

# The Sitecore Solution for Web Content Management

Building an Interactive Presence  
for Profitable Business Relationships

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Strategies for Collaboration and Content Management

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## Executive Summary

In today's global economy, companies exploit the Web as a medium for building business relationships. They expect to manage their Web-based content in a cost-effective manner. By adopting a Web content management (WCM) application, a firm transforms key aspects of its core operations by enabling its line-of-business staff to maintain Web-based content on their own, without ongoing support from an IT group.

As an industry leader in WCM applications designed for the .NET environment, Sitecore CMS delivers a compelling and economical solution for capturing, organizing, storing, and producing Web-based content. Sitecore is based on a flexible enterprise architecture that is readily adaptable to many business situations. In scalability, performance, flexibility, ease of use, information integration, and the ability to manage multiple Web sites, Sitecore stands apart from its competitors in its capacity to deliver a unique and cost-effective value proposition.

Companies use Sitecore to establish and subsequently enhance their interactive Web presence, while reducing their overall operational costs. For competitive firms concerned about planning for the future as well as solving current problems, investing in Sitecore is a smart business decision.

## The Promise of Compelling Content

### FROM PUBLISHING WEB PAGES TO PRODUCING WEB CONTENT

In today's global economy, digitally driven companies compete for business through the content they distribute over the Web. For instance, one firm carefully segments its market and promotes its separate brands to targeted customers on discrete Web sites. Another firm regularly revamps its Web presence when it introduces a new marketing campaign and rolls out new products and services. A third firm continually updates its collection of frequently asked questions and answers by structuring the flow of conversations with partners, customers, and prospects.

As these examples illustrate, the Web is now a mainstream venue for doing business in the digital age. The goal is not simply to publish information for others to read, but rather to produce the relevant content required to yield engaging, interactive experiences that deliver business results. Companies must optimize how they invest their resources to organize and deliver content over the Web.

Moreover, content is no longer confined to predefined Web pages analogous to the sections of a book, the pages of a report, or the pictures in a photo album. Rather, content constitutes the currency for developing interactive experiences. Content is constantly changing and being updated. Beyond a series of pages, content encompasses short information snippets (or information objects) that are compiled from multiple sources, assembled on the fly, adapted to a business context, and designed to deliver a compelling experience.

### **AN INTERACTIVE MEDIUM FOR BUILDING BUSINESS RELATIONSHIPS**

It is important to focus on outcomes. Companies exploit the Web as an interactive medium for building ongoing relationships with their clientele. They expect to manage their Web-based content as a resource that drives their online presence. At the same time, companies are concerned about the costs of organizing and delivering content over the Web.

When seeking to expand their Web presence, many companies are investing in Web content management (WCM) applications for building their interactive environments. The WCM application structures the organization and distribution of content in a flexible, scalable, and adaptable fashion. Once the application is deployed, the line-of-business staff within a firm can maintain the Web-based content without ongoing support from the IT group.

Adopting a WCM application is a strategic business decision that enables a company to transform aspects of its core business operations. Making the right choice—one that delivers substantial value at an affordable price—ensures that the firm has a solid foundation from which to leverage its Web presence and respond rapidly to promising initiatives. It is important to choose wisely.

## **Sitecore CMS as a Scalable Enterprise Application Platform**

### **AN INTERACTIVE WEB PRESENCE**

For many firms, Sitecore CMS is a wise choice. Sitecore is an enterprise application platform that provides the foundations for Web content management. Sitecore delivers the resources and technologies for capturing, organizing, storing, and delivering content for an interactive Web presence. Significantly, with Sitecore a company's Web presence can easily span multiple Web sites and business units and yet be cost-effectively maintained as a single enterprise application by its IT group.

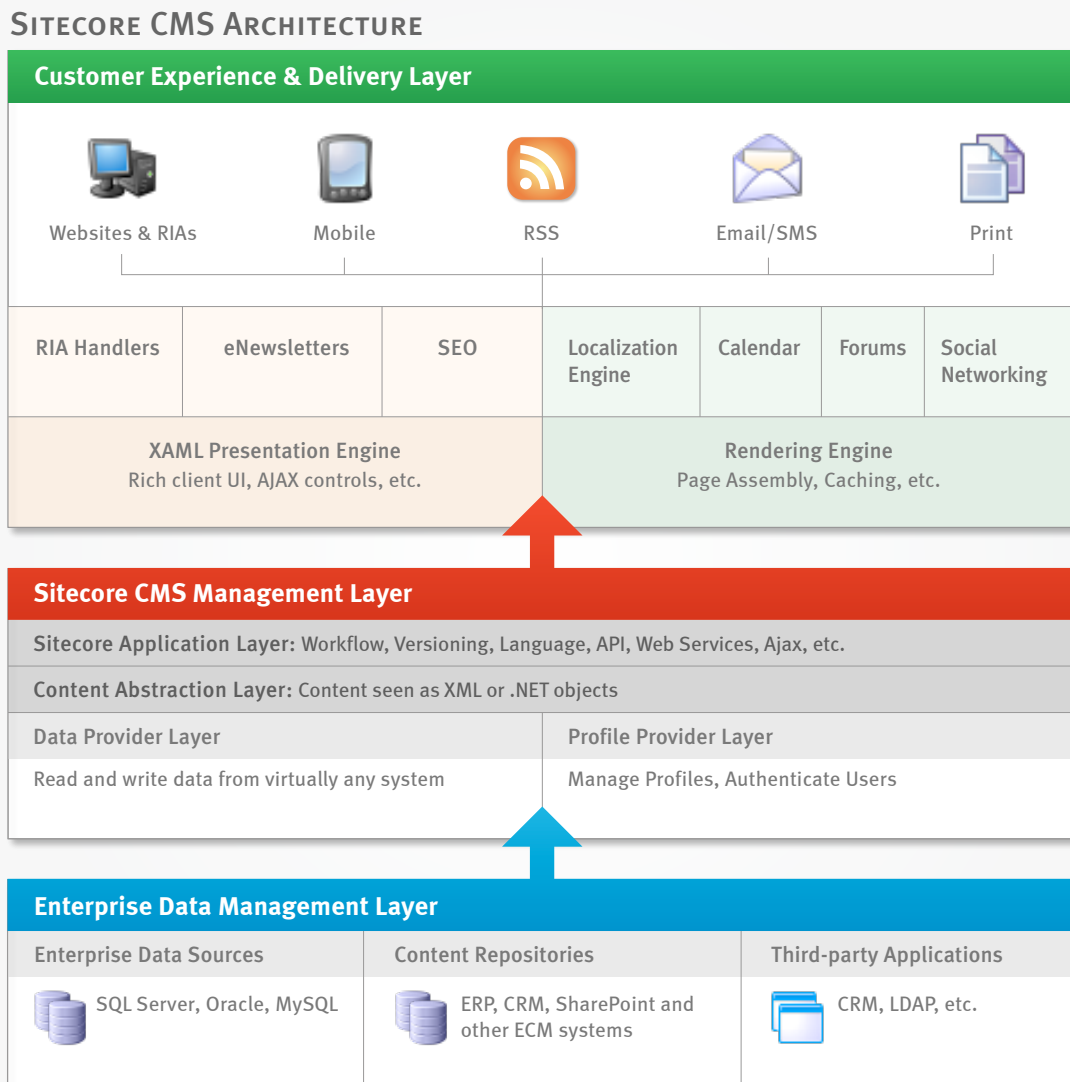
Sitecore features a browser-based user environment with in-context editing. End users within line-of-business groups can access Sitecore from any browser and view their updates as they will appear online. IT staff members do not have to get involved in the day-to-day operations of distributing content over the Web. Nevertheless the IT group can remain in control and centralize the technical operations of various Web sites.

Sitecore supports component-level management and delivery by storing content within a repository. All content management capabilities—such as security, workflow, versioning and roll-back—are applied to individual content items and not to entire pages.

**A COMPONENT-BASED ARCHITECTURE FOR THE .NET ENVIRONMENT**

From a technical perspective, Sitecore is a WCM application running within the .NET environment, designed for companies committed to Microsoft applications and solutions. Sitecore relies on Microsoft’s implementations of core Internet standards—including XML, XSL, XHTML, DTHML, CSS, AJAX, XAML, and JavaScript—to manage the text, images, and various rich media elements that are displayed on Web pages.

Sitecore is based on a well-defined enterprise architecture designed to scale to the largest Web infrastructure. As shown in Figure 1, Sitecore features discrete functional levels and structured services that call multiple application resources.



Source: Sitecore

**Figure 1. The Sitecore architecture comprises multiple components. The Sitecore Application Layer provides the key services for linking the multiple user experiences with the various back-end databases, content services, and enterprise application services.**

Sitecore includes an explicitly identified application layer that controls application-level tasks such as workflow, versioning, and local language variants. This layer provides integration capabilities for linking with external applications and services. Sitecore can easily integrate external applications and incorporate the remote information into its interactive experience.

Sitecore comprises more than 5,000 .NET, JavaScript, and Web service APIs, delivered through an exposed event model and a pipeline architecture. Sitecore features a content abstraction layer and a data provider layer to access the metadata and content stored within the repository. The Sitecore repository supports popular relational databases: Microsoft SQL Server, Oracle, and MySQL. The repository can also directly access content stored within Microsoft Office SharePoint Server and other enterprise systems.

## Sitecore in Operation: Producing the Compelling Experiences

### COMPETITIVE FACTORS FOR A SMART BUSINESS DECISION

Sitecore provides a compelling value proposition for producing Web content. Once Sitecore is deployed within an enterprise, the IT group can implement and maintain the underlying platform while delegating responsibility for day-to-day content management to operational business units. Line-of-business users, in turn, can take control of the content they produce for their company Web sites, relying on only occasional support from their IT staff.

Sitecore is of course hardly the only solution in its class. Like Sitecore, other WCM applications designed for the .NET platform also structure and segment the management of Web content. But there are key differences between Sitecore and its competitors in terms of scalability, performance, and ease of use that make Sitecore better able to deliver a unique value proposition.

Deploying a WCM application with Sitecore's extensive functionality yields substantial business benefits. Specifically, Sitecore is based on a well-defined, enterprise application platform with a powerful and flexible infrastructure that addresses key business requirements in a systematic fashion. Let's examine how Sitecore addresses the business needs of growing, often distributed, organizations.

### MANAGING A DISTRIBUTED WEB PRESENCE

At its core, Sitecore is designed for a distributed Web presence. Sitecore includes the capacity to manage content on multiple Web sites directly and cost-effectively. It is a server-side solution that makes no assumptions about client-side browsers, and thus simplifies ongoing maintenance and support costs. Sitecore delivers a Web-based user experience along with extensive workflow functions that are adapted to this distributed Web presence.

**MULTI-SITE SUPPORT.** With Sitecore, a company's Web presence can expand beyond a single Web site. A firm's IT group can implement a single instance of Sitecore and proceed to manage content for multiple lines of business. These can either be unique sites (with their own URLs) or micro-sites maintained within the framework of a larger site.

- The IT group can centralize (and cost-effectively control) the technical operations of the WCM application, while enabling line-of-business groups to work in their own way and produce content as they see fit for their target audiences.
- Each operational business unit manages the content on its own site, implementing its own templates and organizing content to meet the needs of its own clientele.

Unlike many competitive offerings running on the .NET platform, comprehensive multi-site support is native to Sitecore. No custom coding is required to implement and maintain the multiple sites running on a single system. The IT group simply defines each site as a configuration option within Sitecore.

For companies investing in Sitecore, multi-site support means lower cost of ownership and better use of IT resources. A firm can easily expand its online initiatives and deploy different Web sites depending on its business strategy. The ability to add a new Web site without having to procure the hardware and software for a new system allows the firm to optimize its systems-related investments and seamlessly expand its own Web presence based on its evolving needs.

**CONSISTENT USER EXPERIENCE.** Sitecore delivers a totally Web-based user experience, tailored to contemporary browsers and mobile devices. The interactive environment driving this experience is generated by AJAX and JavaScript and based on server-side components. No ActiveX controls or applets need to be downloaded to the browser. As a result, Sitecore

- Provides a consistent user experience for content contributors, editors, administrators, and developers across browsers and platforms.
- Systematically maintains this consistent experience

Furthermore, Sitecore easily renders content to multiple output environments—ranging from desktop Web browsers to Microsoft Word, Microsoft InfoPath, RSS feeds, and PDAs. For example, content displayed on a desktop Web browser can include interactive graphics and in-line video, while the same information, directed to a small-screen PDA connecting over a low-speed network, automatically presents only textual content without the interactive graphics. Consequently, centrally managed content can be effectively distributed while also over the Web, adapting gracefully to different distribution environments.

By comparison, many other WCM applications built on the .NET platform still rely on ActiveX controls and applets for key aspects of the user experience. ActiveX browser controls and applets are invariably tied to browsers, operating systems, and device types. When something changes, controls and applets often need to be refreshed. These WCM applications thus have a built-in limitation: they must be able to download and install code, which runs within the browser. For example, one WCM competitor currently requires more than 14 controls and applets to be installed and running within a browser. Updating the various applets and controls remains a major maintenance

challenge. Providers need to update and test their ActiveX controls and applets when these are running within new versions of browsers and on alternative platforms, such as various mobile devices.

With the move to Rich Internet Applications and a more robust framework for managing the user experience, many WCM products running on the .NET platform now need to catch up to the more modern and more scalable user experience paradigms. To be sure, the vendors creating these WCM products are promising (and often already developing) a purely Web-based, server-driven user experience that leverages AJAX and JavaScript. Sitecore, however, does not require retrofitting; it is designed from the start to leverage the flexibility of server-side components for a consistent user experience.

**WORKFLOW.** Sitecore features highly granular, event-driven workflow capabilities, separating the workflow stages from users and groups. It manages permissions to enable only predefined users or groups to participate in any stage of any workflow.

Consider how a firm might develop a new product catalog for its Web site. The workflow can be limited to the product marketing team responsible for promoting the product and the fulfillment manager responsible for the order management process. Others working on the product might be able to view the catalog but have no rights to modify any aspects of it. The end result is an enterprise-level workflow environment, capable of managing content flexibly across the enterprise.

In contrast, many other WCM applications running on .NET platforms provide less granular workflow capabilities. They do not support an underlying enterprise application platform for granular access and control. Rather, the workflow capabilities are limited to linear stages, based on the order of users and groups. Thus it is difficult to segment access and controls on a step-by-step basis and ensure that only certain people or groups can perform particular actions for specific activities.

### **CONTENT FLEXIBILITY**

Sitecore is based on a native XML infrastructure. Sitecore manages all content items as self-contained information snippets (defined as content components) and stores them within its repository.

Sitecore exposes its metadata as XML tags, maintained within its central repository. It separates the underlying information schema, used to tag and categorize content within the repository, from the layout tags for rendering page displays. Sitecore then provides an extensible environment for accessing XML content structures and relationships through its ability to query the repository and then dynamically fetch and assemble the relevant chunks for the appropriate page displays. Sitecore content is stored in a single, unified content tree that is easily accessed through industry-standard XSLs. The end result is a granular and flexible environment for delivering content. Application developers can leverage content managed within Sitecore to develop state-of-the-art Web-

based business solutions. Faster development translates into both lower development costs and more effective business applications.

In contrast, many other WCM applications running on the .NET platform manage content primarily as documents, not as discrete content components. These applications define a fixed (and often limited) number of content properties. Once these properties are defined, it is often difficult, costly, and time-consuming to modify them. The end result is a less granular content and hence a less flexible platform. Application developers often lack the adaptive infrastructure for rapidly assembling content components into desired business applications, and instead have to get involved in development efforts that add time and expense to projects.

### **SCALABILITY**

Sitecore is designed to support extensible enterprise operations that can be adapted to many different business situations. It explicitly separates work-in-progress activities from content delivery.

- Activities related to generating content—such as creating, editing, reviewing, tagging, organizing, and storing content in a repository—run on one server.
- Activities related to rendering content for delivery, including aggregating and transforming it for alternative output devices, run on another.

Often these servers are hosted on separate systems. The work-in-progress server can run within the confines of an internal network and can be shielded from external access, thus strengthening the security of content development activities. The content delivery server can run outside the firewall and is accessible over the public Internet.

As a result, Sitecore can support multiple configurations to ensure the flexibility, scalability, and control of various content management activities. Sitecore can segment work-in-progress activities from content delivery. A company can centralize its work-in-progress activities within one server that is capable of simultaneously supporting hundreds of content contributors and editors. A company can deploy as many content delivery servers as required to meet the demands for producing an interactive experience. If the firm needs to enhance performance, it can simply add an additional delivery server to its Sitecore platform without needing to change anything about its work-in-progress operations. By investing in Sitecore, companies ensure that they have an economical path to the future.

In contrast, many competing WCM products deployed on the .NET platform do not separate work-in-progress activities from content delivery. Rather, all WCM activities run within a single server, are based on a single database, and are hosted on a single system, which in turn reduces the scalability and flexibility of deployment. When companies need to add capacity, they have to implement an additional system and then develop various utilities to synchronize work-in-progress activities located on the multiple systems. If they have not planned for growth, compa-

nies often find themselves in a situation where they cannot scale, or have to spend significant time and effort to allow for increased capacity.

### **DELIVERING CONTENT**

Sitecore's approach to managing Web content, separating work-in-progress activities from content delivery, has an additional business benefit: the ability to support many different distributed delivery scenarios. The content delivery server features capabilities for

- Rendering content from multiple information snippets into predefined page displays.
- Caching the pages.
- Distributing the page displays on demand to various browsers and viewers.

The content delivery server performs XSL transformations to render content for multiple display devices such as desktop Web browsers or PDAs. Sitecore has extended and enhanced .NET's standard caching technology, which allows for significant performance improvements and supports more rapid content delivery. Sitecore multi-level caching system flushes pages, content components, objects, and database queries as they are modified or expire.

Sitecore supports alternative methods for publishing content when transferring it from the work-in-progress server to the content delivery server. In addition to database replication, Sitecore publishes content using SOAP and FTP. When deploying Sitecore, a company can select the best method for its particular application infrastructure.

Sitecore leverages its granular content management capabilities to support incremental publishing and content synchronization. Sitecore can publish content down to the level of an individual snippet. When an information snippet (such as the field of a form or a few lines of text) is modified, Sitecore can rapidly update just the snippet without having to recompile, render, and transform the entire page. This saves time, conserves system resources, and reduces management overhead. It also ensures optimal user experiences as content can be frequently refreshed.

Many other WCM applications that run on the .NET platform do not provide as flexible an approach for producing Web content. Without incremental publishing capabilities, companies using these products often have to recompile all of the content that appears on their site. For a large site with hundreds or thousands of pages, frequent updates are time-consuming and difficult to perform. When companies are limited in how often they can update their sites due to these publishing constraints, their sites are correspondingly less timely and relevant.

It's also important to pay attention to the infrastructure for content transformations. Some competitive WCM applications handle content transformations using their own approach to marking up content for transformations, rather than the industry standard of using XSLs. Developers working on these .NET applications need to learn how to implement content transformations using this new markup language. Consequently, companies may have difficulty finding the necessary talent

or need to invest in specialized training, to support a proprietary approach to content transformations, adding weeks and months to any Web development effort.

### **DESIGNED FOR CONTENT INTEGRATION**

Sitecore is designed for content integration. It relies on industry-standard approaches to incorporating structured and unstructured information, produced by external applications, into a consistent Web-based experience. Sitecore includes a built-in XML data provider function that

- Makes dynamic calls to one or more remote repositories.
- Easily fetches content stored in SAP, Lotus Notes, SharePoint, and other database-driven business applications,

Sitecore maintains a consistent application development model. It relies on server-side controls to provide an explicit architecture for distributing content management functions to browsers. This feature enables the development of content-rendering capabilities with XSLTs or .NET controls. These XSLT renderings are easy to learn, write, and maintain without learning a proprietary approach. Sitecore does not rely on ActiveX controls for rendering content and is not limited to browsers that support this Microsoft-centric technology.

Sitecore can surface content to external applications over the Web using mash-ups. It exposes all of its content management functions as Web services and provides content through a loosely coupled infrastructure for rich Internet applications. As a result, application developers can easily utilize the content, managed within Sitecore, to power business applications that are based on the loosely coupled infrastructure of semantically rich, “in the cloud” Internet resources.

### **GOVERNANCE AND IT POLICY MANAGEMENT**

Companies need to plan for managing complexity. An interactive Web presence entails not only maintaining very large amounts of content but also synchronizing the activities of many content contributors (authors, photographers, graphic designers), editors, reviewers, and approvers—all working from multiple locations and seeking ways to coordinate their activities. Sitecore provides a solution to the human aspects of content management by making it easy to establish and enforce the policies and procedures for managing a Web presence across a distributed environment.

Specifically, Sitecore centralizes all of the functions required to track templates, manage access controls and permissions, define workflow steps and activities, and establish content categories. IT staff members use a site management dashboard to control the various aspects of a company’s online presence in a consistent fashion. By comparison, the site management capabilities provided by most competitive products are spread across several application functions. Templates are maintained through one management environment, access rights and permissions through a second set, and workflows through a third.

With Sitecore and a site management dashboard in place, an IT group can easily set up and enforce Web site management policies and procedures. A single console (and context) manages the entire Web presence within the company and controls the multiple Web sites. In addition, it is easy to train new IT staff members; they just need to learn how to use the dashboard and its consolidated set of content management operations.

## The Business Case for Sitecore

### DESIGNING FOR PERFORMANCE AND FLEXIBILITY

In the digital age, companies cannot anticipate many of the potential business opportunities that are often just over the horizon. But they can optimize their chances for success. By investing in a flexible and scalable enterprise application platform such as Sitecore's, competitive firms can plan for the continual innovation of their content infrastructure. As a WCM application designed for performance, Sitecore easily adapts to many different business situations.

Moreover, Sitecore is based on a comprehensive and extensible enterprise architecture in which innovative content components and collaboration tools—currently including blogs, wikis, social tagging, and co-editing environments—are designed to leverage a systematic infrastructure. To be sure, some assembly is required. This emphasis on engineering excellence carries investment costs as well as business benefits. Yet once implemented and deployed, the innovative capabilities work together seamlessly to fulfill (or exceed) expectations.

In contrast to Sitecore's enterprise approach, many other WCM applications that run on the .NET platform offer an array of modules or widgets that may look appealing at first glance but rarely hold up to production requirements. Without the enterprise-class engineering and scalable design to support them, these features can often be more "demo-ware" than actual functionality. It is important to evaluate how extensible these "nice looking" features are, and whether they can scale to meet enterprise-wide requirements.

### LOWERING THE TOTAL COST OF OWNERSHIP

Over time, Sitecore's approach to an enterprise architecture saves money. Due to its ability to reuse content and functionality, to support multiple sites from a single environment, and to deliver on a standards-based approach, Sitecore's total cost of ownership (TCO) is significantly lower than that of many of its .NET competitors. When compared with competitive offerings, Web sites powered by Sitecore can be implemented more rapidly, are easier to update, and cost less to maintain over their lifetime.

There is also clear evidence that the software purchase costs of a WCM application are but a fraction of the total expense of a complete solution. Often, these software costs range from 5 to 15 per cent of the total project expenses, including initial deployment and ongoing maintenance costs. Clearly, it pays to invest in an enterprise application that minimizes deployment and maintenance costs and thus reduces a firm's TCO.

**OPTIMIZING INVESTMENTS**

In short, a company that deploys Sitecore is able to optimize the costs of producing content for multiple interactive experiences, while also maximizing the business benefits and results. Using Sitecore, a company exploits a robust and extensible platform for managing content within a .NET environment. Sitecore allows a company not simply to manage content for a single Web site, but rather to maintain the content for a complete Web presence, often including a collection of sites that are each designed with their own look and feel and target a distinctive audience.

Specifically, Sitecore is designed for companies that expect to do business over the Web by directly engaging their clientele—be they customers, partners, and/or employees—with relevant information, produced by multiple sources and delivered in a consistent manner. A WCM environment based on Sitecore can easily scale to support hundreds of content contributors and can produce content for very large numbers of end users across a company intranet, extranet, or the public Internet. Companies can rapidly deploy an enterprise solution, maintain it economically over the long term, and leverage the underlying architecture to enhance and extend it easily as needed.

The end result is a win-win situation for the firm focused on its future, its IT group charged with maintaining its enterprise infrastructure, and its line-of-business groups responsible for day-to-day operations. Using Sitecore, the IT group can support the company's business strategy by rapidly implementing and readily managing the underlying resources for an interactive Web presence, and by ensuring that the business users have the WCM tools they need to be successful. These business users in turn can continue to do what they do best: develop and publish the content essential to ensuring that their groups produce an interactive Web presence and achieve their strategic business objectives.

## About Bock & Company

Geoffrey Bock, principal of Bock & Company, focuses on business strategies for content management and collaboration. An analyst and author with over twenty-five years of industry experience, he tracks how organizations create, organize, and manage business information to sustain profitable relationships. As a consultant and thought-leader, he advises software companies, end-user organizations, and government agencies on business planning, technology innovation, and operational excellence. Geoffrey can be reached at [geoffbock@gmail.com](mailto:geoffbock@gmail.com).