure 3 illustrates a typical data flow (the flow will vary, depending on particular usage scenarios):

1. Data is pulled in from multiple sources, in different formats such as spread sheets, ASCII and XML files.
2. Data is fed through the transformer facilities and converted into a standard XML format supported by WebSphere Commerce Suite and matching the requirements of the targeted WebSphere Commerce Suite edition.
3. The loader facility reads the standard XML format in order to populate or update the WebSphere Commerce Suite catalog.
4. Catalog data can then be collected by the extractor facility for further editing and then loaded back to the catalog.

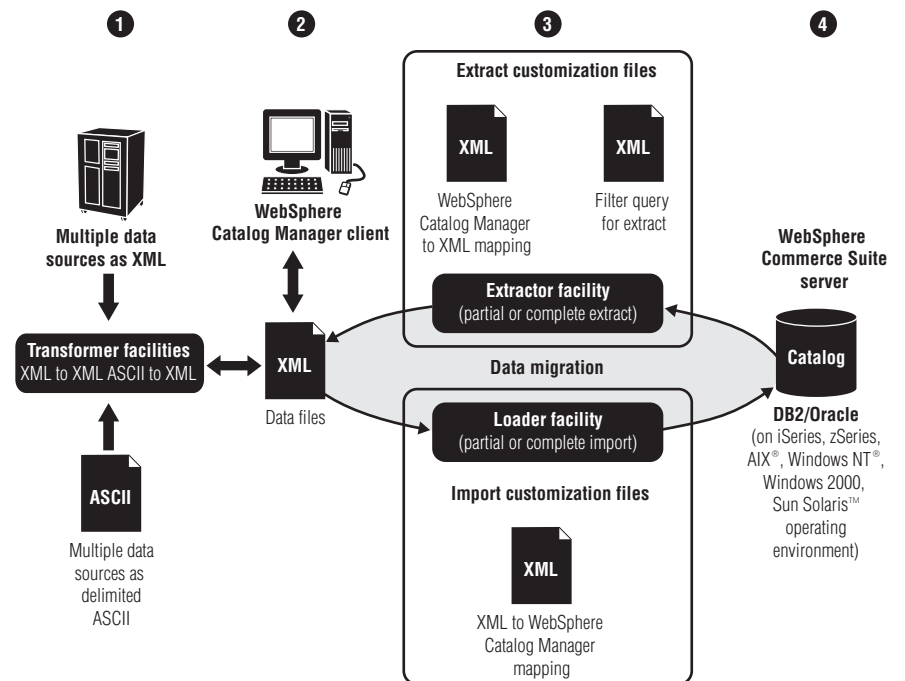


Figure 3: WebSphere Catalog Manager processes raw data in a typical data flow.

**Business solutions with WebSphere Catalog Manager**

WebSphere Catalog Manager offers many out-of-the box and customizable capabilities to address the different WebSphere Commerce Suite editions' customer requirements. Depending on your business size, e-commerce model and role within the supply chain, you have varying content management needs. For example, loading catalog data may require supporting a user who has chosen an XML editor, or a spreadsheet file, or files coming from different users within the enterprise. A WebSphere Catalog Manager client uses any combination of these and supports all of these users within the enterprise or across the supply chain, producing the required information to load or update the systems catalogs.

Different non-technical users with different product skills and responsibilities may need to collaborate to produce the consolidated catalog; each user may be responsible for certain pieces of the product information. And each user might use different tools to create or update a piece of the puzzle. The WebSphere Catalog Manager client gives content creators a full set of functions to help build that required content. The consolidated contributions are then validated to ensure conformity to the business and to catalog requirements. Even when the content contributors come with different skills, using different tools and working in different environments, WebSphere Catalog Manager provides the open platform that enables collaborative product information building and maintenance.

If you have already invested in, or are planning to invest in, Web content management and publishing, WebSphere Catalog Manager provides an open and flexible environment that integrates smoothly with existing systems.

### Summary

IBM WebSphere Catalog Manager and IBM WebSphere Commerce Suite address your enterprise catalog content management needs while ensuring interoperability with existing enterprise content management systems.

IBM WebSphere Commerce Suite and WebSphere Catalog Manager build upon the IBM WebSphere software platform for e-business. The WebSphere software platform is recognized as having a premier set of capabilities that enable you to choose what features you need, while ensuring interoperability between other members of the WebSphere software family and compliance with open, industry-accepted standards.

### Highlights of WebSphere Catalog Manager:

- *Aggregates very large catalogs from multiple sources seamlessly*
- *Enables business users with diverse backgrounds to create and maintain catalog data*
- *Supports multicultural catalog data*
- *Simplifies content sharing using standards-based Java and XML technologies*

WebSphere Catalog Manager allows you to take advantage of a full-featured catalog management system right now. You can leverage dynamic catalog management by combining it with WebSphere Commerce Suite. And you can offer your customers individualized purchasing experiences based upon customer profiles, personal preferences or industry and marketing profiles.

WebSphere Catalog Manager also provides seamless integration with complementary Web content management systems. WebSphere Catalog Manager empowers dynamic e-commerce without the long delays or high costs often associated with implementing enterprise-wide content management systems. It can also help you maintain consistent, accurate, high-quality catalog content, thereby protecting your brand. With WebSphere Catalog Manager, you can achieve the integration and infrastructure necessary to succeed in the next phase of e-business.

### For more information

To learn more about IBM e-commerce solutions, contact your IBM marketing representative or IBM Business Partner or visit:

**ibm.com**/software/websphere/commerce



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- <sup>1</sup> Kopriva, Alexander. "Catalog Content Building and Management: The Achilles Heel of the Digital Economy." Meta Group. October 18, 2000.
- <sup>2</sup> Glossary, <http://www3.gartner.com>.
- <sup>3</sup> "The Use of Content Management Tools in Reducing eBusiness Disruptions." IDC. November 2000.
- <sup>4</sup> Kopriva, Alexander. Ibid
- <sup>5</sup> Aldrich, Susan E. "Contending With Content: The Five Labors that Deliver Compelling E-Business Experiences." Patricia Seybold Group. November 2, 2000.
- <sup>6</sup> Wojtkiewicz, John S. "The Dynamic Catalogue Management System: A Critical Component for Success in the New Ecosystem." The Yankee Group. October, 2000.