

Enterprise Content Management

A Solution for Every Information Worker

A Microsoft White Paper

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Executive Summary

Tremendous growth in the volume of information within the enterprise, the need to differentiate through the creation and protection of intellectual capital combined with increased legislation requiring organizations to provide auditable records have made Enterprise Content Management (ECM) a strategic imperative for organizations. This white paper is aimed at organizations that are considering implementing an ECM system, organizations that are in the process of implementing ECM systems, and organizations that are rethinking ECM practices as they refine their content management goals.

This white paper will examine the state of content chaos in many organizations, providing a view of the major factors such as legislative requirements and information management goals that must drive the development of ECM solutions. It will also review the challenges that many organizations face in making information quickly and easily available to users all levels and in preserving that information for audit and compliance purposes. These challenges will be explored both from a technology perspective as well as from a user-adoption perspective.

This white paper will consider the overall importance of developing an integrated platform that meets specific needs in the major ECM areas: records management, document management, web content management and forms management, and ensuring that the end results from each of these initiatives benefit information workers across the organization.

Finally, this paper provides a view of how Microsoft is driving innovation in Enterprise Content Management with the upcoming release of Office "12" SharePoint servers that provide a broad set of ECM functionality on a unified platform which scales to meet the needs of the most intensive ECM tasks and makes ECM available to every information worker in the organization.

1. Overview of Enterprise Content Management Drivers and Challenges

By now the notion of Enterprise Content Management is hardly a new concept for most organizations. As the digital age has facilitated communications, it has brought with it a greater wealth of “content” than ever, in a multitude of formats such as images, text documents, web pages, spreadsheets, presentations, graphics, drawings, e-mail, video and multimedia. This explosion of structured and unstructured content can be complex, and difficult to manage. And the problem is growing rapidly: 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. Moreover, these electronic documents must be integrated with an already complex assortment of paper-based information.

Besides the unwieldy bulk of information, organizations must consider the fact that the ECM life cycle is extensive, moving information from creation and capture, to management, to sharing and collaboration, to publication and finally, archival or disposal. All this has forced organizations to revisit the challenge of content management within the enterprise and move beyond traditional filing and document repository systems.

Several major drivers influence ECM platform development. At the forefront are pieces of legislation like the Sarbanes-Oxley Act, which has moved ECM from being a nice-to-have system to being a must-have system. Enforceable document retention policies, systems for managing unstructured information, and consistent records management are all key requirements from a legislative standpoint.

Yet while legislative requirements and audit concerns may be the inciting driver for many companies, several other factors are also influential. First there is the obvious need to exert control over an abundant volume of records and documents, with the resulting benefit of reducing task duplication and minimizing time spent wasted looking for old documents (or worse, recreating old records or documents from scratch). Then there is the need to automate business processes in order to facilitate content handling and replace existing manual paper processing, which ultimately results in streamlining workloads and savings in terms of employee time. Finally, organizations are looking to ECM solutions to help with the process of authoring and publishing this information to the web without burdening the IT department.

No doubt many organizations have already spent time considering strategies for how to structure their content both from a records keeping and a document management standpoint. Some may even have implemented platforms for organizing this information, to varying degrees of success and user satisfaction. Yet in these preliminary considerations and tentative implementations, major challenges to ECM success remind organizations to be thoughtful in finding a solution that is right for them. For instance, among the most overwhelming challenges is the need to ensure user acceptance. Even if users are on board with implementing an ECM solution in principle, they will not embrace a system unless it integrates nicely with their current work style. Such a system must be intuitive to use, and not require users to rely heavily on the IT department. The solution must also fit into the organizational culture; for instance an organization that operates with strong individual teams is not likely to embrace a solution that rolls out enterprise wide. Yet these same departments may embrace an overall solution that makes collaboration easier for their team.

Explicit requirements within each of the major categories of document management, records management, web content management and forms management need to be addressed in the context of an overall ECM strategy. For instance, in dealing with document management, some of the particular requirements include establishing standardized content types, version control, workflow process, and collaboration. In records management, the requirements include establishing retention and expiration policies, and minimizing outdated information within the organization. In terms of web content management, the requirements include finding a way for non-technical personnel to take control of web sites within their departments without the need to constantly rely on the IT department. These specific requirements and more should all be able to be addressed with an overall ECM solution.

Another challenge that an organization needs to overcome is integrating the various components of ECM. Typically an organization starts with a need for one or more ECM components to meet a particular business need but once this component has been deployed, the requirements grow to include other components as well. For example, an organization may start by implementing a records management solution and then quickly find that they also need web publishing functionality first for their intranet portal and then for their internet. So how does an organization gradually build up it's ECM strategy by deploying these components in a way that doesn't require constant user re-training and a architectural and deployment challenge for IT?

An organization usually has one or more ECM solutions already in place that have been deployed in a particular department to address very specific needs. As the organization moves towards having a companywide ECM strategy, it becomes important for any new solution to be able to interoperate with existing solutions using industry standards.

An ECM solution that is scalable, easy to use, integrated and interoperable with other applications ultimately has the best chance of being successful. Since user adoption is key to the system's success, ensuring that users recognize ECM's usefulness in streamlining their own workloads is key.

2. Keys to Successful ECM

Anticipating and responding to potential ECM challenges goes a long way to ensuring a successful implementation. Often these challenges can cause organizations to feel paralyzed for fear of choosing the wrong system, but at the heart of that reaction is sometimes a failure to drill down and figure out what the challenge really entails. While ECM goals may be expressed with clarity (to audit-proof records, to enhance collaboration) ECM challenges are generally more vague and elusive. What does “user acceptance” mean? An organization knows that user acceptance is key, but may be unable to predict the aspects of a system that would trigger that resistance in their particular organization. By breaking down some of the barriers to success more directly, the real requirements for overcoming each become clearer. Three major keys to successful ECM implementation will be examined in greater detail here: firstly the elusive user acceptance, secondly the need to find a solution that meets diverse organizational needs, and thirdly the need to find solutions to minimize the burden on IT.

2.1 Maximize User Acceptance

Perhaps the most critical factor in ECM success is how well a system is embraced by its users. Even if every other ECM goal is met, any system that failed in this regard will have limited success. On the flipside, users will extol a system that they perceive as streamlining their workday, improving their productivity, and making their jobs easier.

So how can an organization ensure user acceptance? Start by considering the individual user’s goals and needs. Most users already have more work than hours in the day, and may not be enthusiastic about a system that adds to the complexity of their tasks, so a successful ECM solution is one that will fit into the user’s routine rather than making the user change to suit the system. If users are asked to add properties to a document for instance they will do so more willingly if the opportunity to add these is provided right within the authoring application they are working on.

Systems that require minimal training and enable workers to proceed on their own will ultimately be embraced. Familiar and intuitive interfaces will also help users to accept the system as something that is merely an extension of their current workload rather than an entirely new procedure. For example, providing easy-to-use authoring tools for creating web content and automating the publishing process encourages business users to embrace ECM and use the web to communicate with their customers.

Finally, user acceptance will be fastest if users actually recognize the ECM solution as making their personal work life more efficient and streamlined. Solutions that help them find documents more quickly, that expedite approvals processes, and that minimize task duplication will be embraced and championed.

2.2 Meet Diverse Organizational Needs with a Unified Solution

Finding a suitable ECM system may require a lot of consideration, yet ideally once that choice is made that solution will suit an organization’s ECM needs for many years to come. Exercising some foresight as to the long-term goals for the ECM solution is therefore key. While the initial requirement for ECM development may be limited to a single business function or process, it makes sense to choose a solution that is scalable and could potentially meet wider needs down the road.

With a scalable, unified solution, the organization is free to ease their users into the content management process, for instance by starting with a records management initiative that performs the double duty of immediately ensuring compliance but also getting users accustomed to the system. As users realize the benefit of the records management system, the organization can then proceed to deploy document management or web content management functionality. An integrated solution is critical to this scenario, allowing the second and third deployments to occur smoothly, without extensive IT investment or user retraining. The goal of a single coherent ECM architecture is inherent in this overall approach.

At a macro level, meeting diverse needs means selecting a solution that is highly configurable and a deployment that fits into the organization's culture. If the organization works most effectively in teams, a departmental or team-based deployment may be an effective starting point, with a larger overall deployment to follow. In this type of culture, the teams will be more likely to embrace an organization-wide rollout if they first witness its success within their department. On the other hand if the organization is centralized and accustomed to systems, an enterprise-wide rollout may be most effective from the start. Choosing a system that is extensible enough to be deployed in either manner will provide the greatest flexibility. Rather than implementing and supporting a multitude of solutions, a unified, extensible system will ultimately mean less of an overall learning curve and again minimal impact on IT.

Another reality of an organization's IT environment is the multitude of applications that are currently in place to support different business processes. An ECM solution that integrates easily with a company's existing applications using industry standards will ultimately have the best chance of success. This way an organization can continue to reap the benefits of their existing applications that may serve specific functional areas as they deploy an enterprise wide ECM strategy.

Lastly, while an out-of-the-box solution will handle most functions, organizations will have some need to build functionality that is specific to their vertical or compliance needs. As such it is important to have a solution that is configurable and customizable without excessive deployments costs or IT/developer training.

2.3 Minimize the Burden on IT

ECM also presents a great challenge in terms of implementation. Every solution will no doubt have some bumps in the road to user adoption, but the best fit will be one that minimizes IT input and empowers users to integrate the solution into their own work schedules. If the ECM solution requires extensive IT involvement, professional developers, or consultants to set up new sites and workflow processes, many business needs will be left unresolved even though the organization has invested in the technology to meet these needs. Providing a solution with a manageable learning curve and minimal IT reliance is therefore key.

By making the responsibility for records management an easy extension of users existing workflow, an effective system will distribute the responsibility for ECM more evenly across the organization instead of burdening IT. Charging records keeping and document organization to the users most familiar with the records makes sense also from the standpoint that those users will derive the greatest benefit from the organization and so will have the greatest personal investment and interest in making sure those records are updated day-to-day.

Perhaps one of the most currently dismal IT bottlenecks is in the area of web updating. Finding an ECM solution that enables non-technical personnel to take control of their department's web properties will not only minimize IT time expenditures, but will give

those departments a new confidence to view their web properties as an opportunity rather than a burden. Neglected intranets may be revitalized and actually become the hubs for information sharing that they were meant to be when the departments that benefit from their use are in charge of their updating. Using web sites for business development will be more attractive for departments when they realize that they will not need to approach IT every time they want to try out a new initiative. Web content management systems that have the quality controls built in instill greater confidence in managers who are concerned about new pages matching the high standards already set in the initial site development.

Besides empowering users to be self-reliant and minimizing IT support calls, a solution that is well integrated allows IT to manage a larger system in a centralized manner. Centralized deployment enables the IT department to manage the system consistently across all areas using common tools and deployment models, an equally important time savings for IT.

3. ECM from Microsoft

3.1 Overview

With the release of Office System "12", Microsoft has built a world-class enterprise ECM platform with an integrated architecture that anticipates the recognized challenges of enterprise content management. As part of the Office "12" SharePoint servers due to be released in the second half of calendar year 2006, Microsoft will provide comprehensive ECM capabilities to make its overall ECM vision available to all organizations.

With this solid foundation, Microsoft's ECM offering will provide organizations with an integrated solution for managing the entire lifecycle of different type of content including documents, forms, images, e-mail, IM and more. The key components of an ECM solution, such as web content management, records management, and document management/collaboration, search and workflow will be provided on this unified platform. Moreover, these components are designed to work together, to be flexible, and to interoperate with other technologies.

User acceptance and uptake will be increased thanks to an intuitive interface that integrates with common Microsoft applications such as Word, Outlook, FrontPage and web browsers. Reliance on IT is minimized thanks to a familiar interface that allows users to make ECM an extension of their normal workload, and IT maintenance time is further reduced by the fact that the solution can be centrally deployed and managed using common tools and services. Finally, the solution has been designed with great flexibility and scalability to suit any organization's pace, whether it is deployed for a particular team or task, or throughout the organization.

Microsoft's overall vision for ECM in Office "12" SharePoint servers is based on the following tenets:

Deliver comprehensive functionality on a unified foundation

Microsoft's ECM design philosophy has been to create an integrated ECM platform based on a common framework of components and technologies, designed for scalability, interoperability and stability.. A unified architecture provides a common set of services like the web part framework, integrated search, integrated user management and user rights, digital rights management, workflow, security model and collaboration as well as a unified repository infrastructure for storing ECM objects of all types and sizes: Documents, E-mails, Forms, Images, Web Content Objects, Discussion Threads, Lists, Web Links, etc. This ensures integration and consistency across the various ECM components like Document management, Records management, Web content management and Forms management. Microsoft's unified ECM architecture also and supports individuals, teams, and business units, through intranet, extranet, and internet sites without requiring the use of disparate systems for these different scenarios.

Thanks to this common architecture, customers can reuse applications, code, and site content, enabling a common development and deployment experience for developers and IT professionals respectively. It also means rapid deployment, low training costs, and minimizes the burden on IT to deploy and maintain multiple solutions for different business functions.

Design for widespread user adoption

In order to realize its vision for making ECM a solution for every information worker, Microsoft's ECM offering has been designed with ease of use in mind. This ease of use

comes from tools and interfaces that are already familiar to users and don't require a lot of training. By basing its ECM solution on the already popular SharePoint Products and Technologies environment, Microsoft offers users a recognizable browser based interface that is the same, irrespective of the type of content that the user works with.

Deep integration with the Microsoft Office environment makes ECM a natural extension of the authoring process and provides users with an easy way to adopt and support an organization's ECM strategy. With this integration, the required adjustment will be minimal—users will simply be adding on to their routine documents rather than having to learn new processes. While the ECM capabilities are accessible thru web browsers and previous versions of Microsoft Office, there are a number of new integration points with the Office "12" client designed for information workers. These include starting a workflow from within the File menu of the client application, notifying users of a pending workflow task, exposing document properties to the user via a document information panel, displaying site policies on the document and taking library files offline in Microsoft Outlook.

Design for heterogeneous environments

Being able to coexist and interoperate with the myriad of systems available to customers today 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, so ECM can extend smoothly into every aspect of the organization's working life.

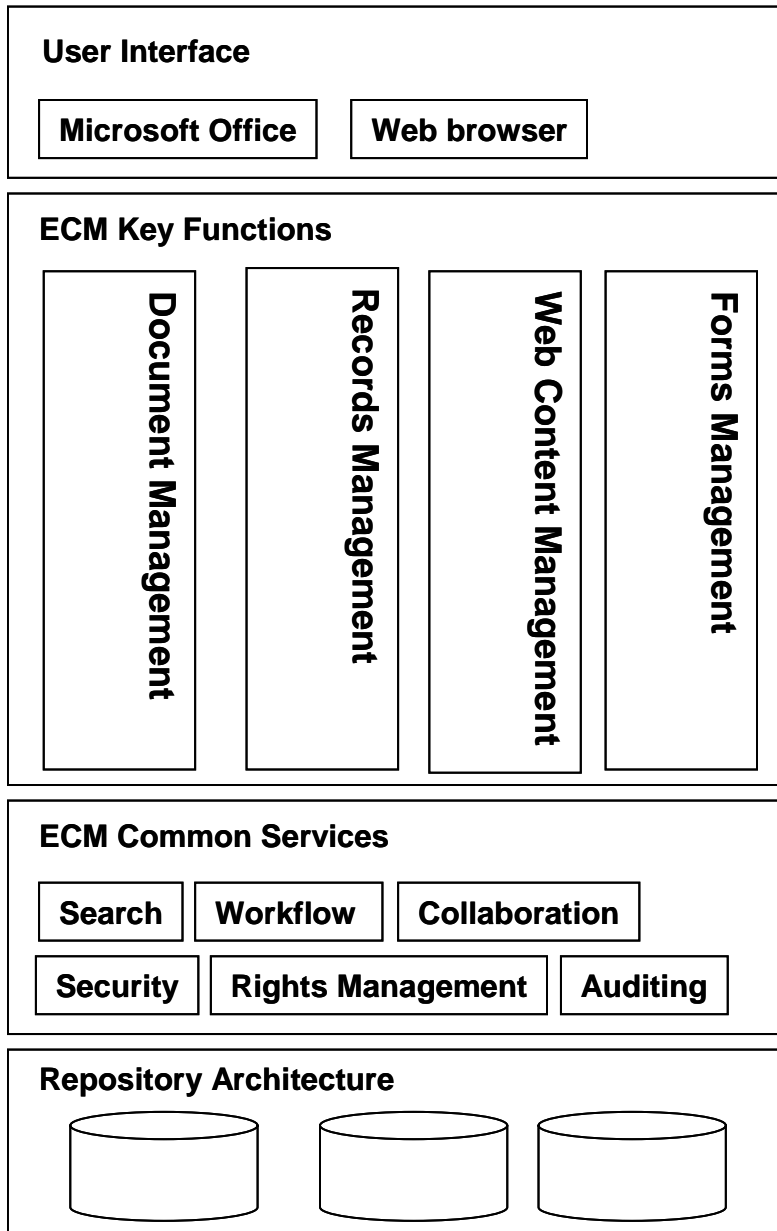
Design for maximum flexibility

While committed to delivering a comprehensive set of ECM capabilities 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. This extensibility ranges from simple configurability of out of the box capabilities to customization for specific needs using familiar development environments like Microsoft FrontPage and Visual Studio 2005.

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. Similarly, organizations can build their own content types, policies and workflows within Microsoft ECM framework to suit their individual needs. In addition, Microsoft supports an ecosystem of partners and independent software vendors (ISVs), which provide applications and solutions for specific needs

3.2 Key Components of Microsoft's ECM offering

The figure below represents a conceptual view of the ECM capabilities in Office "12" SharePoint servers supported by the next version of Windows SharePoint Services (WSS) and the Office desktop application suite.



The next few sections describe the various ECM functions provided by Microsoft along with the common services that support them.

3.3 Document Management Capabilities

No matter what departments they work in, every user within an organization will be familiar with the various concerns related to document management. Consider the life cycle of the average document. First the document is created, then saved, then perhaps shared with other users, then perhaps modified by other users. New versions are developed, and all must be tracked and organized.

Microsoft's ECM solution helps organizations realize their document management goals by enabling appropriate policies at every step of the document's life cycle. Centralized repositories improve information discovery and policies can be set that facilitate the document's tracking throughout the organization using labels and barcodes. Additionally this centralized and managed storage results in an increased ability to predict storage requirements and better protect information assets against unauthorized use and inadvertent loss via item level security and server side Information Rights Management.

Microsoft's document management capability harnesses the collective expertise of the organization and facilitates workflow through collaborative tools such as document check-in and check-out, version control, and workflows to automate the approval/review processes.

3.4 Records Management Capabilities

Records management has long suffered from being marginalized as a secondary task—only now with the need to ensure compliance with government regulations such as the Sarbanes-Oxley Act are organizations starting to prioritize this important aspect of the business cycle. Imperatives in this area include the need for clearly assigned records management responsibility overall and within the departments; the need for continuously updated records that minimize outdated information within the organization, and of course the ultimate need to maximize transparency and protect the organization from audit and legal worries. And finally, a good records management policy ensures the preservation of vital company information that ensures business continuity in the case of disaster.

Records management capabilities in Office "12" SharePoint servers give records managers the ability to set up a records repository according to the organization's file plan. This repository exhibits "vault" behavior which ensures that the records in it are not altered in any way. Multiple libraries for organizing different types of business records can be created and retention policies can be set based on the retention schedules. Records can be captured from external sources like document management systems, e-mail servers and Microsoft Outlook and routed to the correct location in the repository. Physical records can be managed as well. The system also provides the ability to specify an action when the expiration date is reached which either disposes the record or starts a workflow that can allow the records manager to take action like moving this record to a long term archive. Auditing policies can be turned on to log all activity against a record library and administrators have the ability to see reports on the usage. The "Hold" functionality assists in managing the legal discovery process by superseding the retention policy on a record under discovery, so that it is not disposed off even when the expiration trigger is reached.

3.5 Web Content Management Capabilities

The major goal of Microsoft's web content management system is to help businesses effectively communicate with employees, partners, and customers, to preserve corporate branding and look and feel, and to put publishing power into the hands of

business users. Microsoft's web content management solution enables organizations to easily manage multiple, multilingual sites and mobile devices content, while ensuring that these sites can be updated in a timely manner.

Web content management capabilities in Office "12" SharePoint servers include rich authoring capabilities for business users using a simple browser based editor. Authoring can be done in the context of the web page giving authors a much better visual experience of the process. Microsoft Word can also be used as an authoring tool and conversion functionality translates these pages to HTML. Out of the box workflows are available to submit the content for approval before it is published to the web site. The system provides complete flexibility in controlling the look and feel of the site as well as separating the look and feel of the site from the content. Navigation controls are provided out of the box and site navigation is configurable with many options. Completely customizable CSS-based styling of all aspects of the site provides further control over the look and feel. A multi-stage publishing model provides authors with a simple way to publish content to multiple web sites by allowing the Site Manager to set up automatic publishing of pages to the web site from the staging system at regular intervals. A Quick Deploy capability is also enabled which allows authors to immediately move content from staging to production without requiring emergency help from IT. This is particularly useful for content like breaking news which needs to be published immediately.

Web content management capabilities also include a site variation management system that enables users to manage the site in several forms, publish in multiple languages, and push content to mobile devices. A new Site manager console provides a file explorer like view of the site content. Site Managers can use this console to perform batch actions (like submit for approval) on a large number of items as well as run reports across multiple sites in a particular site collection.

Organizations can quickly establish a web presence via starter templates for Internet and intranet sites. The performance of the system has been optimized to support highly scalable websites. Anonymous users are supported for general access while forms based authentication is supported against a variety of membership systems. Out-of-the-box support is provided for Active Directory, Active Directory in Application Mode (ADAM) as well as LDAP. Authenticated members can get a personalized experience.

3.6 Forms Management

Forms are a key component of any business process and are typically used to capture and validate the data driving the process. They usually hide the complexities of the business process that sits behind it. Forms Services in Office "12" servers provide the ability to create forms that can be filled out with a variety of web browsers enabling a large number of people to initiate a business process such as filling out a loan application or entering a customer service request. This can happen via the internet, extranet or intranet. New forms can be created using pre-designed template parts to ensure consistency across all form solutions and use pre-configured data connections to speed up forms solution design

Conclusion

As enterprise content management becomes a top priority for CEOs and IT executives alike, Microsoft is making an important commitment to ECM solutions.

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.

Since maximum user adoption is so crucial to ECM success, Microsoft has focused on providing intuitive tools in a familiar environment, to ensure users not only adopt ECM solutions but ultimately champion ECM's capacity for streamlining their workloads and helping them get their jobs done more efficiently and effectively.

Microsoft is assuming a role as a leader in the next generation of integrated user-oriented ECM systems. By prioritizing ECM in the Office "12" SharePoint servers release, and integrating a comprehensive solution with familiar environments like Microsoft Outlook, Word, PowerPoint, and Excel, Microsoft is providing companies with an intuitive solution that integrates with users' existing workflow, resulting in less training time for users and a reduced burden on IT. With an integrated platform that shares common tools, this solution will be easily deployed and managed by the IT department, resulting in further IT cost savings.

In considering the shared needs that carry across all segment of ECM, as well as the special needs of each ECM segment—document management, records management, web content management and forms management —Microsoft is providing organizations with an overall solution can be used throughout the organization. While Enterprise Content Management may have seemed like a daunting task at first glance, organizations will learn that with an intuitive and scalable solution, ECM can easily become integral to business processes and essential to business success.

Appendix A. 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 also address important customer needs. Microsoft will continue to invest in strategic relationships with key technology and service partners.

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

- **Imaging** - including batch and high volume scanning, Optical Character Recognition (OCR) and Intelligent Character Recognition (ICR).
- **Taxonomy Management tools for managing enterprise wide metadata**
- **Archiving for long term storage and e-mail journaling**
- **Content integration** – the ability to search third-party Content Repositories and move items to/from Office “12” SharePoint servers 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.
- **Vertical and compliance specific business solutions** - Vertical solutions for key markets such as Finance, Legal and Professional Services, Government, and Utilities. Compliance solutions for Sarbanes-Oxley, HIPAA, and others.

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