

Enterprise Records Management: Strategies and Solutions

A White Paper prepared for Hummingbird Ltd.

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About the Author

J. Timothy Sprehe, Ph.D., has over 30 years of experience in information resources management policy, first as a U.S. federal employee and since 1991 as a management consultant and president of Sprehe Information Management Associates, Inc. During his years as a federal employee at the Office of Management and Budget, he was principal author of the original OMB Circular No. A-130, Management of Federal Information Resources, a U.S. government-wide policy setting forth general guidance for managing all information and information technology, including official records.

In his consulting practice, Dr. Sprehe has conducted studies for and provided advisory assistance to a wide range of government and commercial clients, **specializing in records management** in recent years. In 1998, he co-authored research to develop guidelines for electronic records management (ERM) on U.S. state and federal agency Web sites. He was a consulting author of the study published by the U.S. National Archives and Records Administration in 2001, Report on Current Recordkeeping Practices within the Federal Government. He organized and co-sponsored five conferences on electronic records management from 1998 to 2002. Currently, Dr. Sprehe chairs the AIIM International Standards Committee on Integrated Functional Requirements for Electronic Document Management and Electronic Records Management Systems.

Dr. Sprehe is a frequent speaker on ERM and writes extensively for popular and professional publications. He recently co-authored “Principal Challenges Facing Electronic Records Management in Federal Agencies Today” in *Government Information Quarterly* and writes a regular column for the newspaper *Federal Computer Week*. He is editor of *The Internet Connection*, a monthly newsletter, and in 2000 co-authored a multi-agency study on performance measures for government Web sites.

In the 1970s, Dr. Sprehe directed the international statistical programs of the U.S. Census Bureau, twice serving as a U.S. delegate to the UN Statistical Commission. He was Deputy Director of the World Fertility Survey, a UN-sponsored global survey research program based in London, and is an elected member of the International Statistical Institute.

Dr. Sprehe holds a Ph.D. in sociology from Washington University, conducted postdoctoral studies at The Johns Hopkins University, and was an Assistant Professor at Florida State University before joining the U.S. civil service in 1970. He has published over 150 professional articles and several monographs. His company Web site is at <http://www.jtsprehe.com>

INTRODUCTION

Records Are Essential to All Enterprises

Every human enterprise must be able to provide recorded evidence of past events, transactions, and decisions. This is true whether the enterprise is a business, a government agency, a non-profit organization, a family, or an individual person. Records contain information that is both a valuable evidentiary resource and an important business asset.

Records Management (RM) is fundamental to both the private and public sectors. Government agencies at the national and sub-national levels have laws requiring them to keep and preserve records. Every business also exists within an environment that demands recordkeeping. Some industries such as banking, insurance, telecommunications, and accounting are highly regulated by government and the regulations often specify detailed recordkeeping practices. Business records are essential for accountability to investors and shareholders. The legal and health care professions are heavily dependent on their records to conduct business. Tax laws affect businesses, nonprofit organizations, and individual persons in different ways, but all of them necessitate records. In fact, RM is such a basic element of modern enterprise life that too often it is taken for granted.

Records ensure that an enterprise can:

- Conduct its business in an orderly, efficient, and accountable manner
- Deliver services consistently and equitably
- Document its policies, decisions, and outcomes to stakeholders and regulators
- Meet its legislative and regulatory requirements, including audits
- Protect itself in litigation
- Function in a financially and ethically accountable manner
- Protect corporate interests as well as the rights of employees, clients, and other stakeholders
- Provide continuity of operations in an emergency or disaster
- Maintain its corporate and institutional memory

The purpose of this paper is to present a concise explanation of Enterprise RM and of RM strategies and solutions for today's enterprises whether they are businesses, governments, or nonprofit organizations. Records occur in many formats: paper, microform, electronic, and optical, for example. Enterprise RM consists of physical RM (pRM) plus electronic RM (eRM), the two encompassing records in all formats. While enterprises carry on their activities today almost universally with the use of information technology (IT) that promotes eRM, they will continue to keep older records in paper and microform for the foreseeable future, necessitating pRM. The primary audience for this white paper is enterprise decision makers – Chief Executive Officers, Chief Information Officers, Chief Financial Officers, IT Managers, and Records Managers – in all sectors, especially those most regulated. Definitions of terms used may be found at the end of the paper.

Records Then and Now

Historically, virtually all records were kept in paper format and handled as “back office” filing and clerical functions; Enterprise RM was a component of basic management and administration. Today, the vast majority of records are “born electronic” or converted into electronic formats, a fact that has revolutionized most features of enterprise management with the possible exception of RM. Other aspects of information handling have been transformed from hard copy to electronic format, and their management from manual to automated electronic handling, through software applications such as electronic document management (eDM). Yet it remains true that in many large organizations, Enterprise RM is still lodged in the general administration unit rather than falling under the corporate Chief Information Officer, and paper is still the official format for corporate records.

When enterprises manage all other information content functions in an electronic information systems environment, it becomes irrational to manage enterprise records manually on paper outside of the IT systems environment. This is particularly true as events occur – disasters and litigation, for example – that highlight the vital importance of records to the operations and to the very existence of enterprises.

The dawning realization that Enterprise RM must be brought in as an essential element of corporate IT architecture and systems led to rapid development, beginning in the mid-1990s, of eRM software applications to integrate with other information management systems.

ENTERPRISE RECORDS MANAGEMENT IN CONTEXT

In today's enterprise, RM occurs within the context of many IT applications that manage information:

- Document management systems, including word processing and spreadsheet systems as well as correspondence management systems
- E-mail management systems
- Database management systems
- Forms management systems
- Internet Web site content management systems
- Imaging systems
- Workflow systems
- Case file management systems
- Customer relations management systems

Electronic records are *different* from other electronic documents and information objects in that they must bear the characteristics of records that can be demonstrated or proven, if necessary in a court of law. The characteristics of a record are:

- *Authenticity*: A record must be what it purports to be.
- *Reliability*: A record must be a full and accurate representation of the transactions, activities, or facts to which it attests.
- *Integrity*: A record must be complete and unaltered.
- *Usability*: A record must be able to be located, retrieved, presented, and interpreted.

How Records Management Works

End users create records. End users are anyone in an enterprise, from the highest ranked official to possibly the lowest ranked clerical worker or manual laborer, who creates an information object satisfying the definition of an enterprise record.

Records managers, in addition to being end users, *manage* records once they have been created. The management entails *maintaining* the records in *recordkeeping systems* that capture, manage, and provide access to records through time; *using* the records in the sense of making them available for active use in support of business operations; and *retiring* the records, when no longer needed for active use, to *temporary* or *permanent* storage. Temporary storage means preserving the records in an accessible manner until an assigned temporary period has expired and then seeing to it that the records are *disposed* of by destruction. Permanent storage means ensuring that the records are preserved in an accessible manner for the entire life of the enterprise. Finally, records managers *preserve* records in an accessible manner and format for long-term temporary or permanent storage (say, 10 years or more). For electronic records, preservation can include migrating the records, if necessary, to paper or microform. Electronic formats change so rapidly that electronic records become inaccessible and the costs of migrating to newer electronic formats

become prohibitive. Long-term preservation of electronic or digital records is an area of intense research activity at present.

Once an end user has declared a document or other information object to be an enterprise record, the Enterprise RM system stores the record in the proper file category as designated by the end user, the records manager, or an auto-filing software application (see below for discussion of auto-filing). The system is procedurally protected in the sense that, once an information object is filed as a record, procedures will not permit the object to be altered or deleted, and explicit policies and procedures govern access to, and security of, the record.

Records and Non-Records

Records may make up a relatively small percentage of all the information flowing through an enterprise. Just as it is essential to keep records, it is equally important to dispose of non-records, information that is not worth keeping for its evidentiary or legal value. “Keeping everything” can have extremely damaging effects on an enterprise. Major court proceedings and business and government scandals in recent years abound with examples in which non-record materials have come back to haunt an enterprise. If an enterprise still has non-record information in its possession when the legal or media spotlight brings past activities to the public center stage, the enterprise may be held publicly accountable for non-record information with potentially catastrophic consequences.

A record is fundamentally different from other documents or information objects such as word processing documents because Enterprise RM controls and protects the authenticity, reliability, integrity, and usability of the record according to established policies and procedures so that the end user cannot change or delete a record, although the user can make a copy and change the copy. The following table explains the differences between Document Management and Records Management functions.

	Document Management Functions	Records Management Functions
Holdings stored	Files such as word processing documents, spreadsheets, multimedia materials, databases, and the like	The same files if and only if they have been designated as records
End User may:	<ul style="list-style-type: none"> • Create new files that may or may not be records • Save files with limited metadata related to business function • Retrieve stored files • Change files • Change copies of original records, and save them designated as new records • Delete files 	<ul style="list-style-type: none"> • Accept only those files declared to be records and place them in proper file plan location, associated with retention/disposition schedule • Save files with Enterprise level metadata including Enterprise File Plan categorization and Retention/ Disposal schedule • Retrieve copies of records but not the original records themselves • Not change records or permit anyone except authorized records managers to change them • Accept changed copies designated as new records and place them in proper file plan location, associated with retention / disposition schedule • Not delete records. Records may only be deleted in accordance with their retention schedules or by authorized records manager

Figure 1: Similarities and Differences between Document Management and Records Management Functions

ENTERPRISE RECORDS MANAGEMENT STRATEGIES

The information content lifecycle is generally understood to comprise a set of stages: (a) creation or receipt, (b) active analysis, use, and dissemination, and (c) retirement, retention, and disposition.

- **Creation/Receipt.** When a document is first created or a completed form first received, it may qualify as an enterprise record.
- **Analysis, Use, and Dissemination.** As information is analyzed, used, and distributed inside or outside the enterprise, it may go through transformation into forms suitable for preservation as records. Raw data is edited, analyzed and tabulated into reports. Completed forms go through workflow processes and are transformed by enterprise decisions that may be captured as records. The information becomes the subject or part of the content of a report or publication for internal consumption or publication use outside the enterprise, new forms that may qualify as new records.
- **Disposition and Preservation.** At some point, the enterprise may declare the information to be in official and final form as an enterprise transaction, decision, or product delivered to market. The final form is probably a record. The enterprise may decide to preserve the final form for a period of years and then destroy it. Alternatively, the nature of the record's content or the regulatory environment in which the enterprise conducts its business may dictate that the record be preserved in perpetuity for as long as the enterprise exists.

In the traditional RM environment – an environment disappearing today – paper records reached the Enterprise RM program at the end of their lifecycle when they were retired from active use. In the traditional model, RM occurred at the disposition stage. At that point, the records manager took over the records and assured their appropriate disposition. The typical contemporary

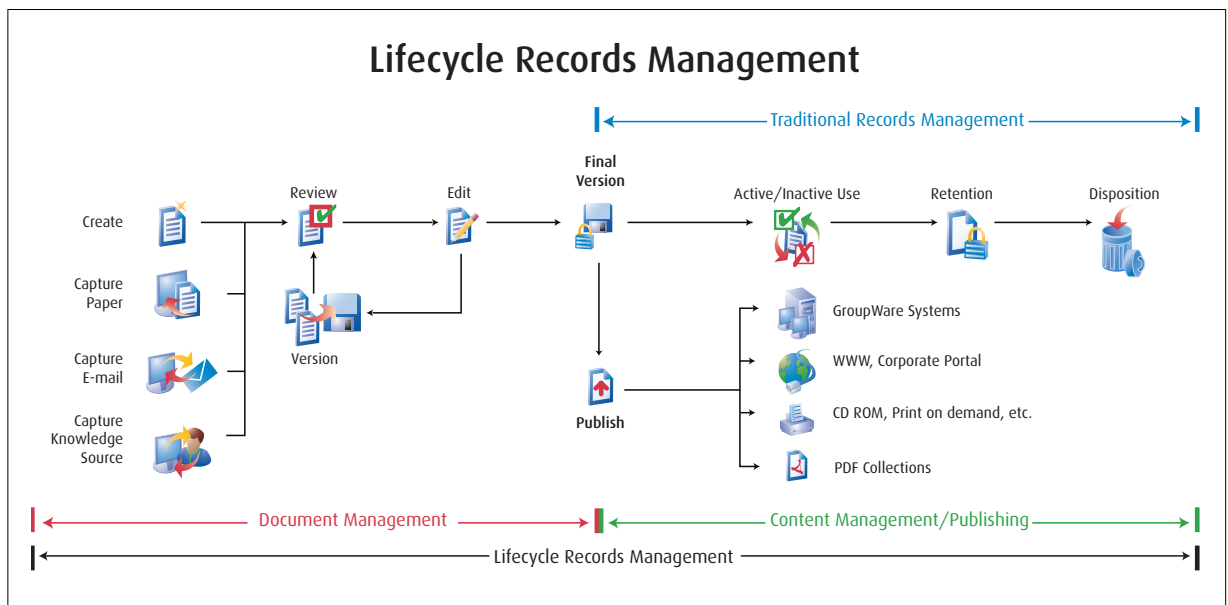


Figure 2: Lifecycle Records Management Approach

enterprise already possesses many automated information management capabilities, but has not automated RM. RM, if integrated into enterprise business processes at all, is usually a manual system in paper format or else it is nonexistent.

In today's dynamic IT systems environment, enterprises recognize that records are created or received at each stage of the information content lifecycle, as illustrated by Figure 2. Enterprise eRM systems enable easier capture and management of records at each stage in a more efficient and effective manner than traditional RM systems.

To arrive at eRM capability, the enterprise must pursue a threefold strategy.

1. A **business strategy** that establishes the business case for eRM within the enterprise
2. A **technical strategy** that sets forth how the enterprise will acquire and implement eRM within its IT environment
3. A **people strategy** that solves the human resources questions as to how eRM will affect the enterprise's personnel from top to bottom

1. Business Strategy

How is an enterprise at risk for lack of eRM capability to complement its traditional pRM capability? And how will an enterprise profit by acquiring eRM capability?

Benefits of eRM.

The enterprise will reap definite benefits from implementing eRM. Once eRM is in place, worker productivity rises as the search time for information declines because workers can retrieve records at their desktop rather than searching paper files. Duplication of completed work is reduced. Customer relations improve because of readier access to all enterprise information resources. In the event of litigation, the enterprise's more effective knowledge and control over what is in its record holdings reduces the high cost of discovery, increases the likelihood the enterprise can readily access all subpoenaed records, and decreases the likelihood that the enterprise will incur financial liability from the discovery of damaging non-record materials, thus lowering overall litigation costs. Scanning costs for converting paper to digital format decrease as more information is retained in electronic form. Recovery from disasters and other emergencies is greatly speeded because vital business records are easily retrieved from secure off-site backup facilities. Savings accrue from reduced paper storage costs and physical storage space becomes available for other uses. The combination of these factors results in reduced time to market and competitive advantages.

Costs of eRM.

Fully implementing eRM also implies costs for the enterprise. eRM system planning, development, and acquisition within the enterprise IT architecture, system deployment and implementation, business process reengineering of affected work processes, desktop user training, and change management imply substantial capital investment for the enterprise. Implementing eRM may impact every desktop user, temporarily lowering productivity. Every business process where eRM impacts work – potentially in all lines of business – may require reengineering. Training costs will rise as eRM impacts the enterprise. eRM deployment will require expenditures on pilot and test projects, plus phased implementation strategies.

Continuity of operations plans will require changes to include eRM and to ensure that electronic records have secure off-site backup. If the traditional pRM program has been under-resourced, costs will arise from bringing the program up to date because eRM systems demand traditional RM program data as their basic input.

The Business Decision.

For any contemporary enterprise, large or small, in which information is “born electronic” and passes through its existence largely in electronic form, the benefits of eRM outweigh the costs. Records are vital information essential to the survival, welfare, and prosperity of an enterprise. Acquiring eRM capability to complement pRM is the sound business decision because today’s enterprise end users create or receive information in electronic format, they analyze and process it electronically, they communicate internally and externally with electronic tools, and their end products are heavily dependent on electronic formats.

2. Technical Strategy

Given a business decision to acquire eRM capability, enterprises discover that one cannot simply acquire an eRM system and “plug it in.” Enterprise architecture infrastructure requires modification for the introduction of eRM. Records originate from all other applications in the IT environment and therefore must integrate with existing or legacy IT systems as well as planned future systems.

Integration.

Integrating eRM with IT systems in which the enterprise has substantial investment and to which business units have become committed becomes paramount to IT planning. IT planners must ask themselves how a prospective eRM application will impact valued legacy systems and how much customized time and money they will need to integrate a given eRM application with enterprise-wide IT resources management systems. They must consider whether investment in computer-based eRM training will contribute to greater effectiveness in the Enterprise RM program. Typically, Enterprise RM programs are weak in the areas of capturing e-mail messages and associated metadata that qualify as records. And many enterprises lack policies and procedures governing Web sites as records and may not have given thought to how Enterprise RM integrates with web content management systems. Every information management application that potentially generates enterprise records demands systems integrators’ attention for its integration with eRM systems.

Answering these questions may take IT managers beyond technical realms into the substance of enterprise lines of business. The questions may also demand basic remedial education because IT professionals, information content managers, and records managers are usually unfamiliar with one another’s disciplines; they use common terms such as “record” and “archive,” for example, with very different meanings. IT managers find that the more attention given up-front to integration issues, the lower the corporate pain and higher the productivity gains from introducing eRM.

Vital Records and Continuity of Operations Planning.

Inserting eRM into IT architectures and planning entails identification of the enterprise's electronic vital records (see Definitions) and taking the necessary steps to ensure these records are easily retrievable and usable in event of an emergency or disaster. Caring for vital records must be part of any enterprise's continuity of operations plan. IT systems must not only back up vital records routinely to secure remote sites, but also guarantee that search mechanisms and current records inventories are readily accessible.

Openness and Scalability.

In the acquisition process for eRM systems, important considerations are the extent to which available marketplace offerings are open and scalable. IT managers must ask themselves about the ease of use of vendors' Applications Programming Interfaces (APIs). They must ask whether a particular product suite that appears to work well in smaller organizational settings will function smoothly when deployed to tens of thousands of users.

Scalability also includes ability to handle various physical and electronic record formats: paper, microform, optical, and audiovisual. To the maximum possible extent, the selected eRM system should be format-neutral in the sense that it is capable of managing records in any format.

Auto-Filing Systems.

At present, eRM products in the marketplace tend to require desktop user involvement in deciding, at a minimum, whether an information object is a record and, if yes, where the record should be filed. Desktop users not only resist their decision-making role, but they are the primary source of RM errors. Equally important, the costs of initial and continuous training of desktop users throughout the enterprise may well dwarf IT system and per-desktop costs by several multiples. If the training investment is not taken seriously, eRM system effectiveness diminishes sharply.

In an ideal setting, eRM systems would be transparent to desktop users and not require their intervention. Application systems are now developing to the point that the eRM system itself, coupled with sophisticated search engines, can be configured to examine the content of the information object and make the correct decisions – always under the control of qualified records managers. In other words, the eRM systems can “auto-file” or “auto-categorize” records. At present, the little experience gained with these systems seems to indicate they can be made to work satisfactorily only with a high degree of costly configuration for each enterprise business function.

3. People Strategy

Because RM has for so long been a back office function, employees lack understanding of its fundamental importance to the enterprise. Viewing RM as “someone else’s job,” desktop users may have strong resistance to the introduction of eRM systems. This is where the people strategy comes into play.

User Friendliness.

Under these circumstances (and assuming auto-filing is not deployed), the ease of use of eRM at the desktop is critically important. The more user friendly an eRM system to the desktop user, the more likely the user will cooperate in helping the system accomplish its purposes.

Pilot Programs and Business Process Reengineering.

Introducing eRM systems may affect all work processes in a business unit. For the systems to work in practice, the enterprise may need to redesign the affected processes to accommodate eRM systems introduction. How the systems are introduced will affect productivity and workflow may become temporarily unpredictable. Some enterprises find it advisable to conduct pilot experiments with eRM systems first in a small business unit to gain the experience necessary to design a larger-scale business process re-engineering project.

Training.

IT professionals and end users initially need training focused on understanding what RM is in general, the importance of RM to the enterprise, and how introducing eRM systems will affect their jobs. Records managers need training focused on transition of traditional functions into the IT environment, often including basic IT concepts and skills. Beyond this instruction, all those affected require training as to how the chosen eRM system application works. End user training may range from the most senior manager to the lowest clerical position. The training program will also be continuous because, over time, users need refresher education as well as instruction in how newly introduced improvements to the eRM system work. Successful enterprises invest in train-the-trainer programs combined with computer-based training (CBT). After participating in face-to-face instruction, the end user encounters CBT on the desktop, reinforcing and applying what the instruction has taught. The content of training is typically twofold: (a) basic end-user training in RM concepts and operations that stresses the risks the enterprise incurs when records are poorly managed, and (b) eRM applications training.

ENTERPRISE RECORDS MANAGEMENT SOLUTIONS

Having arrived at business, technical, and people strategies, organizations seek Enterprise RM solutions that optimize the systematic control, analysis, organization, and management of all information created, received, maintained, or used by the organization in the course of its business activities. The organization now understands that Enterprise RM is one integral part of its total information management architecture and should be tailored to fit seamlessly in with other parts of the enterprise management and IT environment.

Commercial off-the-shelf (COTS) eRM applications that solution vendors offer in the marketplace demonstrate different approaches to Enterprise RM depending on the company's corporate philosophy. Simply put, some vendors offer products primarily in the RM field and have expanded to add integrated electronic document management (eDM), workflow, and other functions. Other vendors offer product suites across the full spectrum of eDM, workflow, eRM, and other functions such as imaging. Firms are expanding both through internal growth and development as well as by mergers and acquisitions. With few exceptions, all eRM vendors supply products that are compliant with recognized national and international standards such as the ISO 15489-1:2000(E), the U.S. DoD 5015.2-STD, the UK PRO Specification, and the European MoReq specification. All reputable firms offer general-purpose eDM/eRM solutions differentiated by features more suited to some enterprises or industries than others. The challenge for the enterprise is to choose the COTS products best suited to the enterprise's particular situation.

The Hummingbird Approach

Hummingbird Ltd. is a vendor that, through the acquisition of PC DOCS Group in 1999 (a market leader in eDM and Search technologies) and development of RM functionality, now offers the **Hummingbird Enterprise™** solution. Hummingbird Enterprise delivers complete lifecycle management of physical records (pRM), work-in-progress electronic documents (eDM) and electronic records (eRM), as well as other related technologies in Imaging, Workflow, Search Engines and Collaboration. The solution is delivered in a unified architecture with all functions sharing common user interfaces and common repositories. The unified platform is aimed at maximizing performance, achieving enterprise-wide usage via rapid deployments, and simplifying records and system administration. Hummingbird believes Hummingbird Enterprise leverages IT investments while mitigating content asset risks.

Challenges and Solutions

Records Management Solutions may be approached from a number of different perspectives, depending on the media or record type the enterprise is managing, how the records fit into a business process, how records are accessed, and how RM fits into the enterprise's overall information management strategy and IT architecture. The typical enterprise faces three primary concerns when looking for software solutions.

1. The Source of Enterprise Records

Records managers administer records originating from various sources, whether mainly paper or electronic, that must be considered in approaching an Enterprise RM solution. What are those sources?

A. Physical Records.

Many enterprises are managing records in paper or microform formats, what this paper calls pRM, for physical records management. They may be undertaking a transition to eRM and/or they may have decided that older records will remain in physical format while all future records will be electronic to the maximum extent possible. Hummingbird RM™ includes a pRM solution for these situations, which may be adopted without deploying any imaging technologies. The solution includes tools for managing large or small inventories of physical objects as well as providing barcode facilities in order to track objects and support inventory or census operations.

Several reasons contribute to enterprise adoption of pRM as part of its overall Enterprise RM strategy:

- The costs of converting into electronic format voluminous, decades-old physical records that are infrequently retrieved may outweigh the minor benefits derived.
- Some records may be physical objects other than paper or microform, such as physical evidence in a criminal legal proceeding (weapons, clothing, chemical samples, for example), whose value lies partially in their physical form.
- Organizations wish to expand pRM to provide enterprise access to records using standard IT platforms such as Windows and SQL databases.
- Updating pRM is the first phase in a transition toward a total pRM/eDM/eRM solution.

B. Transitioning from Physical Records Only to Physical Plus Electronic Records.

Enterprises adopting eRM frequently determine that use of imaging or optical character recognition (OCR) technology is the most efficient way to convert large or small volume of physical records into electronic format. Hummingbird Imaging™ is well suited for capturing and indexing paper-based records, and then managing them in tandem with electronic records. Hummingbird partners with other firms to provide solutions where the enterprise requires production imaging capabilities. For some enterprises, the transition from exclusive pRM to pRM plus eRM may call for a workflow system. Hummingbird provides a workflow solution with Hummingbird DM WorkFlow™.

The reasons an enterprise might adopt the Hummingbird Imaging solution are:

- The enterprise lacks physical space to store paper records, and imaged records occupy little space.
- The solution gives the enterprise the ability to provide greater sharing or remote access to records by desktop users.
- The solution is an early step in the enterprise's transition toward enterprise-wide eRM.
- The enterprise must come into compliance with various worldwide records management standards: for example, government agencies complying with US DoD 5015.2-STD or UK PRO. Hummingbird Solutions are certified as being in compliance with such standards.

C. Records Already in Electronic Format.

For records “born electronic” or converted to electronic from physical formats, Hummingbird RM is an Enterprise RM solution. The records may be files generated by applications such as office suites (word processing, spreadsheets), audiovisual, engineering (Computer Assisted Design), XML (Extensible Markup Language), or some other application. Hummingbird RM is a combined eRM and eDM solution. This solution is appropriate for enterprises that are adopting eDM for enterprise productivity purposes, yet still must manage their documents across the entire information life cycle. That is, they must integrate eRM with eDM so that the enterprise captures those electronic documents designated as records in an electronic recordkeeping system. Hummingbird RM incorporates extensive security features to guard against unauthorized access at multiple levels – folder, document, group, user, and file plan – leaving the records manager free to deal with strategic custodial functions. Hummingbird RM offers the option of integrating with Hummingbird Imaging as well the other solutions within the Hummingbird Enterprise.

Key reasons an enterprise might adopt the Hummingbird RM solution are:

- The enterprise mandates a total lifecycle approach to electronic information management.
- The enterprise’s document organization and security requirements require an RM-like file plan approach.
- The enterprise’s eDM system must be compliant with eRM standards such as ISO 15489, UK PRO or DoD 5015.2.

E-Mail.

Capturing records from electronic mail (e-mail) is currently of paramount concern because it constitutes an area of enormous vulnerability for all enterprises. The enterprises know that business use of e-mail is spreading rapidly, that many e-mails undoubtedly contain record information, and that e-mail messages qualifying as records are not finding their way into Enterprise RM systems.

Hummingbird offers standard integration with e-mail systems such as Microsoft Outlook, GroupWise, and Lotus Notes so that the enterprise can capture e-mail messages and their attachments as records. Messages from these e-mail systems can also include Hummingbird RM attachments to facilitate rudimentary electronic routing of managed records. Beyond standard integration, Hummingbird RM includes an extension that exposes the Hummingbird RM solution within the Microsoft Outlook environment, enabling the enterprise to directly browse the file plan and RM repository from the Outlook folder hierarchy.

Auto-Filing.

Hummingbird has joined with a partner company to offer an auto-filing product that combines **Hummingbird Enterprise** with the partner’s solution. The auto-filing solution is applicable to electronic information objects from many information management applications. The advantage of auto-filing is that it provides an automated, “back-office” method for capturing enterprise records without requiring any end user involvement, including e-mail messages and their attachments. End users can still retrieve and re-use copies of records automatically captured. The technology for auto-filing employed by Hummingbird and its partner uses sophisticated full-text search-and-categorize features. Records managers may refine the categorization rules to suit organizational units within the enterprise.

Auto-filing may require significant configuration effort on the part of the enterprise to tailor the application to particular situations and needs. If desktop users manifest substantial resistance to declaring information objects to be records and designating where the records are to be filed, the enterprise may decide the effort is well justified. In addition, even a somewhat imperfect auto-filing solution may significantly lower the enterprise's risk and liability with respect to its records, and can substantially reduce the cost of eRM training programs for desktop users. Auto-filing may also offer the advantage of enabling the enterprise to cope with demands from governmental regulatory authorities or requirements to meet record keeping guidelines and risk management challenges.

Transactions.

Many enterprises must manage their transactional records (e.g., buying and selling of goods and services) for retention and disposal purposes. At the same time, a given enterprise may not want to modify its Line of Business (LOB) application systems or disrupt the processing of transactions. The transaction system in question may be any mainframe, Unix- or Windows-based transaction system.

Hummingbird offers a solution for transactional records through a combination of **Hummingbird RM** and **Hummingbird ETL™**. Hummingbird ETL is a data integration tool used to **Extract, Transform, and Load** data from original sources into a consolidated data warehouse in order to support various analyses on the data. The solution gathers copies of transaction metadata, such as summary information from an LOB system, and adds this information to the records repository. The solution automatically applies retention and disposal rules based on the retention and disposition schedules within the file plan. Records managers may alter default retention and disposal settings as circumstances change; for example, if litigation occurs regarding the enterprise's transaction records. Records managers may query the Hummingbird RM system for transactions due for disposal or for transfer to a permanent archive.

Enterprises adopt a transactional RM solution because they want to reduce legal and financial liability that might arise from transactions; because they want the ability to quickly retrieve transactions for purposes of customer service; and because regulatory requirements demand management of electronic transactions as records for retention and disposal.

2. Business Processes and Their Impact on Records

Many enterprises are automating the process by which a document or other information object is designated as being "record worthy." The enterprises accomplish the automation with workflow and document-centric routine solutions. For example, the enterprise may set system rules such that the system declares the outcome of a particular work process or a specific completed form to be a record with a pre-defined location in the enterprise file plan. Hummingbird Enterprise provides solutions, including Hummingbird DM WorkFlow, to assist business processing involving records. Hummingbird also partners with other firms to offer solutions requiring production workflow systems. Many enterprises use imaging as part of business processing, and Hummingbird Imaging answers this need. Record process is an integral part of the Hummingbird Solutions approved under U.S. DoD 5015.2-STD, UK PRO, and RDIMS, the Canadian federal government's shared system initiative for addressing information management problems.

3. Accessing Enterprise Records and Other Information Assets

Information users find it most convenient when they can access enterprise records from tools that are intrinsically integrated into their work environment. Hummingbird does this through various points of access to organizational knowledge including records. Users can view and retrieve information assets from a web browser, Microsoft Outlook, and Windows Explorer, as well as user authoring tools, via Hummingbird RM.

An enterprise can also access its records and other information assets through **Hummingbird Portal**, extending to transactional and LOB records as well as document-based records. Often, a single point of access to organizational knowledge is desired that will facilitate searches across all information content repositories, whether they are records, documents, databases, corporate systems, e-mail systems, Web sites (Internet or Intranet), or something else. Hummingbird addresses this need by offering **Hummingbird Portal**. With this combination, the enterprise can conduct a global search across all its information holdings. Hummingbird Portal also supports wireless messaging, allowing the enterprise to subscribe to alerts relevant to new or changed information from any source.

Hummingbird's global approach to information access may appeal to enterprises whose information resources are varied enough to inhibit cross-repository searching using simply eDM and eRM systems. It offers the advantage of searching the enterprise's record holdings as well as other sources. The approach adds value and effectiveness when the information the enterprise is searching for or discovering is contained in both structured and unstructured repositories.

CONCLUSION

This discussion of records management in the modern enterprise highlights the fact that Enterprise RM, formerly a “back office” administrative function, is now becoming an integral component of overall information resources management. Records are no longer associated with rows of file cabinets in dusty warehouses but have joined the company of other essential applications in the enterprise’s basic business strategy and IT architecture. Enterprises are recognizing that the integration of RM into the “front office” functions of managing basic information resources is not only desirable but essential to the very survival and prosperity of the enterprise.

Managers are coming to understand the critical interdependence between the enterprise’s information systems and the information processed and stored in the systems, just as the realization is dawning that the enterprise’s information holdings can no longer exist independent of its information systems. IT professionals must incorporate RM concepts and principles into the way they think about their work. Records managers must include working familiarity with IT among their basic skill sets. Both IT professionals and records managers must take as an article of faith that the enterprise’s information resources are core valuables. Protecting and properly handling the information jewels reduces the enterprise’s financial and legal risk and liability.

Hummingbird offers a family of integrated solutions that meet the varied needs of today’s multifaceted enterprise – a strength of the company and its product offerings. The solutions are robust and adaptable to particular circumstances and special cases. Like other firms in the marketplace, Hummingbird recognizes that the enterprise information landscape is changing rapidly and likely to continue shifting as new technologies emerge and markets change. Auto-filing tools, for example, will become more refined and accurate in coming years as enterprises gain experience with their use and recognize their value in reducing end user training costs. Hummingbird will change with the market environment and continue product development to meet new market challenges. Whether enterprises’ RM concerns center about physical or electronic records, Hummingbird promises to be there when needed with solutions that fit the circumstances.

Definitions

For the purposes of this paper, terms have the following meanings.

Document refers to recorded information or an information object, whether hard copy or electronic, that can be treated as a unit. In workflow systems, “document” means a unified presentation of information used to accomplish a particular task.

Document Management (DM) or Electronic Document Management (eDM) System refers to an information system for organizing, accessing, and controlling documents and typically includes universal client software and a suite of desktop management functions.

E-mail, short for **electronic mail**, refers to software that enables systems to send messages to one another and to be signaled when messages are received.

Imaging refers to the process of capturing, storing, and retrieving documents, regardless of original format, using micrographics and/or electronic imaging.

Metadata means literally data about data and refers to information such as the record creator, date and time of creation, associated documents, version number, and similar data.

Record, as used here and in RM generally, means information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business. This definition of record differs from usage of the same term in the area of document technologies where “record” means any information stored by any IT device, or in the area of workflow systems where “record” means a collection of related items of data treated as a unit. Records as used here imply accountability, the fact that someone is liable to be called to account, as of one’s actions or the discharge of a duty or trust, whether legally, financially, ethically, or in some other manner.

Recordkeeping System refers to a manual or automated system in which enterprise records are collected, organized, categorized and procedurally protected to facilitate their preservation, retrieval, use, and disposition (i.e., destruction or transfer to permanent storage). In a recordkeeping system, each file category is associated with a schedule of instructions as to how long the records are to be preserved and how they are to be disposed of.

Records Management refers to a field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use, and disposition of records, including processes for capturing and maintaining evidence of, and information about, enterprise business activities and transactions in the form of records.

Records Schedule is a description of a set of records together with a designation as to whether the records are to be handled as temporary records or permanent records. Temporary records are to be destroyed after a set period of time specified in the schedule. Permanent records are to be preserved for the life of the enterprise.

Vital Records are those records essential to the enterprise’s operations during an emergency and those records that protect the basic legal and financial rights and interests of the enterprise.

Endnotes

¹ Concerning the characteristics of records, see *International Standards Organization, Information and Documentation – Records Management, Part 1: General, ISO 15489-1*, Geneva, Switzerland, 2001 at <http://www.iso.ch/iso/en/ISOOnline.frontpage>. Concerning the legal admissibility of electronic records in legal proceedings, see Association for Information and Image Management International, *Legal Admissibility Series Standards – Includes TR31/1 through TR31/4*, Document No. ANSI/AIIM TR100, Silver Spring, MD, Revised 1999 at <http://stnds.aiim.wegov2.com/>.

² See, for example, “Knowledge-Based Persistent Archives,” at <http://www.sdsc.edu/TR/TR-2001-07.doc.pdf> and related publications from San Diego Supercomputer Center, as well as the Electronic Records Archives program of the U.S. National Archives and Records Administration at http://www.archives.gov/electronic_records_archives/index.html.

³ Note that “information content lifecycle” is a different concept from “information system lifecycle.” The latter term denotes the stages through which an information system passes, from initial design through acquisition and implementation to final replacement. The former denotes the stages through which information objects pass.

⁴ The methodological approaches currently in use for auto-filing type applications are neural net technology and natural language processing, especially the former.

⁵ Hummingbird Enterprise™ offers customers a 360-degree view of their knowledge assets by bringing together Hummingbird’s industry leading portal, connectivity, document management, records management, knowledge management, business intelligence, collaboration, and data integration solutions into an integrated enterprise information management system (EIMS). Hummingbird Enterprise offers everything organizations need to manage the entire lifecycle of their business content. For more information about Hummingbird Ltd and its product offering visit <http://www.hummingbird.com>.

⁶ RDIMS integrates Hummingbird’s document management, imaging, optical character recognition, full-text indexing search and retrieval, workflow, and on-line document viewer with other third party tools. See more information about RDIMS at <http://www.rdims.com>.

⁷ Definitions are adapted from (a) International Standards Organization, *Information and Documentation – Records Management, Part 1: General, ISO 15489-1*, Geneva, Switzerland, 2001, and (b) Association for Information and Image Management International, *Glossary of Document Technologies, ANSI/AIIM TR2-1998*, Silver Spring, MD.

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