EASY DOCUMENT MANAGEMENT

A Guide to Benefits, Features, and Selection

M-Files®

Simply Easy Document Management

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published by M-Files Inc.

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Foreword

Thanks for picking up *Easy Document Management*.

We have prepared this guide for the millions of businesses that have yet to realize the benefits of digital document management, and as a result, have an enormous opportunity to improve their efficiency, productivity, and profitability.

Organizations with an overarching system in place to handle all their information operate at a vastly superior level of efficiency compared to those that still rely on paper files and folders. Even companies with most of their documents in digital form, but in a traditional folder structure, suffer many of the same drags on productivity as paper-filing systems. Time is wasted constantly looking in several folder locations for misplaced documents. This is often compounded by the proliferation of multiple versions of the same file that results in errors and repeated work. Without a document management framework, businesses find it very difficult to enforce reliable file organization and optimize their internal processes.

At M-Files Inc., we believe a comprehensive document management solution should neither change peoples' daily work routines, nor require a lengthy or costly implementation. In our experience with thousands of customers, we have found that nearly any organization can significantly improve its bottom line with easy and affordable document management.

Various studies on general office practices illustrate the savings that are now possible. Yearly expenses for a traditional paper-based environment are deceptively high. As this paper will show, the costs of physical storage, staff time, supplies, and repeat work due to misplaced documents may add up to more than $50,000 annually for a department of just ten employees. A digital document management solution not only eliminates these costs year after year, it also enables employees to do more in less time.

Beyond direct gains in efficiency in everyday file handling, there are many other advantages of electronic document management that are harder to quantify, but are of equal significance to the modern workplace: secure access through permission controls, data loss prevention, mobile access, automatic backup, and customized workflow. Addressing shortcomings in these areas is yet another incentive for many firms to implement a document management system.

We hope *Easy Document Management* will help you become familiar with the benefits of document management solutions and the key concepts behind digital document control. This guide can serve as a valuable resource for evaluating your company's needs for managing information and ultimately selecting the document management solution that is right for you.

Greg Milliken
President
M-Files Inc.

An Introduction to Document Management

Purpose

Electronic document management solutions are designed to organize business files and records digitally, whether they started out in paper form or were generated by software applications. Paper files are first converted to electronic format by scanning. This provides a more compact means of storage, universal access for retrieval, and higher levels of data security and privacy.

A company-wide document management system also controls digital files that are generated directly through applications -- such as those in the Microsoft Office suite (Word, Excel and PowerPoint), accounting software, CAD, email, and so on. Managing (rather than simply storing) documents enables quicker access to, and greater command over, business information.

Eliminating Paper

For businesses across the board, eliminating the bulk of their paper documents and records will immediately eliminate substantial material and labor expenditures.

Companies are also liberated from paper's inherent limitations as a means of information storage. To share or distribute paper files, they must be duplicated. To store them, companies must devote a large portion of their office area or lease a separate space dedicated for physical file storage. The more staff and files are spread out across locations, the greater the obstacles to access.

Given the large expense and inconvenience of paper documents, maintaining them in digital format instead leads to a substantial increase in efficiency and decrease in operational costs.

Essential Components

Solutions designed to manage electronic documents should contain the following essential components:

- **Import** – Mechanisms to bring new documents into the system, whether image scans of paper files or electronic files previously stored on a server or hard drive.

- **Storage** – Options to maintain system files via data storage hardware, utilizing one or several distributed locations.

- **Identity** – A scheme to index documents with discrete identities for accurate search and retrieval.

- **Export** – A way to port and/or remove items from the system.

- **Security** – Placement of password-protection on certain files according to authorized user security controls.

Long-term Value

Document management solutions exist first and foremost to organize, store, and retrieve files accurately and efficiently. Once documents and company data reside in a structured system, more sophisticated file-handling procedures become possible.

For example, because most document management systems log information about the history of document creation and modification (i.e. a digital "paper trail"), managers can query the system to assess the status of employee progress or trace the history of past versions.

This accountability also makes a document management solution indispensible for businesses in industries that must report their record-keeping procedures to maintain compliance with regulatory mandates such as Sarbanes-Oxley (SOX) for financial institutions and accounting firms, the Health Insurance Portability and Accountability Act (HIPAA) for medical practices, and International Organization for Standardization (ISO) 9000 and 9001 for manufacturing and engineering.

With the right electronic document management solution in place, businesses have far more capabilities than they would with just paper-based file or standard PC folder structure. Effective document management enables employees to:

- Retrieve the correct document out of myriad of items throughout the company within seconds.

- Access up-to-date file changes while working from home or on the road.

- Prevent overwritten changes, misfiled items, and confusion over file versions.

- Share information confidentially with other employees, partners, and customers.

- Recover automatic backups of digital content to protect against accidental data loss.

The Basics of Easy Document Management

This guide is divided into three sections. The first two sections explore the benefits of adopting the technology and describe the basic features common to organization-wide document management system. The chapters also profile several examples of organizations that have adopted solutions to meet their particular business needs.

The third section shows how to assess one's own requirements -- which features best apply to a particular situation and what kind of business issues can be addressed by document management. The last section of the paper outlines some common rules for records management, for those organizations that must follow legal or industry mandates for the creation and management of their files.

A Benefits

Gaining the Document Management Advantage

Central to the document management advantage is access to information. With the increasing volume of business documentation, the need to find the right information at the right time becomes more and more critical. Electronic document management solutions deliver information more quickly and with more precision than traditional filing systems and at a much lower cost.

These two benefits -- saving time and reducing costs -- speak directly to the mission of most organizations.

Yet there are several other motivations for companies to deploy a document management solution. Many seek out more effective document control because it addresses a critical business issue. A digital document management system can provide an effective solution to several common problems, such as:

- Paper and electronic records spread among geographically dispersed locations

- Security breaches of paper documents or electronic files

- Inconsistent processes resulting in cluttered folders, misplaced files, or confusion between versions

- Overwritten revisions on documents generated by several collaborators

- Lags or bottlenecks in procedural workflow

This section examines the many reasons why companies seek to gain a higher level of control over their operations through effective document management.

Time Savings

Looking for an item in a file cabinet and not finding it happens quite a bit. In fact, employees spend one-fifth of their day looking for hard copies, and in only 50% of the cases do they find the information in the expected place[1].

Labor expended for file hunting is by far the biggest expense related to paper record systems. In some cases, employees never find the document in question at all, and the staff has to repeat the work to produce it again, adding to the drain on resources. One witnesses similar slowdowns with digital files when they reside in the traditional PC-folder structure in the absence of a document management framework. As employees create new folders in ad hoc fashion, files become increasingly disorganized. Over time, digital content is saved on different servers and workstations, in different folders, under different names. Much like paper systems, employees go to look for the most current version of the file, but have to check multiple possible locations.

Given that such a large portion of an employee's day consists of file handling, there is then ample opportunity to increase staff efficiency through simple measures of electronic document management.

A document management system typically indexes each item with specific keywords, keeping all data content searchable company-wide. Employees can bring up the right document in seconds, without rifling through the wrong drawers or pecking through PC file locations. Digital document management significantly reduces the time for routine file search and retrieval while largely eliminating the interruptions in work caused by misplaced information.

Companies with document management systems find quicker project completion and faster and more accurate response to information requests.

Dutch Separation Engineering
Oil & gas projects move forward faster with process-integrated DMS

"It all comes down to a major time saver," says Nanco Eelman, one of two partners of the offshore engineering firm, Dutch Separation Engineering (DSE) Oil & Gas. "A formal workflow, quick document searches, and auto-fill templates all keep our projects moving forward. We actually help our customers stay on track. We'll get an item from our client and we tell them, 'no actually, that's not the right version. We already received this other one.'"

The partners implemented a document management solution to complement their existing engineering-based software. They knew from past experience that simply storing files in project folders on a hard drive leads to almost immitigable disorder.

"If you were looking for specific documents a year later for a certain project, finding them often took a lot of your day," he says. "It was also hard to determine the status of the documents --exactly where a drawing or contract document was in the revision process."

DSE Oil & Gas selected M-Files as its document management solution to gain greater control of their business documents, information, and processes. M-Files indexes each new document with metadata -- embedded keywords that include a basic set of descriptive attributes, such as client name and contact information, document type, as well as its revision status.

The metadata also populates form-templates on recurring documents automatically. In an AutoCAD template, an engineer types in the project number in one field, and the M-Files auto-fill utility supplies the rest of the essential project data.

"The M-Files templates save us an enormous amount of time when we generate a project completion file for all our final work. Previously, we had to open all the documents, open the headers, change them, and save everything. But now, M-Files updates the headers automatically. What would have taken us half a day before, we can now do in M-Files in a half an hour."

Time Savings

The Hidden Cost of Paper Files

Labor
Walking to the file cabinet seems like an insignificant amount of work, but a closer examination reveals that paper filing adds up to an enormous drag on productivity. If it takes five minutes for a $20-per-hour employee to get up from a desk, find the appropriate file cabinet, and locate the folder he or she needs -- and does this five times a day -- then that's more than 100 hours spent filing per employee per year. Double the five minutes to put each file back in its proper place, then it's about $4,000 in wages per person per year. For a staff of ten employees, the cost is roughly $40,000. That's one employee's worth of salary devoted -- literally -- to shuffling paper.

Yearly cost of labor for a department of ten....…………...……….…………..$40,000

Misfiling
PricewaterhouseCoopers estimated that it costs $120 to search for every misplaced file and $220 to wholly re-create a lost document. In a hypothetical ten-person staff, one could estimate that three items are misfiled per month, and once per month, the staff has to re-create a document that was already completed, but they just can't find.

Yearly cost of misfiling for a department of ten……………………...………...$7,680

Office and Storage Space
The footprint of an average cabinet takes up 15.7 square feet, while the average office rent in the U.S. is $15-$20 per square foot annually. On the low end, offices spend $236 per year per cabinet just for the real estate. It is reasonable to assume a small storage unit to store older archives is at least $100 per month. Add in the minimal expenses of cabinets and boxes, and storage cost rounds out to about $4,200.

Yearly cost of space for a department of ten................................…….……$4,200

Paper, etc.
The habit of keeping hard copy documents on file means a lot of printing, a lot of photocopying, and a lot of A4. The average U.S. white-collar worker consumes 10,000 sheets per year. That's two cases per employee, running about $40 a case. By the end of the year, an office of ten eats through $800 worth of blank paper.

A heavier drain on budget than paper is everything related to it: ink and toner, printer and copier repair. According to studies, the printing, copying, binding, and other handling works out to almost six times the cost of paper itself.

Yearly cost of paper and handling for a department of ten...........….………$5,600

Total yearly cost of paper filing for a department of ten...........................$57,480

Reduction of Operational Costs

Beyond the sizable labor costs related to handling and maintaining paper documents, hard copy storage incurs ongoing material expenses as well. If records are on paper, then obviously, one is going to use more of it, plus all the other office supplies that accompany it.

Less conspicuous are the costs associated with the space requirements demanded by the storage of paper files. Eliminating six average-sized file cabinets will typically free up office space for one additional employee workstation. In addition, older records often require off-site storage, as well as the material and labor costs of packing and moving.

Printer and copy toner, printer and copier repair, and other related handling adds up to six times that of the blank paper itself[2]. Further research shows that companies with paper methods photocopy each document an average of 19 times.

Of course, printing and copying do not disappear entirely in a paperless environment, but when paper no longer constitutes the primary medium for information storage and distribution, an office prints and copies significantly less.

Northwest Healthcare & Wellness Center
Medical practice cures clutter while cutting costs

"Typically, when one thinks of a medical record management system, one thinks of a larger office, but it makes just as much sense for a smaller office because you have fewer people and less space to handle the paperwork," says Dr. Stephen Smith, owner and primary physician at Northwest Healthcare & Wellness Center.

"M-Files makes my office so much more efficient. I have all my records and handouts at my fingertips. Anything I need to give to a patient, I just send it to the printer."

A combination of simple, all-in-one desktop scanners and the M-Files document management solution was the cure for clutter at Dr. Smith's private practice in Richland, Washington.

Stacks of folders no longer pile up on his desk. Instead, he scans and digitally indexes most every document, even the daily postal mail. The move to digital not only resulted in better service to patients (in form of faster staff response and more accurate handling of paperwork) but also in a reduction of office expenses. Dr. Smith removed long rows of file cabinets filled with patient charts and other records.

"Our facility is fairly small so space is a premium. Going digital allowed us to take out two large file cabinets and a desk, and turn an office into an exam room. In the first year, this saved us approximately $24,000 in rent and $5,000 in moving expenses. When you add in the extra revenue that the additional exam room generates, we start talking about some serious money -- about another $50,000 a year through the smart utilization of M-Files and a few scanners."

Cost Savings

Increased Efficiency and Productivity

Saving time and reducing budget outlays do not make up the full business value of the document management advantage. By removing the wasted labor associated with old filing methods, employees can execute more projects (increasing productivity) and spend more time and attention to client needs (increasing customer satisfaction). Opening up office area formerly devoted to file storage enables a business to expand without having to lease a larger space.

Therefore, the value of a document management system is more than just lower overhead; there is typically an amplification of business performance across the board.

The increase in productivity and revenue in most cases far outweighs the costs of the system, implementation, and training. According to an IDC study of new software adoptees, roughly half of the companies paid off the cost of the system within 6 months[3]. Overall, all participants found an average return on investment (ROI) of more than 400 percent after five years.

ROI, of course, varies based on the choice of system and the specific circumstances of each case. In some business situations, a digital system will create a quantum leap in growth because new capabilities give the company an opportunity to expand in ways it previously could not.

For example, most document management solutions allow secure access to company records and information from anywhere with an Internet connection. This feature alone fosters fluid collaboration within a geographically dispersed organization that would not have been possible with paper files or unmanaged PCs and servers.

In this and many other ways, a document management system often eliminates entire steps from business processes, thereby producing tremendous gains in efficiency, productivity, and ultimately, profitability.

Little Giant Ladder Systems
Software distributes manufacturer's sales materials nationwide

Little Giant Ladder Systems produces catalogs of inventive products and sells them through an equally inventive nationwide marketing network.

The 37-year-old family-run manufacturer brought its line of convertible ladders to national attention through TV infomercials starring its owner, Hal Wing. The marketing department also supplies hundreds of independent dealers across the country with a full array of marketing materials, everything from color brochures to video demos.

The company implemented M-Files to initially serve as a digital asset management system for its sprawling graphic design, product photography, and digital video content, which seemed to multiply each time they re-purposed the graphics into different sizes and compositions.

"We had thousands of files and were tired of not being able to find things," says Marketing Coordinator, Amber Moss. "We would spend more than twenty minutes looking for an image or file, and when we finally found it we were unsure if it was the correct version."

With M-Files, designers now save graphic content with metadata tags that distinguish one version from another.

M-Files also helped to consolidate all the marketing imagery that had been saved on both the network server and local workstations into a single, centralized location.

"The M-Files client-server configuration makes it possible for anyone who needs project files to get into any machine and connect to the digital storage vault," says Little Giant IT Director, Ben Rees.

The data vault can be accessed online from anywhere with an Internet connection. After adding a few security controls, the marketing department gave salespersons across the country the ability to login to the M-Files vault so they can search and download Little Giant Ladder brochure files, video demonstrations, or individual product images.

"M-Files has been a great help, especially in distributing these resources to the dealers," Rees remarks. "When they connect remotely, the sales people see a list of read-only folders they can access. They just drag and drop the files they want onto their desktop. It works really well for them. There are probably 300 or 400 dealers who use it on a consistent basis. This works for us, too -- our department doesn't have to handle hundreds of special requests or mail out printed materials."

Increased Efficiency & Productivity

Privacy of Company Information

Companies implement server firewalls and anti-virus solutions to protect against potential security threats from the outside. Yet research shows the biggest source of data tampering (as well as the most financially damaging) comes from the inside.

According to respected industry research firm Gartner, company employees are usually the culprits of unauthorized access -- 70% of the time[4]. Perhaps more troubling, employee cases comprise 95% of the breaches that cause a company significant financial losses.

Placing company documents into a paperless environment is the best method of gaining control over internal data security.

Talk of "data" in the context of information leaks makes one think of only digital content, but actually 49% of the reported access violations involve paper files, according to a survey by Ponemon[5].

Paper files are particularly vulnerable to information breaches because it is difficult to know where a paper document has been, who has seen it, or for that matter, whether it is missing or just misplaced. Migrating to an all-digital format gives companies a platform on which to establish effective security controls.

The same Ponemon study also makes a distinction between different types of digital data. 'Unstructured' data -- the files scattered among hard drives, laptops, and servers in standard Windows folders -- constitute the low-hanging fruit for data violators. These unstructured files are not embedded into any kind of document management system to track their usage or control their access. People can view, copy, or delete content without anyone knowing.

By contrast, a document management system will structure company documents into a single system that logs the history of user actions.

Structuring company files also enables password protection on sets of important documents. An administrator can make certain documents available only for certain managers (such as the head of HR for personnel files) or for a whole department of users (i.e., engineers for CAD design files) and exclude others from viewing or editing operational documents. The administrator can also define access permission rules for recurring documents to ensure protection is consistently applied to potentially sensitive material.

When managers have the ability to audit a trail of document usage and establish the permission rules into employees' daily workflow, a document management system becomes an inherent deterrent to inappropriate employee behavior. A real possibility of getting caught now counters the temptation to steal or sabotage company data.

The Mangold Group
CPA firm places client records into document manager for big returns

Clients trust the Mangold Group to keep their private documents secure, but also kept in a complete and organized package. This ensures that CPAs at Mangold will have no gaps in understanding when assessing clients' tax situations.

The Mangold Group tapped the M-Files document management solution in order to give their accountants greater command over clients' digital financial records, most of which are scanned from paper documents or copied from CDs. Each item is indexed in the system according to the tax year, type of document, and client identity.

"Once our accountants saw how powerful M-Files' search capability was -- all they needed to do was type in what they wanted -- they really got into it," recalls Technical Service Administrator, Michael DuFresne. "Suddenly, it was much simpler, faster, and easier to find files."

The document management system centralizes content that formerly resided on individual workstation hard drives. Accountants can now take work home by accessing company files from a secure online connection. M-Files enables the administrator to place password controls on sensitive client documents with bank account information or social security numbers. The system also ensures that accountants have all the files obtained from clients with no accidental misfilings or deletions. M-Files backs up all versions of business documents.

"With M-Files, we have the entire history of a document -- every time it was saved," DuFresne says. "So even if part of a file gets inadvertently deleted, you can always go back and look at prior versions of it."

Recovery from Data Loss

Most office workers have had a firsthand experience with data loss. The most common scenario usually involves changes to a single work-in-progress, which leads to another day's work or a delay in a project timeline. Less common, but far more devastating, is the catastrophic loss caused by hardware failure, accidental deletion, or natural disaster. Even a lost laptop can have long-term repercussions on the course of business.

The easiest and most economic way to protect against data loss on any scale is the routine backup of company data. Because manual backup procedures take up staff time and sometimes fail to completely capture all documents company-wide, most IT professionals now recommend automatic back-up via a document management solution.

Hospitals and health care clinics, where immediate data availability can be a matter of life or death, are required to implement backup mechanisms as part of Health Insurance

Portability and Accountability Act (HIPAA) compliance. An electronic document management solution places important files into a central repository and periodically creates backup copies at a secure off-site or online location.

Backups eliminate many of the worst-case scenarios of data loss, but other file management tools can also guard against the less serious, but more common, instances of lost document edits. Check in/check-out procedures, for example, prevent multiple users from editing the same document concurrently.

Effective document management systems also preserve all past iterations of business files, allowing users to back-step to prior versions after accidental deletions.

Given the high costs associated with data loss, these basic safeguards are now becoming essential features of an organization's IT infrastructure.

Streamlined Business Processes

Faster file retrieval, better organization, and increased data security are the immediate results of adopting a digital document management strategy. Beyond these advantages, managers can also make significant improvements in their business processes.

By using a document management solution to automate recurring procedures, managers gain higher levels of productivity and quality control. With a few basic customizations based on their own business rules, they can make almost any office task faster and easier.

Applying automation to workflow is relatively simple once an organization has an effective document management solution in place. Automated tasks can be added gradually and refined according to practical use. The right document management solution for your organization will:

• Cut time spent on repetitive computing tasks.

• Maintain consistent record keeping and file nomenclature.

• Eliminate mistakes and quality lapses that occur due to skipped steps.

• Facilitate clearer and more reliable communication.

• Provide managers a birds-eye view over work progress.

• Trace the source of work bottlenecks and employee errors.

• Allow greater staff flexibility -- new employees or substitute staffers will need less training on procedures since the system will guide them through the process.

Managers can use automation to impose a disciplined approach to complicated, multi-user workflows, where a single misstep can affect an entire chain of actions. In addition, they can apply configurations on a wide variety of simple tasks to eliminate repetitive work.

In either case, embedding business rules into a document management system extends the benefits of the solution well beyond the initial productivity gains from improved organization and retrieval.

Cypress Heart
Cardiology group tracks the circulation of medical transcriptions

Cypress Heart, a Wichita-based cardiology clinic, conducts nearly 2,000 appointments every month, resulting in a massive volume of transcribed reports. The transcriptions and edits go back and forth between clerical staff and physicians several times before approval. Once finalized, the summary is posted permanently into the organization's health record archive system.

"In the course of the process, documents were getting lost and misplaced," reports Operations Supervisor, Lisa Decker. "One of our physicians was getting behind because he was not dictating his visits in a timely manner. At one point, he was four months behind and no one in the office was aware of which documents -- or how many -- were outstanding. Just to determine what had been reviewed and what had not been reviewed was becoming extremely time consuming for the staff."

As a result, Decker implemented the M-Files document management solution to better facilitate the transcription workflow. Decker set up the workflow so that each new appointment generated a single template in M-Files.

When a user begins a new report, all the related M-Files database attributes populate the template automatically, including the doctor's name, date of the appointment, patient name, and date of birth. In addition, Decker added drop-down menus containing status tags as required fields. Now the transcribers choose from simple tags such as "waiting for physician review" whenever saving a report. The physicians also use M-Files to review their documents online and change their status to either "approved" or "needs corrections."

"This streamlined process helps keep the physician on the ball. We can search the system at any time to see what work is left outstanding, so months and months don't go by," says Decker. "Now we send status reports every week so all doctors get their tasks done a timely manner."

Streamlined Processes

EASY DOCUMENT MANAGEMENT

Compliance and Accountability

Many companies must comply with regulatory mandates for record keeping and transaction reporting, such as the Health Insurance Portability and Accountability Act (HIPAA) rules for health care or the Sarbanes-Oxley Act (SOX) for financial accounting. Others choose to voluntarily comply with standards to gain industry certification, such as ISO 9001 for manufacturing and engineering. In either case, compliance hurdles require a massive documentation effort in addition to the paperwork generated in the normal course of business.

The scale and importance of these efforts often makes an upgrade to document management solution somewhat of a requirement in itself. Organizations still reliant on paper filing or standard PC and server storage find it nearly impossible to cope with formal filing requirements without hiring the equivalent of a second staff. A document management system, on the other hand, can often manage the additional work associated with compliance efforts without additional administrative staff.

An electronic document management system that supports compliance with regulations or standards typically must provide:

- Automated back-up and archiving procedures

- A history log and audit trail of user file actions

- Automated workflow features

- Template forms that conform to specific submission rules

Even companies not regulated by a government agency or outside professional association are still subject to a higher authority from time to time. The concept of "risk management" involves implementing record-keeping and audit strategies that can defend a company in case of a legal dispute with vendors, customers, or workers.

Sometimes rather than a regulating body or other third party, the authority that needs satisfying is the organization itself. The same goals of risk management also happen to be the essential elements of good business, where important files are properly maintained and employees and departments are held accountable for their decisions.

The central question for most organizations is no longer whether or not they should adopt a document management solution, but rather which they should choose. Which will incorporate all the features needed to maintain complete compliance documentation? Which delivers the best value for its cost? How effectively will the system mesh with the everyday tasks of staff and integrate with existing systems?

The next two sections provide greater detail about common features of document management solutions and guidance on how to best assess your organization's specific situation.

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[1] IDC, *Quantifying Enterprise Search* May 2002.
[2] Arik Hesseldahl, *Businessweek*. "The Push to Get Rid of Paper," May 2008.
[3] IDC, *The High Cost of Not Finding Information* April 2003.
[4] Gartner Research, 2004.
[5] Ponemon Institute, *Security of Paper Documents in the Workplace* 2008.

Compliance

MicroPilot
Autopilot developers utilize DMS to keep up with ISO 9001

MicroPilot's technology guides unmanned aviation flights with greater and greater sophistication with each new line of products. Its current line is now in operation in more than 600 military and commercial applications in 60 countries.

Two years ago, the Manitoba-based firm met the demands of this expanding global market by applying for International Organization for Standardization (ISO) 9001 certification. Foreseeing new complexities in documenting processes and testing, President Howard Loewen selected the M-Files document management solution to maintain the high levels of efficiency for the development team, despite the extra paperwork associated with ISO 9001 certification.

"Most of what we do is software development. If you're at least half-serious about developing software, you need to have some sort of software revision control," he explains. "It just seemed natural that we needed a similar control system for documents as part of our certification process."

Loewen looked for a system that could track important files throughout the process with a complete history of edits, version numbers, as well as authorship -- who made changes and when. "Because the instructions we use to test our autopilots are so critical, we want to know the history of them. We need to look at checklists we were using two years ago, as well as the checklists we are using now."

"Before, we kept this information in a manual filing system. Now with M-Files, we just attach the serial number as an attribute while saving. This way we can tie together checklists, invoices, and other documents pertaining to that a particular product and get the full history with a simple query," says Loewen. "If you do ISO 9001 manually, the additional paperwork is a pain, but with M-Files, it's a snap."

EASY DOCUMENT MANAGEMENT

B # Major Features

Understanding Digital Document Management

In the last few decades, a series of advancements in business computing has eliminated many of the biggest inconveniences associated with manual document filing.

Developments in digital imaging, which converts paper to digital pages, and optical character recognition (OCR), which translates these pages to searchable electronic text, have combined with powerful database tools to form a completely new method of controlling business information. In a relatively short period, this revolution in information technology has transformed the concept of the modern office. The stereotyped notion of a chaotic, paper-clogged bureaucracy is replaced with a vision of an instantly responsive, globally active, and intelligently adaptive digital operation.

Even though many companies now operate primarily with electronic files, they still cling to an outdated logic when it comes to how they actually manage their documents. To understand how document management has evolved -- and to fully take advantage of the benefits of the new technology -- one needs to have a clear sense of how file organization and management works in a digital context and how it differs from traditional methods. Before beginning a company-wide document management initiative, one needs to become familiar with the basic system features that make this new digital office a reality.

This section outlines the technologies used today to track business documentation with this heightened level of speed and precision. It will also show how to apply these digital techniques throughout the enterprise to make business communication, processes, and management vastly easier and more efficient.

Ease of Use

While the decision to modernize operations is a rational one, the success of a document management implementation often hinges to a large extent on users' willingness and enthusiasm to adopt and use the system.

Simply put, no benefits will be realized (or at a minimum they will be greatly reduced) if end users resist the solution and look for ways to work around the system. Ultimately, usability should be one of the heaviest weighted criteria for document management system selection.

According to one Forrester survey, the most frequent roadblocks for Document Management System (DMS) initiatives are not technical, but human -- in cases where a user group essentially rejects hard-to-use software by simply reverting to old procedures[1].

As a subjective quality, ease of use might seem difficult to measure, however, it becomes fairly obvious after testing an interface as to whether it will enhance or detract from existing procedures.

A good way to anticipate staff reaction is to reflect on how much the system asks personnel to change their current work habits. At best, technology should be unobtrusive, allowing users to keep working as they have in the past. Nonetheless, it is unfortunately all too common for technology solutions to ask users to go out of their way to adapt instead of the other way around.

The Forrester survey mentioned above describes the reasons why staff might reject new software implementations. Some resulted when solutions were mandated from the top. For instance, the system was selected because it satisfied the needs of management but the staff members who had to use it daily regarded it as more work and more headaches for them.

Even a sideways transition -- expanding a software application that works in one department to another -- can prove problematic when the real day-to-day impact on the other department is overlooked.

Those faced with selecting a DMS should recognize the importance of ease of use and the impact of a new software solution on all users.

BSA LifeStructures
Architectural firm experiences the two extremes of DMS usability

"We actually began to implement one electronic document management system, but it was too difficult for the user," recalls Brett Bonenberger, CIO of Chicago-based AEC design firm BSA LifeStructures. The IT team encountered significant resistance among the design staff.

"In the previous system, users were forced to log in to the product to find what they were looking for. Once they got in and initiated searches, the results were there, but there were also some features missing in the process," explains Bonenberger. "Overall, users felt they had to go too far out of their way to access the repository."

The team then discovered M-Files in a magazine. "We played with the free version and could not believe what we were finding," says Bonenberger. "We investigated the solution further, and soon we made a decision to go ahead and pursue M-Files and begin migration from the prior system."

M-Files offered a simple solution to maintain document organization that followed the familiar steps of opening and saving files that BSA employees used already. Once installed, M-Files appears throughout the standard Windows interface: in the Explorer window or in Open or Save As dialogue boxes within each office application.

The IT initiative with M-Files encompassed AutoCAD drawings and other project information for 325 employees in two separate locations. M-Files commands integrated directly into the company's AutoCAD application, so designers did not have to leave the program for filing actions.

"That was the selling point -- the familiar user interface," says Bonenberger. "It kept it simple for the employees. It didn't change their workflow much at all."

Ease of Use

Deployment

Many business server networks are getting off the ground and into the cloud. Cloud-based platforms -- where software tools, data, and documents reside on remote servers hosted by third-party providers -- provide certain advantages over on-premise installations. Chief among them include:

- Elimination of up-front costs for server hardware and software licenses

- Reduction of IT staff resources for server maintenance, backup, and troubleshooting

- Scalable data storage for future needs

Typically, cloud solutions are flexibly priced through a Software as a Service (SaaS) subscription model. For organizations with a limited internal server infrastructure, a cloud solution can add enormous capability for little or no up-front investment. Operations are simplified because an extensive IT staff is no longer necessary since server support is handled by the service provider. All expenses for storage, software, and maintenance are included in the monthly subscription fee.

Companies that have already invested heavily in on-premise server systems may not see the need to abandon existing infrastructure, but might find the cloud a viable alternative to traditional expansion or upgrades. In cases where organizations add new departments, take on temporary projects, or otherwise need to quickly expand their data storage or access capabilities, a "hybrid" solution that incorporates a cloud-based platform into on-premise network scheme may be the most logical approach.

Import

One of the first challenges companies encounter during the implementation of an electronic document management solution is transferring content into the new file repository.

Hardware such as scanners and multifunction devices produce digital images of paper documents, which may be complemented by optical character recognition (OCR) software to create searchable and modifiable electronic content in a variety of formats. OCR programs may come integrated with the software provided with the hardware, as stand-alone software applications, or as an extra module in DMS offerings.

To transfer existing digital files stored on hard drives and servers to the new document management system, several options exist. Companies can import bulk amounts of data using methods to ensure information is correctly classified on import, or they can maintain copies in the original storage locations and link them to the system. Support for certain types of documents -- such as email and email attachments -- may vary among product offerings.

Companies adopting a new DMS should have a basic implementation plan that specifies which existing data should import into the system (including both digital and paper documents). The plan should also establish policies and procedures that will define which files and information go into the system on an ongoing basis, whether they are new application files, emails, faxes, or incoming paper documents.

These import rules need not be extremely complex; in fact, often it is best to identify the system that makes defining and implementing the plan as simple and straightforward as possible. One of the reasons some companies are hesitant to implement a DMS is that many systems on the market are far more complex than necessary. If the DMS solution being considered seems too complex or requires extensive amounts of consulting or training, it is probably best to consider other alternatives.

Identity

One of the most attractive features of digital document management is the ability to pinpoint a particular file out of potentially millions of items, and bring it up in seconds.

To classify electronic documents within a company system and retrieve them later requires a unique identifier for each document. On a smaller scale, items saved on a PC hard drive all may have unique names to identify them. One of the limitations with standard computing systems is that one can have two files with the same names, only in different folder locations. Over time employees can forget both the location of a file and its actual name.

A more sophisticated approach to file identity must satisfy certain conditions: the index must create a unique identifier for the file that is both independent of location and easily located by any retrieving user.

Metadata, virtual folders, and dynamic views

One way to accomplish these requirements is have users themselves choose identifiers -- typically keywords, or "tags,"

that describe the purpose or content of the document -- whenever they save a document. The keywords/tags become part of the document's metadata. Meaning literally "data about data," metadata also includes automatically retained information such as timestamps and authorship. The user-defined tags and keywords, however, become the usual means of document identification during retrieval.

Users who describe the file in terms of its metadata properties can quickly and easily pinpoint the exact document. For instance, typing the search term for a file's purpose ("proposal") and a customer name ("Brown") might be all the metadata needed to retrieve the latest version of the file. If "Brown" received more than one proposal, or if there's more than one customer name Brown, the system would list multiple results.

Like many digital searches, metadata indexing allows for Boolean expressions (e.g. AND, OR, NOT), which are useful for isolating certain sets of documents that all satisfy a classification rule. This approach provides much more powerful command over file archives than organizing content in traditional nested folders that categorize documents based on where they are stored.

With a traditional folder structure, users would have to choose to save the document either in one folder ("proposals") or an alternative folder ("customers") with a subfolder for "Brown"

which itself might contain a subfolder for "proposals." This structure quickly becomes cumbersome with no controls in place to enforce the original folder scheme. Retrieving users waste time hunting for the needed file. Users saving an item similarly must decide where to put a newly created file, or one they just edited.

With metadata associated with the document, however, the document is instantly retrieved with a keyword search on "proposal," "brown," or both.

The metadata indexing approach in effect displays "virtual folders," which are generated on the fly based on the context of a given user's need at the time (i.e., proposals by month, invoices by customer, or countless other search parameters). This mimics the browsing feature in traditional computing systems, although the actual tracking of files relies on metadata.

Some DMS offerings provide the option to create and reuse these dynamic virtual folders (also known as "views" in some systems) for common searches that users perform. The advantage with this approach is that the company can set up standard views for all users or for certain groups of users. In addition, individual users can set up their own views based on their needs, which creates an extremely flexible means of locating and presenting documents in a manner that is familiar and efficient.

Metadata vs. Folders

A property management company has just completed its capital budget for paving projects on all properties in Pennsylvania and New York for 2011. In a typical Windows environment, the employee defining the folder structure has to choose where the files are saved and if there should there be sub-folders. In this example, the main folder might be defined as one of the following:

| Projects	Budgets	Pennsylvania	New York	Paving	2011
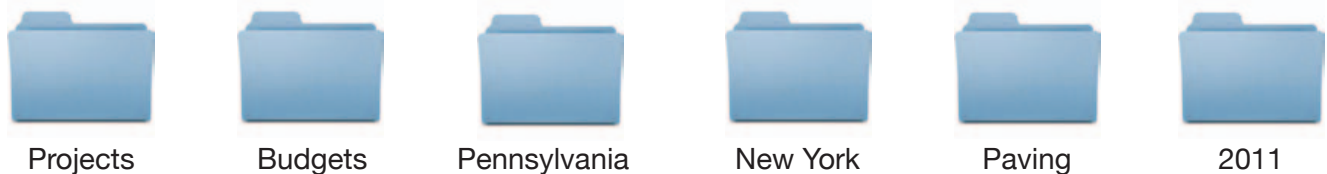
The employee often has to make an arbitrary decision as to how to set up folders and where to save documents. Later, another user who wants to retrieve a budget would likewise start trying possible locations at random, browsing each of the wrong folders before finding the right one.

Metadata embedded in files by a document management system can eliminate this guesswork when saving and opening documents. Metadata definitions make document identities independent of file paths or locations. All the folder categories listed above can simply be metadata tags or keywords. The system attaches all of these terms to the budget document.

"Project"
"Budget"
"Pennsylvania"
"New York"
"Paving"
"2011"
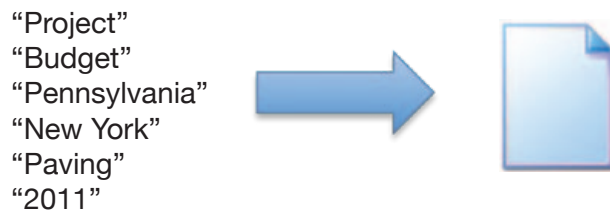
The metadata tags define the file's identity in the system. Users searching for a file type in any combination of metadata terms to retrieve the actual document, which is as simple as "paving" and "budget" and "2011."

Where folder systems implicitly force companies to choose one way to sort files, the metadata approach can sort documents in many different ways instantly. For instance, a manager wanting to view…

…results for…	…would type the terms:
all 2011 budgets	"budget" and "2011"
every project that includes paving	"paving" and "project"
every project in New York with paving	"paving" and "project" and "New York"
all documents about capital projects	"project"

Metadata indexing provides a means to re-sort any company information in the DMS at any moment. Employees and managers can now view and access documents more intelligently based on the context in which they need them.

Other applications of metadata

Metadata tags on documents have many additional uses that go beyond retrieval.

For instance, metadata might concern your company's file retention policy (whether an item is archived after two years or five years, for example). Timestamp metadata as well as a few additional database rules provide enough information for the system to automatically retire old documents at the proper time.

As another example, recurring company forms can indicate actions taken so far in a job process as a metadata tag. A search including such terms shows mangers which tasks are completed, which are in progress.

By adding even more information into the metadata identities of documents, it becomes possible for the system to automate all sorts of tasks: calculate due dates, email work files to certain users at certain times, or send calendar reminders. Refer to the features "Storage and Archiving" and "Workflow Design" later in this section for more details.

Index searches vs. content searches

How does metadata search and retrieval differ from the common search functionality already within operating systems for PCs and servers? There is an important distinction, and a reason why searches on documents indexed with metadata provide a more reliable retrieval method.

During a search of a hard drive on a PC operating system, the computer provides results ranked by its own logic, which is often different than the specific intent of the user.

In a common scenario, an employee is on the phone with a customer and needs to retrieve a certain document. A standard operating system search often returns a long list of results that the employee must take more time to sort through, and even then, it provides no indication if the document found is the correct version.

This type of search capability often works well for Internet content because it gives a survey of unfamiliar information based on a word or phrase. In a business, however, one generally frequently already knows the specific item resides in the system, and the point of a document management system is to locate that item specifically, and to do it quickly.

Traditional operating system search capabilities also run into limitations when company documents are not consolidated. If the file in question might possibly reside on different workstations, drives, servers, or web-based repositories, then several repeated search attempts are sometimes necessary. Most document management systems centralize data so searches are inherently more complete and efficient.

Full-text searches

Full-text searches -- those that find any word or phrase contained in the body of a document -- make up a vital component of a digital filing strategy. An effective DMS should offer tools for full-text search in addition to metadata queries.

It should be noted, however, that full-text searches should be used selectively as they are often less efficient.

Searching for a word or phrase in thousands or millions of documents in the company vault not only takes longer than a metadata search, it often returns many unwanted results.

For example, if a company has a client with a last name similar to a common English word, like "Brown" or "Day," a full-text search for the name will bring up hundreds of files referencing the color or the time period.

Morris & Associates
Manufacturer fills in ERP gaps with DMS metadata

Morris & Associates designs and builds industrial-scale refrigeration products and tracks most of its engineering and maintenance records in a networked Enterprise Resource Planning (ERP) system.

"Our company's ERP stores all of our vendor information, customer data, projects, job processes, as well as our inventory," says IT Manager, Heather Kent. "Pretty much the entirety of our business is located in this one application, but not everything. In some cases, there's some data we'd like to include, but can't."

As an example, the company maintains all its part lists in the ERP application, but the system has no feature to include a photograph or drawing of a part. "When we look up a part number, we want to bring up the essential data, and also verify if we've selected the right component visually."

Kent installed the M-Files document management solution to handle the extraneous documents that did not have a place within its ERP program. Because M-Files contains an open database platform, Kent discovered she could coordinate the two company-wide systems to operate with the same project numbers and part lists. This has allowed the synching of image files with ERP part information displays as well as a host of integrated tasks.

"One of the great things about M-Files is you can use SQL queries to directly pull information such as products, parts, or contacts from our existing ERP databases and link it to metadata on documents in M-Files," says Kent. "M-Files can actually pull our entire list of parts in our database. Any time a new part is added to our ERP system, M-Files automatically updates and pulls that information into its database."

"The M-Files document management solution turned out to be an excellent fit for our situation," adds Kent, "and we keep discovering new uses beyond those we initially envisioned."

Storage and Archiving

After adopting a document management solution, the actual hardware storage location of documents will be irrelevant to the average user, who accesses what appears to be a single repository.

In the background however, the system works to manage the changing conditions of server hardware storage.

The system should have the versatility to change to new storage locations in the future as the organization grows and new hardware is introduced.

Storage devices have evolved considerably over the last ten years and will continue advance at a rapid rate. It is important that companies can easily transfer their data from one data storage location to another while continuing to access the documents as before.

The IT administrator should also be able to designate certain hardware to store backups or archived files. Some systems may give options pertaining to file retention, including the capability to automatically delete of certain document types past a certain age as required for certain types of confidential recordkeeping, or simply as an efficient use of storage space.

Archive formats

Another consideration for long-term storage is the format of documents. It is recommended that archives utilize non-proprietary image and text formats (such as TIFF and ASCII, respectively). Even though one proprietary format may seem universal at the current time, this situation can rapidly change in the future.

The danger of proprietary formats is that if a software developer discontinues the application that reads the file, or the company no longer owns the software, there would be no way of opening and reading the document. TIFF image format and ASCII for text are universal, non-propriety standards that will likely have easily available conversion products well into the future.

Records management requirements

Records management is a specific aspect of document management that preserves evidence of a business' activity, usually according to prescribed rules. Department of Defense (DoD) Standard 5015.2 became a widely regarded benchmark for records management and has spread to use in many sectors of the corporate world. Some industries have further regulatory compliance mandates that require transaction reporting, auditing, and/or long-term record retention.

Records management relies on many of the features inherent in document management systems, but not all DMS products have the power to completely fulfill a records management mandate. If you have legal requirements for long-term records preservation, consult Section D of this document for more specific guidelines pertaining to Records Management.

Information Publishing

The dramatic leap in efficiency and convenience from DMS adoption often occurs because it becomes possible to easily access information from outside the office.

With the aid of a DMS and web publishing tools, any documents in the repository can be accessed by employees on the road, by partners in different cities, or from manufacturing centers.

A DMS-centered publishing system enables companies share large volumes of documents remotely while still maintaining data integrity and security.

In industries where companies must distribute information among several locations within a regulatory environment, information publishing becomes an important means of maintaining consistency within a quality management system framework. The DMS updates modifications to documents, so all parties have access to the latest changes.

Whatever the reason for large-scale information publishing, companies can deploy either an on-premise or cloud-based DMS that is customized for their specific needs. Companies can also use cloud-based document management solutions to solve the platform compatibility challenges across Windows, Macintosh, and Linux/Unix operating systems.

Most solutions will provide appropriate access permission and authorization controls. In addition, remote users can be granted permission to only certain documents with limited read-only capabilities if necessary, but they retain the same browse, search and retrieval capabilities as when accessing the DMS from within

Fläkt Woods
European manufacturer shares project files through online portal

Jouni Akras is design manager at one of the world's largest manufacturers, Fläkt Woods, which makes massive air circulation systems for industrial use. His team of engineers was the second department within the organization to implement M-Files electronic document management solution.

Although the focus of Akras' department is design, the document control measures were applied universally, not just to CAD files.

"Of course we produce a lot of 3D CAD files, but we also generate a lot of other files, typically Word, Excel, graphics, and so on. M-Files tracks and organizes all of our documents. We wanted a comprehensive solution for product designs and all other support documentation."

Another motivation for adopting M-Files was its dual function as a publishing system.

"Up to now, we had been using multiple methods to share our files with our customers and suppliers via email, FTP sites, mailing copies of the documents they need, and so on," explains Akras. "Now we can just give them a login to a new website to access to the files remotely."

M-Files technicians helped Fläkt Woods configure the system for its external file-sharing portal, which can be accessed from any web browser. As with an on-premise document management system, easy permission controls allow outside parties to access entire categories of relevant documents, while still maintaining internal data integrity, security, and organization.

"We saw the potential to leverage M-Files in many ways," says Akras. "The publishing system was one of most important."

the office.

Workflow Design

Workflow design is a management tool that eliminates bottlenecks, maintains consistency and quality in documentation, and assures employees do not accidently skip a step in important procedures.

Once companies index their files in a DMS, they can start to add dynamic controls to manage and optimize recurring business processes. The system can automatically route documents to different individuals at different times, fill in forms, calculate due dates, send email notifications, and post calendar reminders.

DMS workflow features should include offer easy-to-customize

automation that can move, copy, and delete documents, as well as populate templates with database contents. And just as metadata identifies documents by purpose and content, it can additionally indicate the completion status and position of the item inside a workflow cycle. Look for Open Database Connectivity (ODBC)-compliant systems that feed DMS data to and from other applications and provide the ability to record and modify workflow conditions.

Workflow tools operate well in tandem with history logs and audit capabilities to give managers a tool for comparing performance with previous work cycles and holding all participants accountable for work quality.

The Percheron Group
Real estate firm makes lease contracts more intelligent

Peter Uhlman, president of the Percheron Group, a commercial and residential real estate development company, makes a lot of investment decisions. In particular, he believes one such decision was the successful implementation of the M-Files document management solution at his Philadelphia office.

M-Files tracks every company document, including construction blueprints for new developments and all the legal and governmental paperwork required to maintain each of Percheron's 250 current properties.

Because lease and sales contracts go through countless revisions over the course of negotiation, Uhlman likes the fact that the system saves all old versions, while ordering them automatically.

Additionally, custom workflow tools within M-Files gives his staff even greater control over contracts. "With each new lease, our agent will fill out a Word template of a contract, but the blanks in this boilerplate also double as entries into M-Files metadata. The beautiful thing about M-Files is that you only have to enter this basic data once."

The blanks in the boilerplate contract -- the property location, tenant name, dates of expiration, and all dates of triggering events -- do double duty as attributes of database fields within the M-Files document management system. Dates in the blanks often represent legal deadlines, such as insurance renewals, inspection scheduling, property taxes, or ending of a lease term. Since the system tracks these future dates, it serves as a very effective workflow planning tool.

"I can type in a query of anything: -- "which insurance certificates are set to expire in North Carolina within the next 90 days?" -- for example, and M-Files instantly gives me the answer in an abstract report," says Uhlman. "Given the volume of information our business has to manage, M-Files, in a very simple and easy-to-understand method, has given us control over all of it."

Security

Most companies have sensitive information, for which access must be strictly controlled. Health care providers must protect the privacy of patient histories; accounting firms must limit access to confidential financial records; and only certain authorized managers are allowed to read employees' human resources files. Further, as demands for remote employee access increase, so does the necessity for more sophisticated security controls.

Some document management systems have a rights management module that allows an administrator to grant access according to document type. For instance, "all personnel files" can be restricted to only be accessible to certain people or groups of people, (e.g. "accounting managers" or "human resources staff").

When a DMS expands beyond the scope of a single department, it also becomes necessary to take appropriate internal security measures, such as separating critical files away from those not responsible for the work. This reduces the risk of accidental deletion or alteration, as well as intentional security breaches. Ideally, a DMS should have the ability for managers to draw distinct boundaries between management levels and work groups.

Secure document management architecture should contain the following:

- Authentication -- through user names and passwords

- Administrator authorization -- permissions granted to users or groups of users

- Compatibility with network user groups -- where the DMS can borrow the list of users, their definitions and groups from an existing network

- Ability to audit past file access or user action history to spot or investigate suspicious activity

Integration

As mentioned earlier, one can evaluate the usability of a DMS in large part based on how much of workers' daily routine is changed by its adoption. Integration of a DMS into existing systems aims to minimize the amount of disruption to normal office work cycles.

User interface integration

Document management solutions differ from other business applications in that they function less as a standalone system, but instead one that is intended to be used in concert with other applications (namely, those that are used to create and edit the files or documents being managed and tracked).

Ideally, the integration between the DMS and other applications is such that an employee can search for and open a file from the document repository from inside a business application -- as well as edit and save changes -- without having to use a separate application interface. An effective DMS will feature this type of integration within any document-generating application, including word-processing, spreadsheet, CAD, or image-editing systems.

DMS solutions that include this type of seamless integration with all applications have a better chance of staff acceptance during implementation, and involve a minimal training effort for new employees to effectively utilize the system.

Backend integration

Backend integration is not the sharing of interfaces, but rather the sharing of data from existing systems.

For companies that already rely on a widely distributed database, backend integration with DMS also contributes to a seamless transition. It is important that company databases with a specific focus -- such as Customer Relationship Management (CRM) for customer and prospect interactions and lead tracking, Health Records Management (HRM) for patient medical charts and forms, and Enterprise Resource Planning (ERP) for manufacturing and engineering -- integrate well with the DMS, rather than cause interference with repeated data entry or data discrepancies.

A dividend of backend integration between DMS and existing systems or databases is a quicker and more unified way to classify and index files in the DMS because the data is managed from a single source.

To use the customer contact information from a CRM application as an example: metadata for all documents related to a given customer can be driven and populated by a direct link to that data in the CRM system. Some systems also provide a bidirectional link, so if a user has permission to modify certain customer information in the DMS, this update will also be reflected in the CRM system.

Integration can be achieved through various with seemingly disparate applications, and can consist of out-of-the-box interface capabilities within the DMS, such as the ability to create custom SQL queries from the DMS to the other system, or by other means such as scripting tools and APIs.

Consult the user guides of existing company applications for backend compatibility information.

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[1]Forrester Research, "How to Drive Document Management Adoption," 2006.

C Planning, Selection, and Implementation

Fitting Document Management Into Your Business

The results for "document management software" in popular search engines brings up a wide spectrum of products and services, often very different from each other.

"Document management" is a broad term that can encompass imaging and text recognition, database indexing, version management, business process automation, and document or record retention and disposal. Document management solutions range from multi-million-dollar enterprise-wide systems for global corporations to free, open-source applications for small businesses and individual users.

After sifting through search results, people seeking a solution for managing their specific documents and business processes soon find that the task is often not as straightforward as procuring other business products. Even within the range of enterprise-sized solutions, applications from document management system (DMS) vendors can still vary drastically in price, features, and area of specialization.

Because document management needs can vary significantly by industry, and due to the fact that every organization has its own unique requirements, so too do DMS offerings vary greatly in capabilities and price. Evaluating the various alternatives and making the right choice for a specific business can be a daunting proposition. As discussed in Section B, there is a real risk that an implementation will fail if it does not align well with the practical day-to-day needs of the users.

Selection of a document management solution should not begin with product investigation, but instead with a thorough self-assessment. Choosing one solution to be at the heart of business operations -- one which must integrate seamlessly with other systems and support a diverse set of users – deserves a careful and methodical approach. A strong understanding of both the technical features of the proposed solution and one's own existing business processes is a prerequisite for any successful document management initiative.

This section provides examples of the kinds of questions an organization should ask itself well before it begins asking questions to DMS vendors. Assessing needs, stating desired outcomes, and collective planning lay the groundwork for a thorough selection process and smooth deployment.

First Steps

Needs assessment

A needs assessment entails a discussion between managers and staff and results in a written outline of an organization's document handling needs, constraints, and objectives. Different organizations may require drastically different solutions that best address their particular circumstance, so it is important to clarify exactly what issues the solution must solve.

Using the worksheet provided in this section, or creating your own custom checklist of preferred features, will help build a consensus for action while identifying all the electronic document management needs the new system will need to address.

Evaluators can then use the checklist when talking with vendors to help focus the conversation on how the system will actually fit into existing IT infrastructure and work processes.

Needs Assessment Outline

Goals and Objectives:

- What do you want a document management system to achieve for your organization?
- In what areas of the organization do you expect to use the system?
- What are the most pressing problems related to managing your business documents?
- With which current business software and networks will the system need to interface?

Organization Needs:

- How many people need to access files?
- Will different employees have different levels of access to various files?
- Do you have a server-based network established, or does your organization operate via a cloud-based environment, or a hybrid of the two?
- Do you intend to expand/upgrade your computer hardware/servers/scanners?
- What is the estimated volume of incoming paper documents into the organization weekly?
- What is the estimated volume of incoming electronic documents into the organization weekly?
- How many new documents are generated weekly inside the organization?
- Will you require audit trails? On which materials?
- What is your current retention policy?
- What are the retention schedules for existing document storage?

Distribution of operations:

- Will the system accommodate electronic correspondence (emails, email attachments, and faxes) into the repository?
- How many office locations require access to the new system?
- Do employees need to take documents from the office home or on the road?

Paper to Digital:

- What is the volume of existing paper files (# of file cabinets, boxes in storage facilities) that will transfer to the digital system?
- Which types of existing paper documents will you include/exclude in the system?

- Which types of incoming paper documents will you include/exclude in the system?
- Who will be responsible for scanning the backlog of files?
- How many people will scan incoming files on an ongoing basis?
- What is the procedure for paper files after scanning them into the system?

Daily Workflow:

- Which tasks or procedures are guided or tracked by forms (e.g. checklists)? Similarly to create recurring documents, what is the repeating cycle of review and revision?
- Who are the points of contact in each step of these procedures?
- How might template forms, workflow status flags, and automatic notifications streamline the flow in each of these cases?

Group input

When preparing the initial needs assessment, implementation plan, process maps -- and as an ongoing practice over the course of the solution evaluation process -- it is important to include representation from as many of the potential user groups as possible.

This is not just to generate "buy-in" from employees and avoid the perception that a new system is forced upon them. Workers who know and perform current business processes intimately can provide invaluable input about usability issues as well as identify new ways to maximize efficiency and productivity in the context of system automation.

It is, of course, better to understand process needs from those on the front lines before, rather than after, solution deployment.

Process map

Evaluators should collect details of existing office operations from the users in a process or workflow map or flowchart document, especially if automated business processes and workflow will be a component of the solution.

For example, where do processes start, who are the participants at each step, and what are the deliverables or actions required from each? Who needs to review and approve collaborative documents? When completed, how are documents and/or records organized and archived? How long should records be retained?

A process map or flowchart for each major task will bring important issues to the forefront and reveal the finer details of solution requirements.

Implementation plan

An implementation plan helps managers budget and schedule the system selection and installation process, establishing a scope and timeline of the project. The plan should be prepared in advance of the solution selection because it provides definite parameters for decision making. The plan should define the selection and implementation phases in terms of:

- People. Who will make decisions, evaluate systems, organize meetings, provide feedback install and/or configure the solution, and conduct training? Who will use, administer, customize, and maintain the solution? Will outside experts (i.e., vendor technicians or consultants) be included, and if so, to what extent?

- Time. What are the expected milestone dates? Many companies initially deploy a pilot program by adopting a DMS for one user group or department and then gradually expanding the system to other areas of the business. The plan should give an estimated timeline for each stage of implementation.

- Documents. Which documents will be imported or scanned into the system upon deployment? Which files enter the system an ongoing basis? Are there rules that determine which items to include or exclude from the new system? How much file storage capability is needed now and in the future?

- Hardware. Where are documents currently stored, and how much storage is being used? If the solution incorporates on-premise software requiring an internal server, what capabilities are required in terms of CPU, RAM, file storage, and so on, and how should they be configured on the network? Is the need for more storage anticipated in the future, and if so, can server storage capability be expanded to accommodate?

- Remote storage. Similarly, if considering a hosted server on the cloud, how will the deployment impact storage requirements? Are certain browsers or browser versions required for access? Does the cloud solution require extra options or modules? Does a Software-as-a-Service (SaaS) pricing model give favorable cost advantages compared to the licensing, hardware, IT support expenses of an on-premise solution?

Price is always an important criterion to consider. However, it is often difficult to obtain an accurate cost comparison from web research alone, since many vendors do not post pricing on their web sites in order to encourage a direct engagement with sales representatives. In addition, pricing models are often complex with various license types, modules, volume discounts, maintenance fees and consulting services.

Therefore, it is best to create a short list of applications that may likely provide the necessary functionality to meet the organization's needs, and then begin to contact the DMS vendors and inquire about details, software demos and trials, as well as estimated cost.

Evaluating interfaces

To measure the usability factor for each solution under consideration, one has to see the solution in action. It is important to include other internal users during the assessment of the interface to see how it will affect the performance of day-to-day tasks.

At all points in the evaluation, keep in mind the usability (or ease-of-use) of the system by gauging how much training would it take for users to grasp the basic commands, how much using the system would affect their daily work habits, and how quickly administrators will be able to pick up the more complex tasks of setting up customized workflow and reporting tools.

Ideally, a balance should exist between an uncluttered interface (one without too many buttons or options) and the immediacy of commands (how quickly users can accomplish a task without clicking through a long series of screens).

The easiest way to begin evaluating a system in detail is through a live demonstration, typically through an online presentation by a vendor representative. Vendors will likely show off the strengths of the solution, which underscores the importance of using the needs assessment as a tool for gleaning more specific and usable information from vendor discussions.

Solution Evaluation

Once the field of candidates narrows through vendor demos and Q&A -- paring the set of likely solutions down to just those that cover all functionality and usability requirements -- it is now time to "test drive" the top prospects.

Rather than simply downloading trial versions to peruse solution capabilities, work with system vendors to pilot test real-world business scenarios. This type of "real-world" evaluation requires a greater commitment from the organization to identify projects they can pilot test with the solutions under consideration. However, the result is a much more valuable evaluation experience since the systems are tested in practical, production-level situations instead of hypothetical scenarios.

The final decision should be based upon not only research and comparison between different candidate systems, but also through staff feedback on real-world pilot projects.

The DMS Hunt

Superconductor maker Tabula shares its DMS selection process

In many major life purchases in life (such as cars or real estate), sales tactics attempt to steer you towards higher price tags and away from a clear comparison of alternatives.

Mangers at Tabula, Inc. discovered the same is true with a recent IT purchase, a document management solution.

Tabula, a privately-held, venture-funded semiconductor company based in Silicon Valley, develops 3D programmable logic devices. Shortly before it introduced its semiconductor product last year, Tabula needed to find a suitable document management system for the 110-employee company.

The search for a simple software product, however, was far from simple. Dr. Sridhar Kasichainula, Senior Manager of Quality and Reliability, shares Tabula's experience and offers some advice for managers in a similar position.

Q: What requirements did Tabula have for document management?

SK: Even though our company is making a complex product, our file handling requirements were pretty much a textbook case and not much different from any other company. We needed all of the very typical features associated with digital document management, such as version control, access permissions, workflow for file changes and approvals, archiving, and history logs. Basically, all of the classic bullet points of a document management system.

Q: How did you identify suitable candidate solutions?

SK: We essentially did all our research through the Internet. There are a lot of products and services out there, all claiming to do pretty much everything. It was challenging just sorting through all the alternatives, not to mention getting more than very high-level information or feature lists, and getting past the marketing hype. Many vendors are almost intentionally supplying minimal information to force you to engage with their sales teams.

When we searched for information management software or document management systems, a lot of the generic business sites would come up. As for reviews, we really couldn't find any. The only information these business-related sites would have would be a generic introduction—a paragraph or two that was pretty much copied from the software vendors' websites or marketing materials—then just a few blanket statements and bullet points

Q: How did you go about the process of selection?

SK: What we finally had to do was compile a list of ten candidates and do our own comparison-shopping. Our list focused initially on the offerings that contained all the features Tabula needed, even though we were unsure on costs in the beginning. We found some prospects that looked like they might fit and we then worked down the list, installing and evaluating each one before we came across a product that we eventually decided to go with.

The DMS Hunt

Q: What system did you ultimately choose?

SK: We had M-Files on our list, so we downloaded and played around with it a bit before the M-Files sales team in Texas contacted us. We didn't have to call them -- they called us. We really liked the support. They answered our questions and were very helpful. That is a very good sign. It gives you a lot of confidence going forward that if you run into any snags, it will be taken care of.

The software was mature, having been around for nearly 10 years; and it was still being developed and upgraded, so that means that any bugs can be fixed. Cost-wise, when we got the actual quote for our licensing situation, it worked for us.

Q: How did the features match your requirements during evaluation?

When it came to price for capability, M-Files was clearly the best choice. The solution was really a very nice fit for our situation.

We thought the flexible customization of the solution -- the views you can create, the workflow rules you can enforce, and the structures that guide document editors and authors -- formed a very rich set of capabilities.

We needed something that new people can just jump into without any training. At a startup, nearly everybody could be said to be a new employee. And as the company continues to grow rapidly, we'll have even more people coming aboard, needing to understand where to find information and how to use the system.

Most people are familiar with Windows, and M-Files' Window-like approach is very much in tune with what employees would naturally do to save or find files. And unlike another system we tried, we didn't find any bugs in the M-Files test at all.

Q: What was the result after you implemented the solution?

SK: After we started using M-Files in production, we discovered that there are actually many more powerful features within M-Files than we had envisioned initially. As Tabula grows, not only will M-Files scale seamlessly with our current implementation, it also has the depth to support more advanced requirements as our use of the system grows.

The capabilities are there — waiting; that's the great thing about it.

Among the users here who are fully up and running with M-Files, I haven't heard of any issues. The best feedback of course is no feedback, meaning that there's a bare minimum difference between M-Files and the interfaces they're used to in a standard Windows environment. I think that speaks volumes on the level of comfort and ease of use.

Compliance Issues

For organizations that must meet compliance requirements associated with regulations, laws, industry standards or certification, an additional set of overriding concerns will factor into the selection process.

Legal

Some organizations face significant exposure to civil or criminal liability associated with non-compliance. In these cases, a document management system helps ensure processes and procedures are strictly followed, in addition to capturing and maintaining a verifiable record of user actions and past versions. History logs provide evidence of compliance when and if an audit or compliance-related issue arises.

The DMS can prove indispensible for enforcing proper procedures and greatly speed reporting and audits. However, bear in mind that technology solutions are only aids to compliance; no system alone can ensure complete compliance since it is the organization that must implement processes and follow them.

Certification

Other organizations in the engineering, product development, and/or manufacturing sectors may voluntarily seek certification from a third party that oversees industry standards or international compatibility requirements.

As with legal records, ensuring that required procedures were followed and associated corroborating documentation was maintained becomes of critical importance. A document management system can assist with not only achieving certification, but do so in a much more efficient and cost-effective manner.

Time stamps and format

Regardless of the governing agency involved, two common requirements of compliance and standardization are particularly well suited for electronic document management tools:

First, information collected must be "time-stamped" with key milestones such as the date of creation or dates of review and approval. These records should also include the individuals who prepared, reviewed, and approved the associated documents.

Second, each version remains preserved with key time-stamps and electronic signatures of the individuals involved in unalterable media format, for example, DVD-ROM. In the financial world, this "unalterable" clause often also includes an independent third party who maintains a library of duplicate records which auditors can cross-reference.

Overall, requirements for document management system in a regulatory environment frequently include:

- Precisely mandated reporting formats and media
- Unalterable recording formats
- Transfer capability for a specific set of records to a third party
- Controls against data loss, tampering, or privacy breach
- Flexible cross-referencing with other indexed systems
- Proper instructional manuals describing software functionality and customizations
- On-demand and secure retrieval, including secure access and retrieval from remote location

Elimination of paper records

Increasingly, scanned document images are legally acceptable and organizations may not have to retain paper originals. A legal expert can provide the specifics for the industry or jurisdiction in question. There are, however, certain common requisites concerning moving from paper records to an electronic document management system:

- Electronic versions of documents should reside in unalterable storage formats (e.g. DVD)
- Effective controls against data loss, deterioration, tampering, or deletion
- Audit measures to detect and identify the source of unauthorized file handling
- Ability to accurately and completely transfer and/or copy all documents and related metadata
- An indexed system for document retrieval
- Explanatory materials for others to use the document control system

Compliance Considerations by Industry

Financial services

Any firm that handles the finances of others is subject to scrutiny both in terms of protecting client privacy and the consistency of funds handling. To ensure accountability, the Securities and Exchange Commission (SEC) requires firms to index all transaction documentation by date and user and store the records on unalterable media.

In many cases of document management system implementation, compliance officers can speak directly with the vendor to get a thorough explanation of compliance requirements for auditing.

Retention of financial records are required by SEC rules 17a-3 and 17a-4, FINRA rules 3010 and 3020, Sarbanes-Oxley (SOX), and the USA PATRIOT Act, but all vary according to context.

A DMS can embed metadata of retention schedules onto each electronic document and automatically transfer expired files. For more information about record retention and destruction, see the records management discussion in Section D of this paper.

Healthcare

Although electronic health records (EHR) for patient histories have been around for years, many medical practices, especially smaller ones, continue to rely on paper charts. In 2008, the Federal government introduced incentives to move the profession closer to an all-digital platform.

The benefits of digital systems for healthcare information are numerous. For one, health care providers can instantly pull up patient histories, rather than waiting and deferring treatment decisions. Even document management technology applied to items outside health records – billing, patient processing, internal review, and transcriptions – can help the increase efficiency of medical resources and provide faster response to patients.

Health Insurance Portability and Accountability Act (HIPAA) standards generally apply to most medical practitioners in the area of document control. Doctors and hospitals need prevention measures for non-consensual release of protected health information (PHI) as well as conform to local statute rules for Release of Information (ROI). In all cases, organizations need audit trails to demonstrate regulatory compliance, and a retention policy for different kinds of records (see Section D of this paper for more discussion about records management).

Document management systems can provide solutions for all aspects of health care operations and complement an existing EHR network.

Government

While much of the private sector has leeway in the organization and management of business files, municipalities, law enforcement agencies, executive, legislatures, and courts have long been governed by rules that require proper handling of official records. Records (documents that fall under the designation of potential legal evidence) are discussed in detail in Section D of this guide.

In general, document management systems prove instrumental in fulfilling legally mandated requirements in government in the following areas:

- Retention -- A host of Federal programs demand that organizations maintain a record retention policy: COPPA, E-SIGN, FACTA, FCRA, FOIA, FRA, Gramm-Leach-Bliley, GEPA, HIPAA, OSHA, Sarbanes-Oxley, and UETA to name a few. Electronic document management systems can embed the intended retention period onto each record and also automatically transfer files of a certain age out of the system.

- Public Access -- Certain agencies must follow public records acts (PRA), which guarantee citizen access to documents for the purposes of government transparency and public research.

- Requests for public information, however, can overwhelm staff resources if records are in paper form or informally organized within a digital storage system. Electronic document retrieval results in prompt request fulfillment, reducing the work hours devoted to PRA mandates.

- Some organizations go farther by using a DMS as an online search tool. Citizens can easily peruse and download public records research, while the agency greatly reduces costs of printing and staff time.

- Historic Preservation -- Digitizing historical archives gives officials and citizens access to information, while protecting older and more fragile paper documents from handling. For legal reasons, some government records also need to address long-term record preservation (100+ years) concerns.

Manufacturing and Engineering

In the areas of product development, engineering, and maintenance, non-governmental standards and industry certification programs commonly guide the majority of work processes. In these environments, the International Organization for Standardization (ISO) predominates as it applies to manufacturers in a wide cross-section of industries. Following these guidelines assures technical work performed is compatible with other products and systems.

Achieving ISO certification can help manufacturers expand to international markets.

In order to gain certification, design, engineering, production, and quality control procedures need to be documented in periodic reports. A document management system can help firms by ensuring technical instructions are easily retrievable and up-to-date as well as by generating the documentation needed for certification. Automated forms and document templates can aid in the proper completion of each documentable task, and create a reliable audit trail.

The ISO 9001:2008 standard specifies requirements for a quality management system when an organization:

- needs to demonstrate its ability to consistently provide product that meets customer and applicable statutory and regulatory requirements, and

- aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements.

More than one million organizations in 175 countries have implemented ISO rules for document handling over the last decade. Workflow and indexing tools of document management systems can help ISO-certified organizations in these basic objectives:

- Approve documents before they are distributed.

- Review/approve/update items on a periodic basis.

- Make the correct version of document available at point of use.

- Identify the current revision status of documents.

- Retrieve, control, and monitor documents externally.

- Prevent the accidental/unintended use of obsolete documents.

- Preserve the usability of documents.

Bentley Instruments
Scientific supplier finds simple way to control ISO documentation

Henrik Lyder, principal of Bentley Instruments, discovered a demand for his specialized technology all over the globe, or at least wherever there exists a population of cows. The staff in the Minnesota office began to engineer Bentley's line of milk testing equipment according to international standards. Today, the company has a new office in Europe and dairy customers in more than 30 countries worldwide with exports constituting 70 percent of its sales. With its entrance into the global market, however, came from the need to achieve International Organization for Standardization (ISO) certification.

"Through the process of becoming certified, we realized we didn't have adequate control of our paper flow," Lyder says. Scanning the ISO documents into digital form did not quite solve all the problems. Bentley needed a more systematic way to track, share, and retrieve ISO guidance, as well as related part and product information. Since standards are updated over time, engineers in Minnesota and support staff in Europe needed to know they were both using the correct guidance. Different teams working off of different standards would constitute a serious loss of time and money.

Bentley deployed the M-Files document management solution that featured remote access for multiple locations and the metadata capabilities to index both instrument designs and ISO documents according to project, standard, and date of issue.

"Adopting a digital asset management system ensured our people could find the most current documents -- the most up-to-date designs, the most up-to-date instructions on how to build, and the most up-to-date manuals -- instantly, rather than having them rummage through a paper library or a chaotic PC folder system," says Lyder. "And we now have it in one location, accessible on both continents."

ISO Certification

EASY DOCUMENT MANAGEMENT

D Records Management

Treating Documents As Official Records

Some organizations have special protocols for document handling in order to comply with State or Federal regulation, conform to industry standards, or adhere to their own internal rules of corporate governance. In these cases, documents are valued not just as a means to conduct the business of the present, but also as evidence of activities in the past.

Legally speaking, when documents contain any information regarding internal company processes, transactions, or decision-making, they reach the status of a "record."

Record management (RM) is a formalized and comprehensive methodology for handling these important documents; a discipline that long predates digital systems. Whether for paper or digital files, records management applies a consistent set of rules to each stage of the life cycle of a record, from its origination (creation or receipt) to its eventual disposition (transfer or destruction).

Although records management and electronic document management are two separate concepts, technological automation plays a large role in achieving record management objectives, as electronic formats are now commonly accepted as legal evidence.

There are many reasons why solutions to RM mandates are increasingly in demand. Organizations that have maintained RM systems over a long period of time have likely updated their system in piecemeal fashion as necessary during its existence, and largely because of this, now lack comprehensive scope or compatibility with newer systems.

Due to significant technological advances and increasing demand for automated RM, there are now many newcomers in the RM marketplace. While RM has long been a necessity in government, legal, financial, and medical organizations, recent legislation has also mandated specific organizational reporting processes and financial transparency protocols. Corporate scandals have also raised concerns about the conduct of employee actions and the risks of litigation or criminal investigation.

To some extent, all organizations face the risk of lawsuit and the sizable monetary costs that even a successful defense can impose. A legal defense team would have to prove the validity of past actions, which is typically accomplished by providing thorough documentation. Even if an outside authority does not require it, proper record management is the best way to mitigate these risks.

The Rules of Record Management

To understand how record management (RM) solutions can help to achieve records compliance and mitigate risk, one must first understand the rules and legal constraints that apply to records, especially those in electronic form.

The ISO (International Organization for Standardization) 15489: 2001 standard defines records management as "the 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 business activities and transactions in the form of records."

A widely recognized de facto standard of records handling by digital systems across both government and industry is the U.S. Department of Defense (DoD) 5015.02 standard. This guideline outlines in detail the proper way to capture, classify, control, and dispose of electronic records, and is also endorsed by the National Archives and Records Administration (NARA).

Much of RM involves identifying official files for retrieval and determining their position within the timeline of the **record life cycle**. Should the record be classified as active or inactive? Should the record be retained, reformatted, archived, or destroyed? In a regulatory environment, well-defined rules govern each step in this lifecycle.

A **records schedule** refers to an official policy of retention periods and disposal. Digital systems can simplify and streamline record handling by internalizing these rules, which prevents workers from making improper actions, while also automating many of these time-sensitive functions.

A **records series** is the basic unit of categorization for records. Series codes can be created in a way that best suits the organization. Each series category should correspond to an established records schedule. In order to comply with DoD 5015.2 criteria, RM solutions must place restrictions on which files can enter a record series, and once assigned, ensure files cannot be moved or modified.

As discussed earlier in this guide, **metadata** indexing plays the central role of embedding important "data about data." In the context of records management, however, record metadata should conform to a strict set of universal conventions to make search and audit actions consistent from organization to organization.

The **Dublin Core Metadata Initiative (DCMI)** provides 15 basic metadata categories that are also recommended by ISO Standard 15836 (2003) and NISO Standard Z39.85 (2007):

1. Title
2. Creator
3. Subject
4. Description
5. Publisher
6. Contributor
7. Date
8. Type
9. Format
10. Identifier
11. Source
12. Language
13. Relation
14. Coverage
15. Rights

For more details on practical usage of these metadata fields, please visit: **www.dublincore.org**.

Additional metadata fields apply for the purpose of noting the relationship a record has to other records. The linking feature identifies other records that support the record, which supersede or succeed the record in periodic sequence, or contain previous renditions of the record. Within a digital database framework, record-linking functions are similar to other metadata tags, in that they are used to identify and retrieve document objects in storage.

A common option in document management solutions is **versioning**, a feature that automatically saves and sequences revisions of a single document, which is organizationally preferable to saving as a new filename (e.g. "filename1.docx" or "filename2.docx"). In RM conventions, this automation is required. All working versions should be preserved with the same record name, independently retrievable, and contain its own metadata. A records query should bring up the latest version, while giving options to view all previous ones.

In cases of audit, investigation, or litigation, the electronic records management system should be able to conduct a records freeze on a folder or delineated set of records, which prevents the removal or modification of records therein for a specified period of time.

Certain records deemed essential to continue business operations after a disaster are considered **vital records**, which receive a special set of rules. Vital records might include emergency operating plans or documents stating legal and financial rights. These records require a periodic review and update in order to verify completeness and accuracy. An effective RM system will facilitate these review cycles and create a log of updates.

Security of data is one of the core benefits of digital records management. In RM, adjustable and granular security controls through metadata become a critical factor for achieving compliance. The records manager should be able to define **security tags** on different sets or series of records, and be able to change authorized user access to these records to allow review by auditors, attorneys, and other regulatory authorities, when appropriate.

Applications intended for RM must handle two types of **disposition**. The system should handle the approval of **interim** transfers, which temporarily removes or copies a set of records from the organizational framework.

RM solutions should also facilitate **final disposition**, which entails either accession to outside archives or destruction according to the records schedule. A digital RM system must allow for the export of an entire set of records, according to metadata categories, for the purposes of transfer and accession. The RM system should have the flexibility to either retain the records, or retain only the metadata without the records.

Same Terms, Different Meanings
Records Management and Information Technology

Professionals in information technology and records management use the same vocabulary to refer to very different things. In discussion, be aware of the overlapping terminology:

	RM:	IT:
File	Physical folder to hold records; a location or categorization of records	Any electronic document
Record	A document that can serve as legal evidence of a transaction or organization activity	A row in a database table
Archiving	Keeping records accessible and readable regardless of technological platform or future obsolescence	Removing old files from directories; compressing data into less memory storage
Retention	Application of rules of scheduled record retirement and disposal	Electronic storage and back up
Preservation	The objective of (and issues involving) keeping records over the long term (10 years+)	Maintaining the integrity of data after a migration from one system to another

RM Terminology

Needs Assessment for Records Management

Contemporary records management programs typically deal in both IT issues as well as a set of legal record-handling guidelines. To know where one stands in regard to records compliance, consult the Federal or local agency for your jurisdictions for details.

To make an in-office assessment of possible solution requirements, an example for Federal compliance can be found at:

www.epa.gov/records/tools/toolkits/evaluat/index.htm

This multiple-section questionnaire is designed to provide a preliminary assessment on the status of existing records management programs, identify areas needing improvement, and show how RM solutions can help in creating a comprehensive system for record control. The assessment covers the following areas:

Program management
- Authorization and organization
- Guidance and training
- Internal evaluations

Program management
- Authorization and organization
- Guidance and training
- Internal evaluations

Records creation
- Adequacy of documentation
- Contractor records

Records maintenance
- General policies
- Paper-based records

Maintenance of special records
- Electronic
- Audio/Visual
- Cartographic/Architectural
- Micrographic
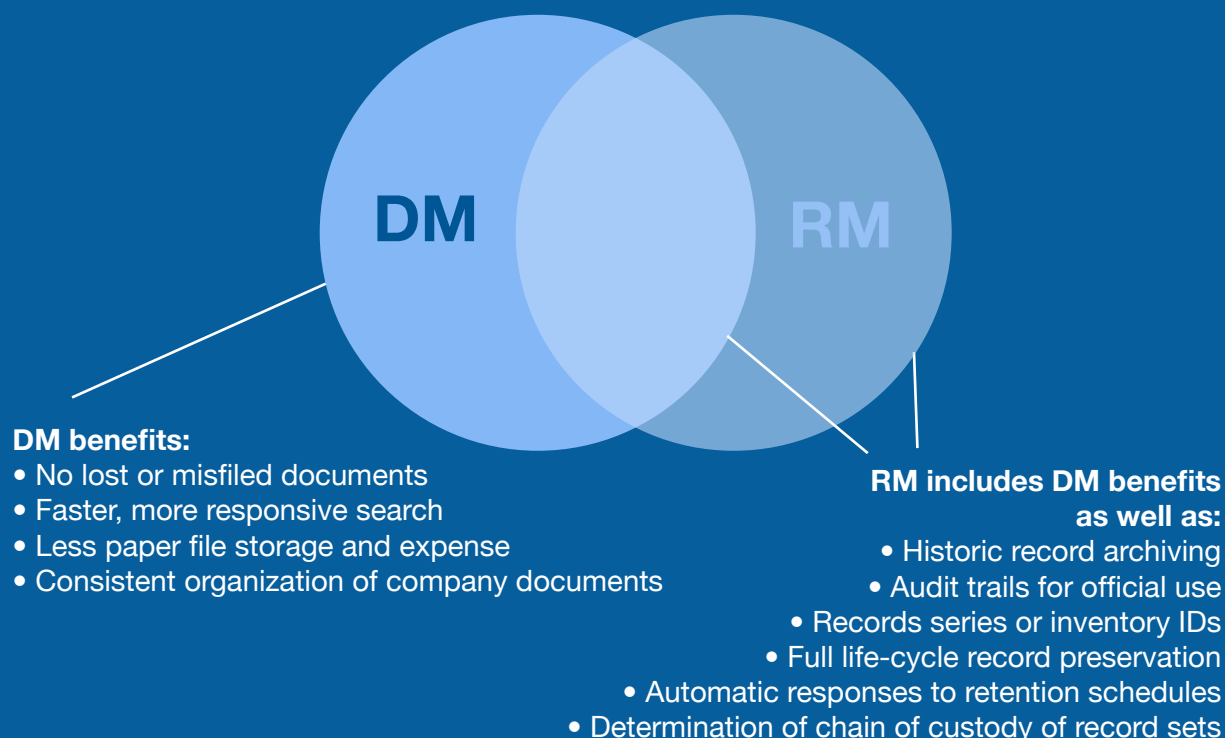
Records Disposition
- Records schedule development
- Records schedule implementation

Vital Records

The checklist, based on policies set by National Archives and Records Administration (NARA) for Federal agencies, is recommended best practices by in most applications of records management.

Records Management
Benefits Beyond Document Management

Companies that employ record management systems gain the benefits of digital document management plus additional capabilities that help them fulfill legal or regulatory compliance requirements.

DM   **RM**

DM benefits:
- No lost or misfiled documents
- Faster, more responsive search
- Less paper file storage and expense
- Consistent organization of company documents

RM includes DM benefits as well as:
- Historic record archiving
- Audit trails for official use
- Records series or inventory IDs
- Full life-cycle record preservation
- Automatic responses to retention schedules
- Determination of chain of custody of record sets

Choosing the Right DMS Approach for Records

Metadata and workflow improvement solutions exist to handle all types of RM requirements. The challenge in RM system selection is to find a platform that is flexible enough to customize to an organization's specific compliance situation, and contains all the capabilities demanded by defined RM parameters.

Adoption of a solution to handle the many aspects of RM follows much the same approach as the document management system selection process outlined earlier in this guide. However, the specific document handling processes dictated by compliance mandates becomes a more important determining criterion. It is critical to conduct a thorough needs assessment, while also applying the governing RM rules to the particulars of the organization, and devoting the resources needed to achieve the desired RM outcomes.

To identify the ideal RM solution for your organization, inquire if the system has the ability to:

- Place controls on items based on the record life cycle

- Respond to custom search queries based on record property fields, retention dates, disposition rules, full text content, and record series ID

- Export query results into abstract report, such as an Excel spreadsheet

- Allow audits of user and record histories

In some cases, software developers employ experienced RM representatives that can work directly with the compliance officer of the governing organization to better understand their specific records management procedures, and determine the nature and extent of configurations necessary to achieve their RM objectives. An experienced and knowledgeable RM representative can also assist in the set-up and deployment phases.

When evaluating RM solutions, organizations should take same preparatory steps outlined in Section C of this guide: needs assessment, process maps, and plan of implementation. Similarly, one should follow an inclusive process that allows others in the company to provide their perspective on the solutions under consideration. As with document management solution adoption, usability remains an important issue in a regulatory environment as well.

Today it is possible for systems to achieve the objectives of a corporate records manager with minimal interference with how employees already work. In this "transparent records management" environment, employees simply "check-in" or "check-out" the files they need, and never have to deal with record matters concerning series codes, retention dates, transfers, and so on. RM solutions that deliver this level of power, flexibility and ease-of-use can improve productivity while meeting critical RM mandates and requirements.