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# Enterprise Content Management

A Platform for Growth

A Microsoft White Paper

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**Microsoft**

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## Executive Summary

Enterprise Content Management (ECM) is increasingly emerging as a strategic imperative for organizations. This whitepaper is aimed at organizations that are either in the process of implementing ECM systems or are thinking about implementing ECM systems. This whitepaper provides a view of the systems, processes, and functionality that comprise ECM.

While the importance of ECM is clear, organizations are often not completely clear about how it can provide real business value. This whitepaper takes a look at why enterprises need ECM today, and how they can benefit from it.

The whitepaper also examines some of the challenges faced by organizations in implementing ECM systems, both from a technology perspective as well as from a user-adoption and change-management perspective. It also describes Microsoft's approach towards avoiding some of these common pitfalls.

Finally, this paper also provides a glimpse into the future by giving readers a high-level view of how Microsoft is driving innovation in Enterprise Content Management, and the investments that Microsoft is making in this area now and in the future.

# 1. Enterprise Content Management (ECM) Overview

Simply put, ECM refers to the management of content regardless of where it resides and what format it is in: images, text documents, Web pages, spreadsheets, presentations, graphics, drawings, e-mail, video, and rich media assets are just some examples of relevant content formats. ECM is a strategic infrastructure component or platform that supports key vertical business applications as well as key horizontal processes that cut across departmental lines. Business solutions should leverage enterprise knowledge assets and enable the organization to be more efficient. Solutions built on an ECM platform can effectively leverage the information that flows through the company.

The Association for Information and Image Management (AIIM) defines ECM as “the technologies, tools, and methods used to capture, manage, store, preserve, and deliver content across an enterprise.” The life cycle of a piece of content can be thought of as having the following main stages:

- Creation and capture
- Management
- Sharing and collaboration
- Publication
- Storage and archival

Some common objectives that all ECM systems strive to achieve are:

- **Reuse data and repurpose information:** This means the ability to use the same content in multiple ways, publish the same content in multiple formats, and save time and money by not having to re-invent the wheel.
- **Efficiently find and retrieve content:** Content is useless unless you can effectively mine it and find what you need to accomplish your goals. Content can exist in multiple repositories spread across an organization and across geographies. If users can search and access content across all these repositories, organizations can significantly cut down on their costs and improve productivity.
- **Provide control over the entire content life cycle:** Being able to control information from the moment it is created until it is deleted or archived is important both from a compliance perspective as well as from a knowledge management perspective.

ECM is generally considered to be an amalgamation of a significant number of technologies. Information Technology (IT) analyst group Gartner sees the following as elements that make up an ECM solution:

- **Collaboration** for document sharing, supporting project teams. Collaboration addresses the ad hoc, work-in-process segment of the content life cycle.
- **Document management** for check-in/check-out, version control, security, and library services for business documents.
- **Web Content Management** to allow users easy creation of content for online use, managing dynamic content, and content authoring.

- **Records management** for legal or regulatory purposes, long-term filing, and automation of retention and compliance policies
- **Workflow** for supporting business processes and routing content, assigning work tasks and states, and creating audit trails.
- **Document capture and document imaging** for capturing and managing paper documents.

In addition, Microsoft sees the following as important related areas for ECM:

- **Enterprise Portals** leverage content assets from both structured and unstructured data sources for users of the enterprise portal (which can include employees, partners, and customers). EIPs also provide sophisticated content targeting and personalization mechanisms.
- **Enterprise Search** provides the ability to efficiently find content and information regardless of where it exists, by providing a powerful and extensible search engine.

## 2. Why Enterprises Need ECM

Information is the lifeblood of every organization today, and being able to mine content for information and control content through its entire life cycle is of strategic importance to every organization.

Businesses create content with every e-mail message, image, slide, document, voice mail, and video. Not only is the volume of this data huge, but also this unstructured content is complex, messy, and difficult to manage. Moreover, compliance requirements, intellectual property protection, and legal implications make this content potentially risky. To make matters more difficult, an estimated 80 percent of an organization's data is on unmanaged devices such as a laptop, PDA, or desktop.

This problem is growing rapidly: businesses in the last few decades have seen an explosion of data of all kinds. A recent study conducted by Accenture indicates more content will be created in the next two years than in the entire previous history of mankind, and over 93 percent of it will be electronic. This content represents both great challenges and great opportunities.

Microsoft sees ECM continuing to join the mainstream of technology initiatives at the top of IT executives' minds. Recent reporting, records management, and corporate governance requirements like Sarbanes-Oxley have increased awareness about the need for content management and record -keeping capabilities that can be widely used and adopted across an organization. Some of the business imperatives for ECM that Microsoft is repeatedly hearing of from customers and analysts include:

- Control costs and boost productivity
- Gain competitive advantage
- Mitigate business and legal risk

### 2.1 Control costs and boost productivity

Accenture's analysis also shows that dealing with this rush of data represents a significant and often hidden expense – Global 3000 organizations spend between 3 and 5 percent of their revenue managing and delivering corporate content. For a company with \$1 billion revenue, this translates to \$30-50 million dollars annually.

These content management costs arise in any number of ways, particularly in lost productivity. Employees waste time looking for content, recreating lost content, using the wrong or outdated content, converting content from one format to another, and manually assembling content from different data sources. For instance, market watchers IDC recently reported that 40 percent of intranet users couldn't find the information they need to do their jobs on their corporate intranet.

A large majority of these content assets are in formats that simply make it difficult to find and organize. For example, some information is "structured data"—designed from the start to be managed, validated, stored, and secured inside back-end applications and database systems. However, by many current estimates, about 80 percent of content or information within the enterprise is unstructured data, like email or word processing documents, located outside of any central store. What's more, a November 2004 report from the Yankee Group\* estimates that the ratio of unstructured to structured content has increased dramatically and will continue to do so.

Organizations need to ensure that they don't drown in this ocean of data. To control costs and realize value, organizations must therefore capture information as it is

created, without losing valuable details. They need to manage the information once captured, so that it retains its integrity. They must ensure that it is delivered to those who need to see it, and kept from those who must not see it. Moreover, they must store it safely so it can be reused so as to comply with a broad range of regulatory requirements.

Organizations also need to provide sophisticated tools and institute processes that make it easy for people to find what they are looking for. In addition, organizations need to proactively present information that is needed to get the job done “in context” – i.e. right place, right time and right information. This has a direct impact on individual and organizational productivity, and is an important lynchpin of a more nimble organization with superior business insight.

## **2.2 Gain Competitive Advantage**

Beyond the struggle to gain control of costs is the challenge to derive more value from the content they have. Firms must constantly innovate to compete successfully, and finding better ways to capitalize on corporate data assets is shaping up to be a key battleground. The innovation required to stay ahead of the competition necessitates getting ideas to market more quickly, which can only be achieved by sharing knowledge and insights between different members of teams and even different teams.

Being nimble as an organization and having the ability to latch on to every business opportunity requires superior business insight and decision-making ability. This requires access to consistent, accurate, and up-to-date information whenever you need it, regardless of whether the data exists on a file share, on a departmental portal, in a back-end system, or in an e-mail folder.

Doing more with less necessitates improving organizational productivity and effectiveness. Firms need to automate business processes and content management processes to reduce the amount of time spent by employees on mundane, non-value-adding activities such as invoice approvals or manually repurposing content into different formats. Instead, firms should empower employees to focus on strategic tasks that impact the bottom line. These gains can bring not only significant savings, but also increased revenue through improved customer satisfaction and retention.

## **2.3 Mitigate Business and Legal Risk**

As corporate scandals have rocked the public’s faith in major corporations, the response has been legislation such as the Sarbanes-Oxley Act, which puts a new focus on corporate accountability. Also, governments all over the world are passing legislation to allow (or even require) the submission of electronic records to reduce paperwork, open up services to their citizens, increase transparency and accountability, and improve the efficiency of internal processes

With this raft of legislation and spotlight attention from regulators related to corporate governance, the appropriate and effective management of information has gone from being important to being critical. Compliance is no longer a tactical or optional issue. There is a wide range of compliance regulations affecting organizations in a number of industry verticals. Examples of these increased regulations dealing with or requiring the effective management of content include:

- The Health Insurance Portability and Accountability Act (HIPPA)
- Title 21 Code of Federal Regulations (CFR) Part 11
- The Gramm-Leach-Bliley Act (GLBA)

- Basel II
- Public Records Office (PRO)
- Securities and Exchange Commission (SEC) and National Association of Securities Dealers, Inc. (NASD) Regulations for Financial Services Customers
- Environmental Protection Agency (EPA) Regulations
- The DoD 5015.2 STD
- Anti-Money Laundering (AML) Regulations

It is the responsibility of the organization to ensure that the right tools and controls are in place to ensure employees comply with all required legislation. While ECM is not a “magic bullet” for solving the issues of compliance, it is still at the core of any compliance strategy or initiative. Many of the corporate and accounting scandals that occurred recently could have been avoided or mitigated, had the organizations used the right tools and technologies to control, manage, audit, archive, and securely distribute their content.

Indeed, dealing with compliance becomes an even bigger problem if organizations don't have the right tools and technology in place to simplify the process and make it manageable. For instance, many organizations don't have the tools to effectively enforce document retention policies. Managing the security of electronic documents and e-mail still requires IT intervention in many firms. Keeping up with constant regulation changes and communicating them to a global organization is a challenge in itself for many companies.

However, compliance should be seen as a way to not only forestall problems and avoid outside sanctions, but also to improve processes and foster better policies and procedures. Fundamentally, compliance is about working with information more effectively, from conception to archival, ensuring that well-defined processes that can be readily audited are in place, and having the confidence to support a thorough investigation if a failure occurs. Therefore, the silver lining is that any organization that undertakes a strategic compliance initiative will realize many other benefits that come from effective management of information and a better understanding of business processes.

### **3. Common Roadblocks to ECM Success**

ECM solutions have been available in various forms, both as commercial off-the-shelf products as well as custom-developed solutions, since the early 1990s. While ECM implementations have had an overall positive effect for customers, there have been a number of common roadblocks to successful ECM implementations and these have slowed, or in extreme cases caused the failure of, ECM-based projects.

Some common roadblocks examined in this section are:

- Challenge of integration
- User acceptance
- Meeting Diverse Organizational Needs

#### **3.1 Challenge of integration**

The ECM market has historically been fragmented with multiple offerings from many vendors. Customers have accordingly attempted to build an ECM “suite” by buying products and point solutions from multiple vendors. This created some obvious problems for customers, in terms of the additional burden of figuring out how to best connect these disparate systems, how to manage them, and how to derive business value.

As a result, we are now seeing a broad wave of acquisitions and consolidation sweeping the ECM landscape. While this process has weeded out some of the weaker players and helped the remaining vendors bolster their feature set, consolidation hasn’t eliminated the difficulty in making different products work well together. When vendors and consultants acquire a series of point solution products and glue them together with bridging code, the results can be disappointing. What appears to be a unified system can actually be an unstable combination of architectures and technologies, leading to stability problems, higher maintenance costs, and difficulties customizing and extending the solutions.

For instance, the lack of a common design philosophy can often result in duplicate and redundant infrastructure pieces. When you have separate disconnected systems trying to act in concert as a suite, you need separate tools to search them all. Because each system has its own repository, you cannot apply a central compliance plan, and there is no possibility of centralized management – two of the most fundamental requirements for ECM.

Ultimately, managing these separate systems on an ongoing basis and rationalizing the different pieces creates unnecessary additional overhead on IT departments that are already stretched thin. For the customer this means less value delivered and higher total cost of ownership (TCO) as the number of elements in the suite which must be deployed and managed increases.

What is required is an approach where all the core pieces are provided by one single vendor, with a single coherent architecture and set of technologies, in the form of a suite designed from the start to work in an integrated fashion.

#### **3.2 User acceptance**

One critical measure of the business value of a system is the extent to which the users of the system embrace it and use it pervasively for their everyday tasks. How much easier does it make their jobs? How does it impact their productivity, their satisfaction, and their contribution to the bottom line? How much extra effort is required to learn and

use the system? Perhaps more than for other enterprise software systems, success for ECM systems depends on their acceptance by their users.

Therefore, managing change and overcoming corporate culture barriers are important elements of achieving business value from ECM systems. This means finding a way to balance the organization's goals with the user's needs, and fitting in software and technology with the way people work. For instance, using Metadata is universally acknowledged as critical to achieving better search results and increased relevancy for unstructured data such as Word documents and non-text data such as image files. However, if adding metadata becomes a painful chore for end users, they may perceive ECM policies as excessively interfering in their day-to-day tasks. When this happens, users can, and usually will, find a way to work around those policies. For example, when a law firm instituted a document management system that had a clumsy, intrusive interface, they found that a large percentage of documents were tagged as belonging to a single client – which happened to be the default (first) entry in the ECM interface and the quickest way to bypass the system.

Products must be designed to support change, and they must be able to communicate business intent to end users. Software needs to adapt to how people work and live, not the other way around. For instance, one of the world's largest manufacturing companies tried to institute an aggressive e-mail retention and expiration policy. However, the policy demanded too much from employees in terms of changing how they use one of their most important tools, resulting in protest across the organization. Eventually, after a lot of wasted time, money, and effort, the policy was rescinded.

The lesson here is that however compelling the business case might seem, putting a policy in place that is not compatible with the way people work is likely to fail. Change management needs to be approached with a great deal of planning and the utmost caution. By making policy transparent to end users, and by making change non-invasive in the way people work, change management can be implemented much more smoothly and successfully. Technology vendors should be able to embed good work practices into the everyday working style of people. In the case of the metadata example cited above, for example, the solution might be to ensure that the tools and applications that people use to create content on an everyday basis also enable effectively capturing and controlling metadata.

### **3.3 Meeting Diverse Organizational Needs**

In today's world of global organizations, companies have multitudes of groups and divisions, each with their own specific needs. Even when companies invest in ECM systems, it is not a given that these systems can be tailored to meet the needs of specific business units. The business reality is that IT resources are limited. If the ECM system requires IT involvement, professional developers, or consultants to set up new sites and workflow processes, many business needs will be left unaddressed even though the organization has invested in the technology to meet these needs.

An example of this occurred when knowledge workers in the Equity Research (ER) Group at one of the world's largest financial organizations wanted to institute a workflow process to review equity briefings before publishing them. Although their organization had deployed an ECM solution that included the workflow technology the ER group needed, this technology required custom development by the IT department to set up the workflow. However, IT didn't see the group as a priority, and the ER group was forced to continue with a manual process that lacked the fail-safe mechanisms and auditing that a technology-based solution would have offered. If their technology had instead offered end-user oriented tools to set up workflow, members of the ER group

could have taken ownership and set up their own workflow, both meeting their immediate needs and getting more value from the organization's ECM investment.

Another basic fact that companies need to recognize is that to every business rule, there is almost always an exception. In many cases, specific policies do not apply for particular types of content or documents, or to certain groups of people. However, software or technology is often not flexible or intelligent enough to deal with these "exceptions". Instead of having this kind of "exception handling" built into the system (say by being able to mark a certain document as "exempt" from deletion/ expiration rules), users often need to call IT to effect the necessary change, defeating the purpose of the system put in place.

Thus, to really support the needs of a broad organization, ECM tools must enable a self-service approach for employees by making it easy for employees to use the tools and technologies they need to get their jobs done, while operating within the organization's guidelines.

## 4. Microsoft's ECM Investments

### 4.1 Overview

Microsoft is focused on building a world-class enterprise platform with an integrated architecture to serve as the launching pad from to continue to develop broad offerings. Microsoft's foundation for the ECM platform is Windows SharePoint Services (WSS), which is a core component of the Windows Server 2003 platform. WSS provides a common framework for document management and collaboration, as well as a single repository for storing documents of all types, including Web pages and forms. The key components of an ECM solution, such as Web Content Management, Enterprise Search, Document Collaboration, and Enterprise Portal, are provided on top of this platform. Moreover, these components are designed to work together, to be flexible, and to interoperate with other technologies. Microsoft's ecosystem of partners and independent software vendors (ISVs) provides value on top of this framework and provides applications and solutions for specific needs.

Microsoft is aware of the areas for improvement in its current platform, and is investing heavily in these areas to create a robust and integrated platform that customers can rely on and partners can continue to build on. ECM is not a one-release focus for Microsoft. Rather, Microsoft is making significant ongoing strategic investments in supporting the entire life cycle of content, from creation through collaboration, review, publishing, consumption, archiving, and auditing. To support the type of investments required across desktop applications, servers, and platform, all products and technologies associated with the Office system are expected to be released in an orchestrated fashion at the same time, with all dependencies across products in mind.

Here is high-level glimpse into Microsoft's approach, investments, and guiding principles:

#### **Build a unified foundation for enterprise scale ECM**

Microsoft's ECM design-philosophy has been to create an integrated ECM platform based on a common framework of components and technologies, designed from the start for scalability, interoperability and stability. Microsoft is committed to building on its unified architecture to support individuals, teams, and business units, through intranet, extranet, and Internet sites. A unified architecture enables customers to take advantage of the Web part framework, integrated search, integrated user management and user rights, as well as a common store and security model.

Moreover, by having a common architecture, customers can reuse applications, code, and site content and have a common development and deployment experience for developers and IT professionals respectively. This amounts to easier content and knowledge sharing among employees, customers, and partners, and lower hardware costs through server consolidation. It also means rapid time to deployment, low training costs, and a minimized need to deploy and maintain multiple solutions for different business functions.

The next release will provide IT professionals with the tools and applications they need to provide great technology solutions and "always available" service to their internal customers. It will focus on providing tools for end users that make it unnecessary to involve IT in everyday tasks, thereby freeing up IT resources to spend more time on strategic tasks and technology solutions.

Microsoft is investing in common services where appropriate to enable features across a range of applications. At a high level, the Microsoft philosophy for the next release is to

incorporate ECM, collaboration, and portal capabilities as part of one integrated platform with out-of-the-box features and business value.

### **Delivering value “out of the box”**

While every organization is different and has its unique needs, there is a fundamental foundation of business requirements common to every organization. Microsoft’s approach is to provide the ability to deploy and provision solutions for these common needs out-of-the-box, as quickly, efficiently, and cost-effectively as possible.

As an example, most organizations have a need for implementing simple serial / parallel approval workflow processes for everyday tasks and transactions. By incorporating this kind of base-level functionality into the platform and providing it out of the box, Microsoft makes it possible for business users to take ownership of the system and change it to meet their needs – without the need for custom development or consulting services or IT involvement.

Moreover, providing great integrated deployment, administration, and manageability for applications out of the box will play a key role in keeping Microsoft ahead of the curve in terms of cost of ownership.

### **Support the flexibility and usability demanded for user acceptance**

A fundamental tenet of Microsoft’s design philosophy is to provide infrastructure and applications fine-tuned to the needs of different audiences within organizations. During the planning and design processes, Microsoft took great efforts to include input and perspective from multiple audiences such as business decision makers, technical decision makers, IT Professionals and Information Workers, as well as its rich ecosystem of partners and ISVs.

This approach works to maximize user adoption, by providing tools that are not only broadly applicable and easy to learn and use, but also deliver the most widely required content management features. By taking advantage of the world’s leading desktop productivity system, users can charge forward with applications (like Microsoft Office and Microsoft Outlook) that they are already comfortable with. This has a huge impact on user adoption of ECM-based business solutions, leading in turn to a quick and handsome return on investment.

### **Design for heterogeneous environments**

The Technology and IT landscape today features a myriad of choices, and customers will always have a number of different systems and applications running in their organizations. Being able to coexist and interoperate with these systems is fundamental to Microsoft’s design philosophy. Microsoft is committed to openness of architecture, whether it is through published APIs, a design philosophy based on common protocols and open standards like XML, or support for Web services.

Integrating with customer hardware, software, and network environments is and always will be a critical requirement. Microsoft is committed to making it easy for customers to leverage their existing IT investments by providing the integration points and “hooks” for interoperability. Of course, Microsoft will continue to add to the already extensive list of Web parts for integration with common applications like SAP and Siebel, so ECM can extend smoothly into every aspect of the organization’s working life.

### **Design for extensibility**

While committed to delivering value out of the box, Microsoft understands that every industry and organization has unique needs. Rather than treating these needs as afterthoughts, Microsoft product teams have devoted substantial efforts to understanding these types of needs and tailoring product extensibility to support them. For example, ideas of what should happen when a document expires seem to differ from

customer to customer. Rather than making an inflexible design decision, Microsoft ECM treats document expiration as an extensible event. Microsoft provides several options out of the box, and solution providers can supplement these options with ones that fit an organization's unique business needs.

This solution allows the system to adapt to different needs across the organization and to changing requirements as the company grows. Of course, this extensibility is built on the Microsoft platform, which means companies can take advantage of the enormous breadth of resources and tools this platform provides.

## Conclusion

Microsoft is committed to ECM as it joins the mainstream of technology initiatives at the top of IT executives' minds and becomes a key element impacting the CEO and CFO agenda. The content created, consumed, and managed in the Office System drives business communication and so is an extremely valuable business asset. Evidence clearly demonstrates that customers are experiencing significant value from the current generation of Microsoft technologies as they apply to solving key elements of their ECM challenges. However, the increasing volume of content and number of people involved in its creation, review, and consumption, combined with increasing regulatory requirements, pose new challenges throughout the life cycle of content. Microsoft's vision is to ensure that customers derive the most value from their content and their people, by supporting the entire content life cycle from creation, through collaboration, management, publication, reuse, archiving, and expiration.

Consistent with Microsoft's overall philosophy and customer expectations, the ongoing investments in the enterprise content life cycle will deliver out-of-the-box capabilities that deliver value to the broad Microsoft customer base. While Microsoft's goal is to provide a broadly applicable platform for enterprise content management, enterprise customers may have specific needs based on their organization or vertical industry. Therefore, our complementary design goal is to provide extensibility across the elements of the Office System so that customers and partners can build custom solutions. Of course, Microsoft will continue to support the flexibility and familiar user interface critical to user acceptance.

Microsoft is assuming a role as a leader in the next generation of integrated user-oriented ECM systems. To support its ECM vision, Microsoft is making investments for the next release across the entire Office System suite, driven by customer requirements for a "better together" experience to support the complete content life cycle vision. This will result in new capabilities in the products like Microsoft Word, PowerPoint, Excel, and InfoPath; and investments in server technology like Microsoft SharePoint Portal Server and Microsoft Exchange Server. Windows SharePoint Services (which is available as part of Windows Server 2003) provides the platform on which these more advanced server capabilities are based, and also provides collaboration capabilities working directly with the desktop applications. Microsoft is executing on its strategic direction in offering a full-featured, end-to-end enterprise content management system, providing organizations with an essential, fully-featured foundation for managing mission-critical content.

## Appendix A: Current Microsoft ECM Components and Products

At the core of any ECM offering is an open, scalable Repository technology. Microsoft **Windows SharePoint Services (WSS)** is that repository. Delivered as part of the Windows Server Operating System (Windows Server 2003 and later), WSS provides an open, scalable repository architecture. Key attributes include:

- Standard Library Services – Check-in, Check-out, Version Control
- Accepts documents/objects of any electronic format.
- Unlimited object history
- Full-text indexing and searching of the repository
- Leverages Active Directory for authentication, user and group information.
- Integration with leading authoring tools such as Microsoft Office
- Integration with leading Email applications such as Exchange Server

WSS can be deployed in small, medium, and large server-farm configurations and allows for LAN and WAN network access. WSS leverages Microsoft SQL Server for its storage and system administration, therefore leveraging not only technology, but also the skills of the IT Department, and backup/recovery and scalability features of Microsoft SQL Server. Documents/objects stored in WSS are brought in as Binary Large Objects (BLOBS) in the WSS repository, reducing administrative overhead around Shared Drives and File Servers that most leading ECM solutions face today.

In addition to Windows SharePoint Services, Microsoft released a number of new products that provided ECM functional capabilities, and made technology enhancements to existing products to complete the Microsoft ECM offerings. The table below lists those products and the key ECM features and functions.

All of these products are part of the Microsoft ECM framework because they:

- are Microsoft products, developed and supported by Microsoft
- are based on the .NET architecture
- have Commercial Off The Shelf integration with WSS
- provide core ECM functionality

ECM Functional Component	Microsoft ECM Product	Key Features/Functions
Document Management - Authoring Applications integration with Repository	Office (2003 and later)	<ul style="list-style-type: none"> <li>• Word, Excel and PowerPoint have built-in features for integration to WSS from the SharePoint Task Pane.</li> <li>• Automatic two-way sharing of Office Properties with WSS metadata.</li> </ul>

ECM Functional Component	Microsoft ECM Product	Key Features/Functions
Collaboration	WSS Collaboration Features	WSS contains a number of collaboration tools including: <ul style="list-style-type: none"> <li>• Discussion Threads</li> <li>• Announcements</li> <li>• Events</li> <li>• Tasks</li> <li>• Calendar</li> <li>• Alerts</li> <li>• Surveys</li> </ul>
Electronic Forms	InfoPath	XML-based Electronic Forms capability.
Rights Management	Rights Management Server	Digital Rights Management for objects inside or external to the WSS repository.
Enterprise Search	SharePoint Portal Server	Built-in capability to full-text index and search: <ul style="list-style-type: none"> <li>• Multiple WSS repositories</li> <li>• Exchange Servers</li> <li>• Lotus Notes servers</li> <li>• File systems Web sites (intranet and Internet)</li> </ul> Built-in capability to support Federated Searching. Capability to develop filters to index and search third-party repositories
Web Content Management	Content Management Server	<ul style="list-style-type: none"> <li>• Provides ability to quickly and efficiently build, deploy, and maintain mission-critical content-rich Web sites.</li> <li>• Streamlines the Web publishing process, reducing the need for costly site maintenance, empowering business users to manage their own content.</li> <li>• Source objects can be stored / surfaced from WSS with integration pack</li> </ul>

ECM Functional Component	Microsoft ECM Product	Key Features/Functions
Enterprise Portal	SharePoint Portal Server	Enterprise Portal with support for: <ul style="list-style-type: none"> <li>• Channels</li> <li>• Enterprise Search</li> <li>• Management of multiple WSS repositories</li> <li>• Single Sign On (SSO) to third-party applications</li> <li>• Web Services support</li> <li>• Personal sites/pages</li> </ul>
Business Process Management (BM) and Enterprise Application Integration (EAI)	BizTalk Server	<ul style="list-style-type: none"> <li>• Full range of BPM/EAI functionality</li> <li>• COTS integration to the WSS Repository</li> </ul>
Enterprise Messaging	Exchange Server and Outlook	Exchange and Outlook now support and are supported by WSS in a number of ways: <ul style="list-style-type: none"> <li>• WSS Calendars can be synchronized with Outlook Calendars</li> <li>• When sending messages, users have the option of placing attachments in the WSS repository, and having the message's attachment replaced by a WSS URL.</li> </ul> Meetings in Outlook can automatically create a Team Space in WSS.
Instant Messaging & Presence	Live Communications Server	Instant Messaging & Presence support for <ul style="list-style-type: none"> <li>• Windows SharePoint Services</li> <li>• Office</li> <li>• Outlook</li> </ul> Gateway to third-party Instant Messaging protocols.

## Appendix B: Product Details

At the heart of the strategy are a number of key products: **SharePoint Portal Server** ([www.microsoft.com/sharepoint](http://www.microsoft.com/sharepoint)) – A scalable portal server that connects people, teams, and knowledge across business processes.

- **SharePoint Portal Server** integrates information from various systems into one secure solution through single sign-on and enterprise application integration capabilities.
- **Microsoft Office and Office System** – The tool with which most enterprise content is created. Together with SharePoint, it is also the interface for all relevant ECM functionality that employees can use in their daily work.
- **Windows SharePoint Services (WSS)** – A highly scalable and easy-to-use solution for document collaboration that includes features such as check-in and check-out functionality, version history, custom metadata, and flexible, customizable views

WSS can be deployed in small, medium, and large server-farm configurations, and allows for LAN and WAN network access. In a unique design, WSS leverages Microsoft SQL Server for its storage and system administration, therefore leveraging not only technology, but also the skills of the IT department, and the backup and recovery features of SQL Server.

A unique feature is that documents/objects stored in WSS are brought in as Binary Large Objects (BLOBS) in the WSS repository, reducing administrative overhead around shared drives and file servers, which most leading ECM vendors face today.

- **BizTalk Server** ([www.microsoft.com/biztalk](http://www.microsoft.com/biztalk)) – An integration server product that allows organizations to develop, deploy, and manage integrated business processes and XML-based Web services. BizTalk supports the goal of creating business processes that unite separate applications into a coherent whole and accomplishes this by enabling organizations to connect diverse applications, and then to graphically create and modify business processes that use the services that those applications provide.

BizTalk Server supports a "hub-and-spoke" architecture for Enterprise Application Integration (EAI) and Business-to-Business (B2B) integration that can substantially reduce the number of integration points required. This in turn can reduce the amount of engineering required to create and maintain integration solutions. This becomes particularly important for large companies integrating many systems or inter-company business networks that involve transactions among large numbers of trading partners.

The BizTalk engine, made up of the messaging and orchestration components (or business logic code), is a runtime platform that manages and runs BizTalk "applications" in real time. BizTalk applications comprise the specific message definitions, message exchanges and processing instructions, and orchestrations that define an end-to-end business process. BizTalk provides an array of graphical tools and logical building blocks that business analysts and BizTalk application developers use to specify and create BizTalk applications. .

BizTalk also offers support for Web services. With its standards-based approach to messaging and data exchange, through use of XML, Web services have quickly gained popularity with businesses looking to integrate applications and exchange information with other businesses over the Internet. BizTalk support for Web services can take a variety of forms; for example, BizTalk can route messages between proprietary applications (with proprietary interfaces and data formats) and applications that expose Web services interfaces. In addition, BizTalk developers can easily expose orchestrations

as Web services, which offers an effective means of creating Web services interfaces for business processes or proprietary applications that don't natively provide them.

- **Content Management Server** – A comprehensive solution for managing Web content. Powered by Microsoft .NET–connected technology, CMS enables companies to quickly and efficiently build, deploy, and maintain mission critical content-rich Web sites. By streamlining the Web publishing process, Content Management Server can reduce the need for costly site maintenance, empowering business users to manage their own content
- **Rights Management Server (RMS)** – Adds value to any organization's security mix by providing enterprise users with a flexible, easy way to control most of the types of digital information they typically create and use. For online information (such as database-backed dynamic content data on benefits and payroll intranet sites or enterprise information portals), as well as e-mail communications and documents, RMS can help enforce policies such as restricting the ability to print, forward, and edit data. Permissions can be set to expire at a specific point, such as a number of days after publishing or at regular intervals, requiring acquisition of a new license. In addition, enterprise policies can be enforced and centrally managed. Templates for policies such as "company confidential" or "attorney-client privilege" are easy to create and deploy.

## Appendix C. Microsoft's ECM Partner Strategy

Microsoft will continue to make investments and add to the strength of the overall platform by incorporating core services and infrastructure as part of this platform. At the same time, Microsoft is working very closely with its most important partners and they will continue to provide sophisticated vertical solutions and add value on top of the Microsoft platform. These solutions will obviously fit tightly with the Microsoft ECM framework and at the same time address important customer needs, and Microsoft will continue to invest in strategic relationships with key technology and service partners.

The following ECM capabilities/functions are provided by Microsoft Partners:

- **Electronic Records Management** (including DoD 5015.2 Certification)
- **Imaging** including batch and high volume scanning, Optical Character Recognition (OCR) and Intelligent Character Recognition (ICR).
- **High-end Document Management and Document Publishing** including sub-document component management, multi-level versioning, and Classified Documents (DoD 5015.2 Chapter 4) support, and complex Document Publishing.
- **Human Workflow** including serial and parallel workflows for objects stored in WSS and stored externally from WSS that rely on pre-configured workflows with human-to-human and human-to-system interaction.
- **Content Integration** – the ability to search third-party Content Repositories and move items to/from WSS and third-party repositories.
- **Digital Asset Management** – including management of large digital assets such as digital videos, very large digital images and other large digital objects.

## Appendix D. Terms, Acronyms & Abbreviations

AD	Microsoft Active Directory
AIIM	The Enterprise Content Management Association ( <a href="http://www.aiim.org">www.aiim.org</a> )
BizTalk	Microsoft BizTalk, an EAI and BPM product
BPM	Business Process Management
COTS	Commercial Off The Shelf
EAI	Enterprise Application Integration
ECM	Enterprise Content Management. The technologies, tools, and methods used to capture, manage, store, preserve, and deliver content across an enterprise. At the most basic level, ECM tools and strategies allow the management of an organization's unstructured information, wherever that information exists. Other terms, which are practically interchangeable with ECM, include integrated document management, digital asset management, integrated document and content management, and total content management. Regardless of the precise terminology, ECM capabilities manage traditional content types (images, office documents, graphics, drawings, and print streams) as well as the new electronic objects (Web pages and content, e-mail, video, and rich media assets) throughout the life cycle of that content.
MS	Microsoft
MS-ECM	Microsoft Enterprise Content Management Framework. A product set and partnering strategy for assisting customers in delivering successful ECM solutions.
SharePoint	A set of ECM Products and Technologies from Microsoft. See also Windows SharePoint Services (WSS) and SharePoint Portal Server (SPS).
SPS	SharePoint Portal Server
MS-SQL	Microsoft SQL Database
URL	Universal Resource Locator
WSS	Windows SharePoint Services

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