Tuesday, October 21
11:00 am-12:30 pm

506 Electronic Content Management Systems: Unravel the Mysteries Before You Speak to Vendors

David N. Baumann
Chief Executive Officer and General Counsel
TechNexxus, LLC

Jennifer K. Mailander
Associate General Counsel
Corporation Service Company

Penny R. Phillips
Corporate Counsel
Pinnacle Partners in Medicine

Larry L. Sharrar
General Counsel
Lockheed Martin Space Systems Co.

Steve D. Whetstone
Vice President
Stratify, Inc. An Iron Mountain Digital Company

Faculty Biographies

David N. Baumann

David N. Baumann is general counsel and chief executive officer of TechNexxus, LLC in Potomac, Maryland. He also serves as general counsel and chief executive officer of Infinite Multimedia Networkk, LLC and general counsel of Pathagoras Software, LLC. Mr. Baumann specializes in very large and creative multi-national business process, information technology, and telecommunications transactions for a wide range of clients and technology vendors. He has also developed an array of systems with TechNexxus to support the management of contracts and vendor relationships.

Mr. Baumann previously served as vice president and general counsel of Technology Partners, Inc., one of the leading information technology outsourcing-consulting firms. Previously, Mr. Baumann was also a partner/member of DLA Piper, Winston & Strawn, LB3, and Mintz, Levin, resident in the firms' Washington offices, where he led the technology transactions and intellectual property groups. Before private legal practice and business and technology consulting, Mr. Baumann was senior attorney/division counsel for the southeast division of the MCI Communications Corporation. Throughout his career, Mr. Baumann has gained substantial experience designing, developing, and managing successful technology solutions, and profitable companies built on standardized repeatable processes and innovative technologies. He also founded LexiComm Multimedia Works, LLC one of the first Internet development companies in the mid-Atlantic region, whose operations have been merged into the Infinite Multimedia Network.

Mr. Baumann is a widely known and respected speaker on outsourcing strategies and processes.

Mr. Baumann earned his JD from Case Western Law School and his bachelor's degree from the University of Rochester.

Jennifer K. Mailander

Jennifer K. Mailander is an associate general counsel and product manager for Corporation Service Company (CSC) in Wilmington, Delaware. Her responsibilities include providing legal counsel to the organization and managing product development with CSC's Enterprise Risk Management group. Ms. Mailander has extensive experience in corporate and commercial law, compliance, and risk management.

Prior to joining CSC, Ms. Mailander was a legal consultant with LexisNexis and corporate counsel for Siemen's Building Technologies focusing on transactional work. She also worked as a senior regulatory attorney specialist for Fluor Daniel/FERMCO specializing in environmental law.

Ms. Mailander currently does pro bono work with Delaware Volunteer Legal Services providing legal assistance to low-income clients.

Ms. Mailander received a BA from Miami University and is a graduate of the University of Dayton School of Law.

Penny R. Phillips

Penny R. Phillips is corporate counsel for Pinnacle Partners In Medicine, a physician practice group in Dallas, Texas. Her responsibilities include technology law, transactional matters, corporate governance, billing and compliance, human resources, intellectual property, and other day-to-day operational concerns.

Prior to joining Pinnacle, Ms. Phillips was technology lawyer and regional counsel for PBS&J, a Florida-based engineering company. During her tenure, she developed the company's electronic records management system, served as legal advisor to the company's Oracle implementation team, and was the project manager for various software implementations, including a risk management information system and the contract module of Documentum, an enterprise document management system. Ms. Phillips was also actively involved in the company's implementation of Symantec Vault for e-mail management. Ms. Phillips was also general counsel for a seminar company in Florida. She also served as an Air Force JAG (a lawyer on active duty) and as an assistant district attorney in West Texas.

Ms. Phillips serves on the Pro Bono committee for ACC'ss Dallas-Fort Worth chapter. She is active with the Greyhound Adoption League of Texas, helping develop their database.

Ms. Phillips received a BA, summa cum laude, from Lubbock Christian University and is a graduate of the Texas Tech University School of Law.

Larry L. Sharrar

Larry L. Sharrar reports directly to information service & global services (IS & GS) vice president and general counsel in Gaithersburg, Maryland. A member of Lockheed Martin Mission Services (LMMS) president's executive staff, Mr. Sharrar serves as the LMMS general counsel. In this capacity he manages and directs the legal health of $1.8 billion per annum scientific and technical company. He personally manages all litigation on behalf of LMMS, provides labor and employment advice to the LMMS human resources staff, provides direct support and assistance to business operations and business development including domestic and foreign joint ventures. He provides legal advice and oversight on international business efforts in both Europe and Asia.

Previously, Mr. Sharrar served in the Air Force, primarily in the Judge Advocate General's Corp, and retired from the Air Force as a Lieutenant Colonel. After retiring, Mr. Sharrar served as vice president and general counsel of Barba-Arkhon International,

Inc., and then he joined Lockheed Martin, where he served in a number of legal positions, before assuming his current position.

He regularly participates in ACC sponsored pro-bono activities in the Denver and Colorado Springs area.

Mr. Sharrar received a BS from United States Air Force Academy, an MS from the University of Tennessee and is a graduate of the University of Washington School of Law.

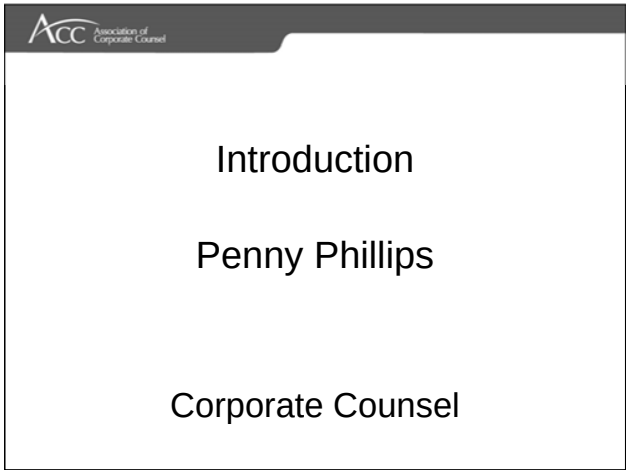
Steve D. Whetstone

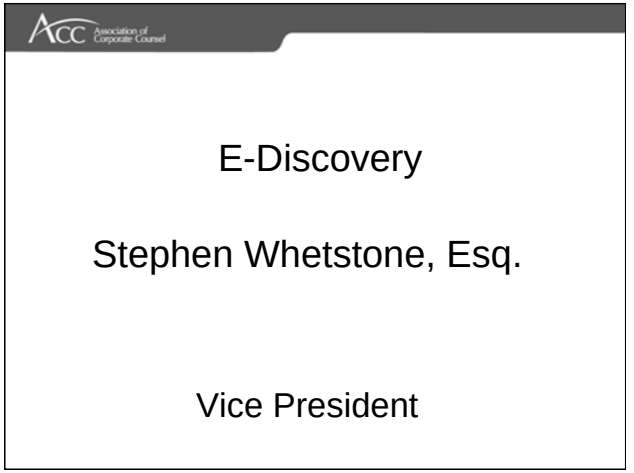
Stephen D. Whetstone, is Stratify's vice president, client development and strategy. Among other responsibilities, Mr. Whetstone is charged with keeping abreast of legal developments affecting electronic discovery, working with law firms and general counsel to craft document retention and discovery best practices, and honing Stratify's strategic position, services and product offerings in the legal market.

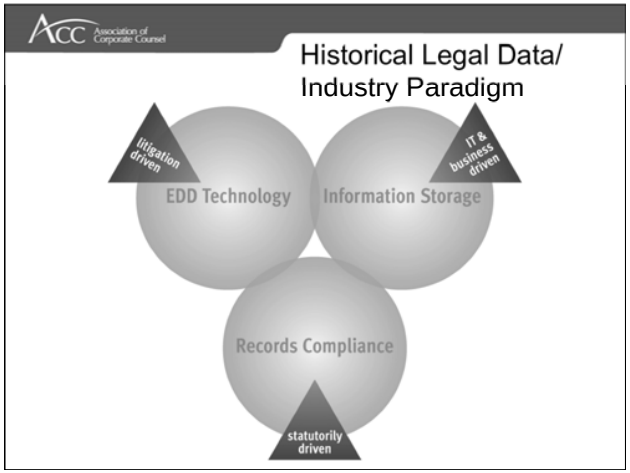
Prior to joining Stratify, Mr. Whetstone was a litigation partner at Testa Hurwitz & Thibeault, LLP, one of Boston's largest law firms, where he represented clients in securities class actions, government and internal investigations, patent and intellectual property matters, and other complex commercial litigation and at trial. Before joining Testa, Mr. Whetstone was a litigator at Skadden Arps. While practicing, Mr. Whetstone successfully handled many litigations and investigations that turned on analyzing large volumes of electronic data and evidence under tight time constraints. Prior to law school, Mr. Whetstone spent several years working in the political arena and with the media, including as chief of staff for Massachusetts State Senator (now Congressman) John W. Olver.

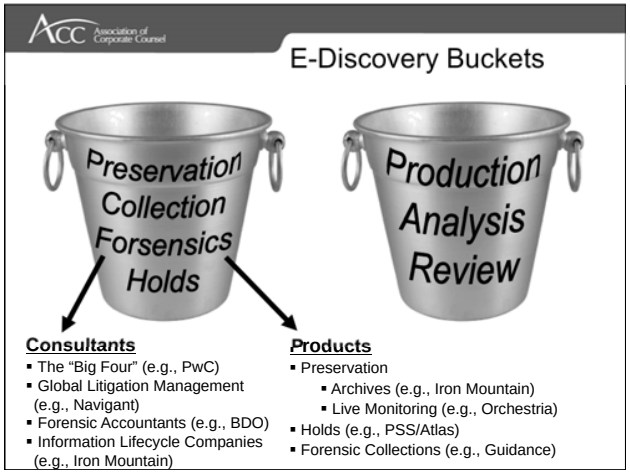
Mr. Whetstone has written many articles and papers on electronic data and discovery issues, which have appeared in the *National Law Journal*, *Legal Times*, *IP Litigator*, *Privacy Law Journal*, *Digital Discovery & E-Evidence*, *Industry Week*, *Mealey's*, and other prominent national publications. He is also a frequent speaker at national and international conferences and CLE programs on electronic discovery legal developments and best practices.

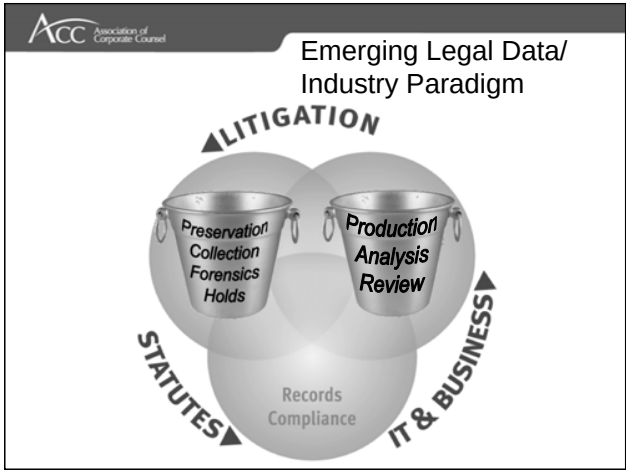
Mr. Whetstone received his BA from Bates College and JD from Northeastern University School of Law.

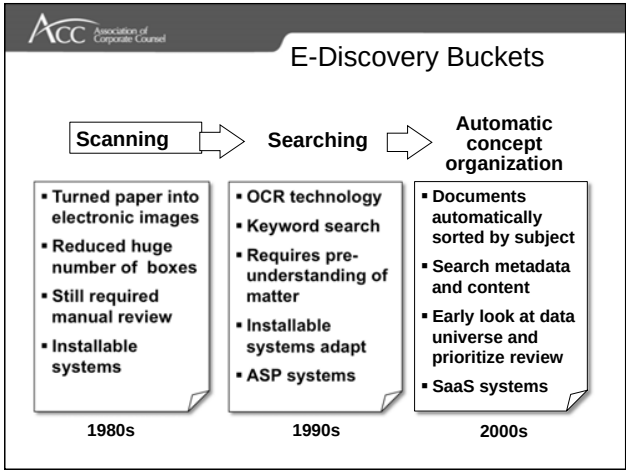





Historical Legal Data/
Industry Paradigm
litigation driven
IT & business driven
EDD Technology
Information Storage
Records Compliance
statutorily driven


E-Discovery Buckets
Preservation
Collection
Forsensics
Holds
Production
Analysis
Review
Consultants
▪ The "Big Four" (e.g., PwC)
▪ Global Litigation Management (e.g., Navigant)
▪ Forensic Accountants (e.g., BDO)
▪ Information Lifecycle Companies (e.g., Iron Mountain)
Products
▪ Preservation
▪ Archives (e.g., Iron Mountain)
▪ Live Monitoring (e.g., Orchestria)
▪ Holds (e.g., PSS/Atlas)
▪ Forensic Collections (e.g., Guidance)


Emerging Legal Data/
Industry Paradigm
LITIGATION
Preservation
Collection
Forensics
Holds
Production
Analysis
Review
STATUTES
Records
Compliance
IT & BUSINESS

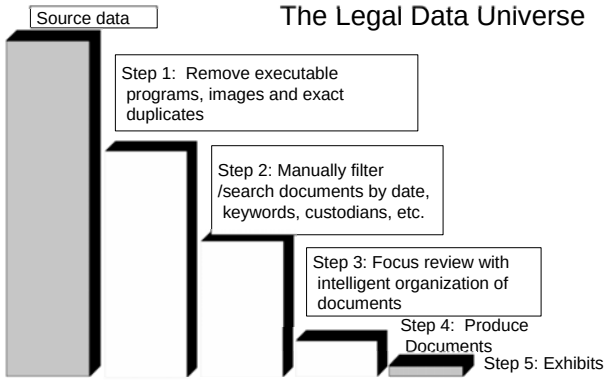

E-Discovery Buckets
Scanning
Searching
Automatic concept organization
▪ Turned paper into electronic images
▪ Reduced huge number of boxes
▪ Still required manual review
▪ Installable systems
▪ OCR technology
▪ Keyword search
▪ Requires pre-understanding of matter
▪ Installable systems adapt
▪ ASP systems
▪ Documents automatically sorted by subject
▪ Search metadata and content
▪ Early look at data universe and prioritize review
▪ SaaS systems
1980s
1990s
2000s

Trends in Electronic Discovery

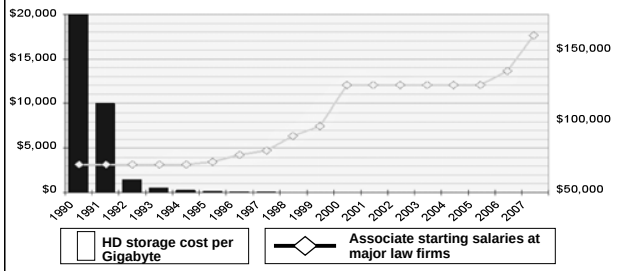
Scanning ⇨ **Searching** ⇨ **Automatic concept organization**

1980s	1990s	2000s
▪ Turned paper into electronic images ▪ Reduced huge number of boxes ▪ Still required manual review ▪ Installable systems	▪ OCR technology ▪ Keyword search ▪ Requires pre-understanding of matter ▪ Installable systems adapt ▪ ASP systems	▪ Documents automatically sorted by subject ▪ Search metadata and content ▪ Early look at data universe and prioritize review ▪ SaaS systems

The Challenge: Reduce The Legal Data Universe



The Challenge - Cheap Storage & Costly Review



Q. Who Pays for This?

A. The clients. Since 1997, starting associate hourly rates at many major law firms have doubled, to offset the rapid rise in salaries

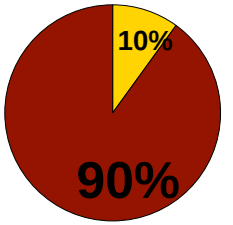
The Truth About Search…

- Need to know what you are searching for – before you know all facts in the matter
- Need to include ***all*** relevant terms – and all synonyms, abbreviations, plural forms, acronyms & ***mispellings***
- Need search expertise -- speed, accuracy and technique – and time to train on the new tool
- Search cannot make sense of large, complex document sets or reveal hidden patterns

. . . It's Hard to Find What You Can't See

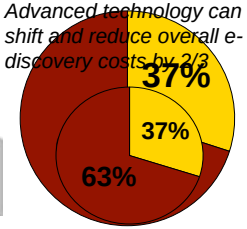
Technology Reduces Legal Review Costs

Worst Case Scenario



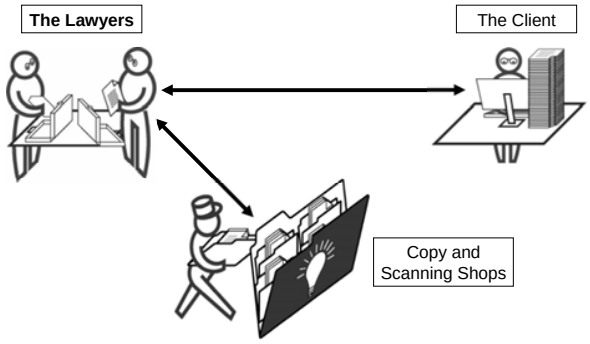
Best Case Scenario

Advanced technology can shift and reduce overall e-discovery costs by 2/3



Source: 2005 KPMG study

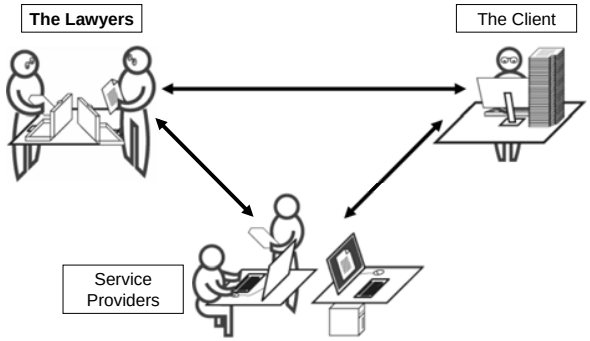
Traditional eDiscovery Matter Management



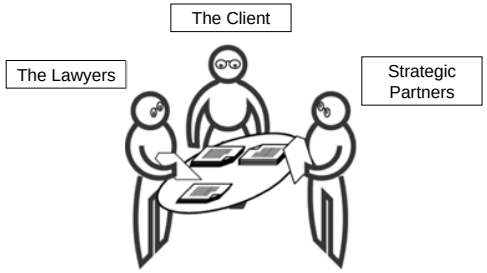
How to Choose The Right eDiscovery Solution

- Purpose – Bucket 1 or 2? Which particular component?
- Ease of Use – Is the tool intuitive?
- Reliability – Is the tool "buggy?" Are the vendor services dependable and timely?
- Functionality – Does the tool have the features you want?
- Analysis – Does the tool help improve the quality of your review?
- Speed – Does the tool help improve the quantity of your review?
- Scalability – Can the tool handle large data volumes, particularly if your matter grows beyond original expectations?
- Foreign languages – Does the tool recognize? Can it fully support?
- Duplicates – Does it know when a "duplicate" is not a duplicate?
- Cost – Does the tool add to/subtract from your bottom line?

Emerging eDiscovery Matter Management



Ideal eDiscovery Matter Management



What is a Matter?

A matter can be any topic, project, or work that you are performing, about which you need to track and store documents, data, and/or information and collaborate with others.

Matters can cover any area of the law:

- Litigation
- Contracts
- Garnishments
- Patents
- Trademarks
- Copyrights
- Securities
- Wills, Trusts & Estates
- Compliance
- Any Project

Matter Management Considerations

Jennifer K. Mailander

AGC & Product Manager

Matter Management Systems

- A system to manage matters may be referred to as case management, work management, project management, or *matter management*.
- A matter management system is an information resource that enables an individual or group to fully manage a case, matter, or project from beginning to end, and beyond.
- Matter management can entail any form of information management and storage that a person uses to keep track of data and documents as well as track due dates and deliverables.
- A matter management system may include a tool for managing e-billing, e-discovery, documents, etc.

Things to Consider

- Understand "What do I need this tool to do?"
- Understand who will be using your MM system
- Generally understand what is used now; likes and dislikes
  - Form a team with Practice Area representatives
- Software v. ASP model
- Location of data
- Scalability
- Include/exclude historical matter data
- XML feed into/out from other systems
- Price
- Using a third party consultant

By :
Laura Williams, Senior Attorney | Safeco Insurance
David Baumann, General Counsel :
- TechNexxus, LLC
- Infinite Multimedia Network, LLC
- Pathagoras Software, LLC

Selecting the Right Tool for the Job

DOCUMENT MANAGEMENT

Important Functionality to Consider

- Ease of use
- Strong reporting capabilities
- Document retrieval
- Searching capabilities
- Collaboration
- Matter notes
- Calendar
- Email integration
- Implementation support
- Training/Customer service

Classic Document Management Issues

- Location
- Filing
- Retrieval
- Security
- Disaster Recovery
- Retention Period
- Archiving
- Distribution
- Workflow
- Creation
- Authentication

Source Wikipedia

Classic Document Management Components

- Metadata
- Integration
- Capture
- Indexing
- Storage
- Retrieval
- Distribution
- Security
- Workflow
- Collaboration
- Versioning

Source Wikipedia

Key Issues

- What Tools Do You "Really" Need?
  - Categories of Tools and Types of Content
  - Requirements Definition
- What Roles and Access Do You Need to Support?
  - Administrator
  - Template Author
  - Document Author
  - Assistants
  - Users
- FRCP
  - Sedona Conference / Principles
  - Chain of Custody and Authenticity
  - Litigation Holds
  - Spoliation - When can you delete?
- What Can You Afford?
  - Total Cost of Ownership and ROI
- Integration
  - Enterprise
  - Webservices and RSS Syndication
  - WebDav and Metapost
- Standards and Best Practices
  - XML
  - Information Lifecycle Management
  - ITIL
  - Audit and Controls
- Storage Management Considerations
  - Virtualization
    - File
    - Disk
    - Tape
    - System
  - De-duplication
  - Compression

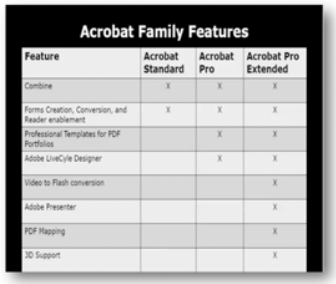
Localization Issues

- What is localization?
- What's the best way to accomplish support for multiple:
  - Languages
  - Content
  - Business requirements
  - Timezones
  - Processes
- What's the best way to accomplish localization?
  - Multiple Systems
  - System localization (e.g., DNN)
  - Localization as a services (e.g., LanguageLine)
- Localization vs Standardization

Strategies and Tips

- Sharepoint vs WSS vs DNN
- Open Source options
- Desktop vs Network | DIY vs SAAS
- Preservation of formatting / file format vs style sheets and templates
- Cloud compute, storage and search
  - Where is your data?
  - How safe is it?
  - When / how can you get it back
- Outsourcing as a service (e.g., Mechanical Turk)
- Industry Action (e.g., XML flavors championed by trade groups)
- Database integration
  - Consistency and standardization -- Less work means more value
  - Techniques to assure scalability and portability of data

Secret Sauce



Acrobat Family Features

Feature	Acrobat Standard	Acrobat Pro	Acrobat Pro Extended
Combine	X	X	X
Forms Creation, Conversion, and Reader enablement	X	X	X
Professional Templates for PDF Portfolios		X	X
Adobe LiveCyle Designer		X	X
Video to Flash conversion			X
Adobe Presenter			X
PDF Mapping			X
3D Support			X

The LM Problem:

- 125 Attorneys – all with their own opinion on the value Electronic Content Management.
- Different Headquarters and Field Office perspective on needs.
- Multiple Cost Centers – Multiple Disclosure Statements.
- Different Sensitivity to Costs.
- Previous investments in e-systems by business areas appear to limit flexibility.

E-Billing, Matter Management: Viewpoint from a Large Corporation

Larry L. Sharrar

LMMS General Counsel

The LM Solution:

- Creation of a Legal Technical Working Group drawn from across the Corporation.
- Hired a Legal Staff Technologist.
- Competitive Procurement of e-solution software services for use across Corporation.

The LM Process:

- Identification of Needs – Real v. Perceived.
- Program Procurement approach to obtain best software solutions at competitive price.
- Uniform application across Corporation.
- Training and Implementation.

The LM Results:

- e-Billing System
  - Identified Needs.
  - Interviewed/Screened Suppliers.
  - Procured system.
  - Status: In place and functioning
- Matter Management System
  - Identified Needs.
  - Interviewed/Screened Suppliers.
  - Procured system
  - Status: In place, but not functioning.

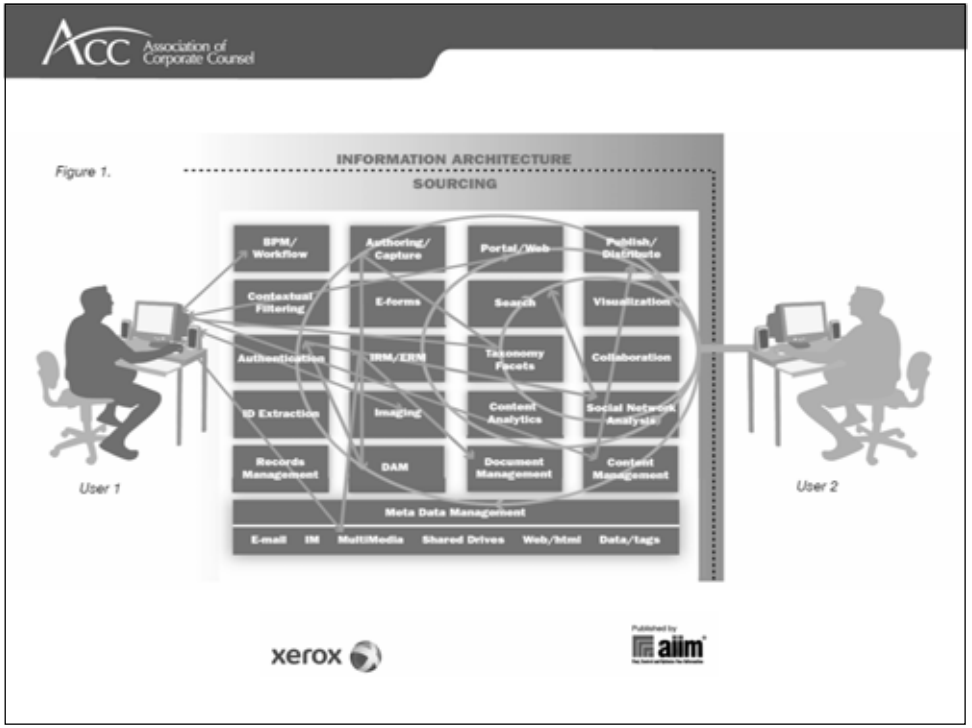

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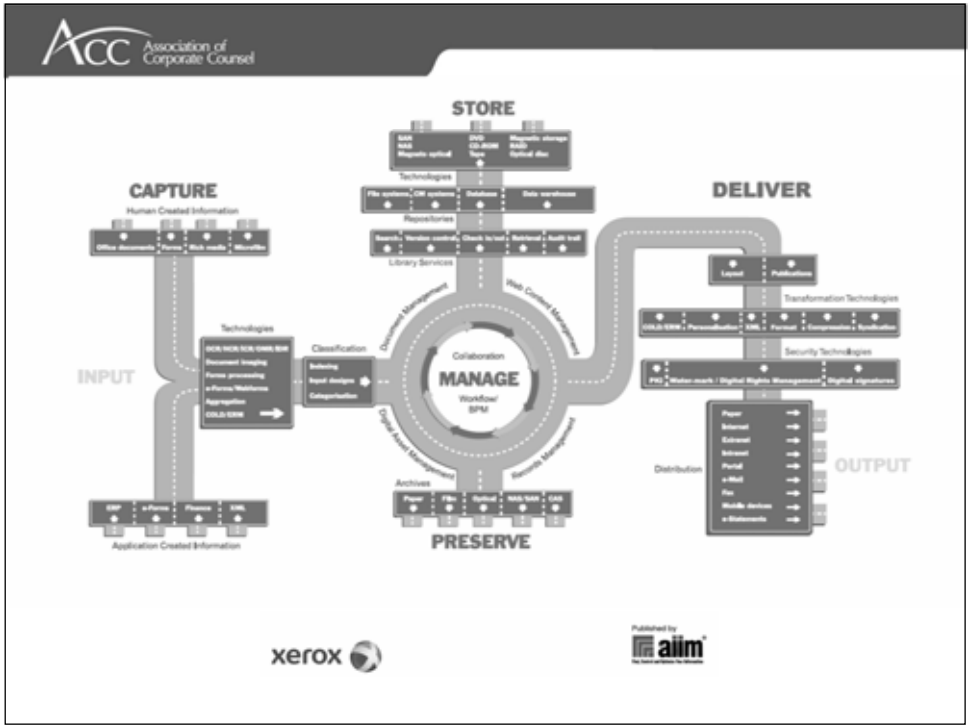
Figure 1.
INFORMATION ARCHITECTURE
SOURCING
BPM/ Workflow
Authoring/ Capture
Portal/Web
Publish/ Distribute
Contextual Filtering
E-forms
Search
Visualization
Authentication
IRM/ERM
Taxonomy Facets
Collaboration
ID Extraction
Imaging
Content Analytics
Social Network Analysis
Records Management
DAM
Document Management
Content Management
Meta Data Management
E-mail
IM
MultiMedia
Shared Drives
Web/html
Data/tags
User 1
User 2
xerox
Published by aiim


ACC Association of Corporate Counsel
STORE
Technologies
Repositories
Library Services
CAPTURE
Human Created Information
Technologies
Classification
INPUT
Application Created Information
Collaboration
MANAGE
Workflow/ BPM
Archives
PRESERVE
DELIVER
Transformation Technologies
Security Technologies
Distribution
OUTPUT
xerox
Published by aiim

ECM Checklist – Global Functions

- Maturity of Product
- Architectural/OOP Issues
- System Scalability
- Server/Client OS Support
- Database Support
- Data Interface
- Reporting Capabilities
- Query Functionality
- User-Defined Parameters
- Documentation
- Security
- Application Interfaces
- Programming Toolkit
- 3rd Party ERP/EAI Interface
- Mobile Technology support

ECM Checklist – Content Capture

- Document Entry methods supported
  - Image File Formats Supported
  - Export / Import Capabilities
- Scanner Interface (e.g. TWAIN)
  - Scanning Capabilities
    - Image support criteria
    - Form processing topics
- Optical Character Recognition (OCR) functions
  - Zone Capture
  - Trigger Indexing topics
  - Full Text search topics
  - Intelligent Character Recognition (ICR)
  - Handwriting Recognition (HWR) topics
- Content Indexing Methods Supported
- Database Interface topics
- Automated Indexing capabilities
- Document Activity Reporting
- Document Purging functions

ECM Checklist – Content Capabilities

- Third-Party Authoring Tool Support
- Multiple Language Support
- Import/Export
  - .TXT, .CSV, .XML, .DOC(X), .DOT(X), .XLS(X),.PPT(X),.MDB
- Version Control
- Lifecycle Management Functions
  - User-Defined Capabilities
  - Review Status
  - Approval
  - Publication
  - Archival
  - Retired
- Library Services
  - Check-In/Check-Out
  - Distribution Channel Format Support
  - Content Channel Document Conversion

ECM Checklist – Digital Asset MGMT

- Asset Capture
  - Batch operations
  - Asset identification
  - Asset Manipulation
    - Desktop Integration
    - Streaming Media functions
    - Media Transformation functions
- Advanced Media Support
  - Encryption
  - Obfuscation
  - Optimization
  - Meta tagging

ECM Checklist - Repository

- Structured Content types supported
  - Databases
  - Accounting Transactions
  - Others
- Document Content types supported
- Presentation Content types supported
  - Permanent Record Conversion
    - Standard PDF Output Support
    - Standard TIFF Output Support
- Records Inventory Management
  - Real-Time Inventory Support
  - Inventory Record Identification functions
    - Label Formats
    - Bar-Code / RFID Support
    - Record Formats Supported
- Import/Export Capabilities
- User-Defined Status Field Capabilities
- Inventory Reports
  - Pre-Defined
  - User-Defined
- Record Center - Space Management
  - Multiple Storage Locations
  - User-Defined Space Configuration
  - Shelf-space Verification topics

ECM Checklist – Item Retrieval

- Search Functions provided
  - Full Text Search Capabilities
  - Fuzzy Search topics
  - User-defined Search indexes
  - Boolean Search topics
- Electronic Document Support
- Form Overlay
- Third-Party System interface
- Query capabilities
  - SQL
  - XQUERY / XPATH
- Document Viewing functions
- Graphic files supported
- Web interface

ECM Checklist – Document Management

- Document Management Functions
  - Supported Standards
  - Document Capture
  - Automated Document Capture
  - OCR/HWR/IWR Capabilities
- Data Processing
- Enterprise Integration
- Database Integration
- Enterprise Systems Supported
- Monitoring and Reporting
- Process Status Reporting
- Archiving
- Workflow Security
- Workflow System Architecture
- 3rd Party System Interfaces
  - Messaging
    - IBM MQ Series
    - Microsoft
    - Generic

ECM Checklist - ILM

- ILM – means Information Lifecycle Management
- Retention / Disposition Schedule Maintenance functions
  - User-Defined
  - Planned vs In-use
  - Disposition Period capabilities
  - Global Retention Schedule Update
- Litigation-Hold Capabilities
- Content History / Audit Trail

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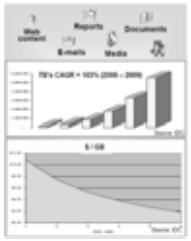
Storage Management Considerations

- Variety of Information
  - Information Technology holds the promise of bringing a variety of new types of information to the people who need it
- Volume of Data
  - Data is growing exponentially
- Velocity of Change
  - IT Organizations are under tremendous pressure to deliver the right IT services.
  - 85% of problems are caused by IT staff changing something.
  - 80% of problems not detected by IT staff until reported by end user



- Managing Storage Growth - number one pain point

- *Sustainable digital storage is designing, manufacturing, deploying, managing, and recycling digital information storage in a manner that meets the information needs of the present without compromising the ability of future generations to meet their own information needs.**

*Adapted from World Commission on Environment and Development, commonly known as the Bruntland Commission, 1987.

ACC Association of Corporate Counsel

Storage and Document Management

Archive Potential Impact by Application

Education SNIA

Meet with Line of Business to Determine Data Access Requirements and Data Retention Policies

Application	Retention Policy (months)	Data Volume Before Archiving (GB)	Data Volume Eligible for Archive (GB)	Data Volume After Archiving (GB)
General Ledger	24	54	15.84	38.16
Accounts Payables	12	47.93	13.14	34.79
Workflow	1	28.42	4.38	24.04
Content Management	12	1.77	0.77	1
Accounts Receivables	12	32.54	11.9	20.64
Inventory	12	0.11	0	0.11
Human Resources	12	25	10	15
Fixed Assets	12	4.12	0.4	3.72
Project Accounting	12	0.1	0	0.1
Other ERP Apps	95	6.07	0	6.07
Custom Tables	95	0.97	0	0.97
ERP Non-Archive Tables	95	12.75	0	12.75
System Tables	95	22	0	22
	Totals --->	235.78	56.43	179.35

Before	After	=	Savings
236 GB	179 GB		56 GB

Storage Considerations for Database Archiving

ECM Checklist – Web Interface

- Web Content Manager Integration
- Web Content Creation Functions
  - 3rd Party Application Integration
  - Image Import capabilities
  - Web Content Editing functions (HTML, XHTML, XML)
  - Distributed Content Creation
- Content Contribution functions
- Web Content Publishing
  - Multi-location Publishing
  - Automated Scheduled Publishing
- Web Content Approval Workflow
  - Internal Hyperlink Integrity
  - Content Version Control functions
  - User-Defined Publishing Rules
  - User-Defined Content Review/Expiry
- Publication Channels Support
- Web Content Aggregation and Syndication (e.g., RSS)
  - Syndication functions
  - External Information Source Coordination
- Content Migration
- Existing Web Site Structure
- Web Content Import/Export functions
- Metadata
  - Automated Generation Functions
  - Management Functions
- Automated keyword generation
- Metadata generation topics
- Search Capabilities
- Content indexing techniques
- Navigation Structure creation & maintenance
- Site map creation topics
- Section 508 Accessibility

ECM Checklist – Workflow (slide1)

- BPM Standards Supported
- Web-enabled Services Support
  - XML Support
  - XZLT Issues
  - WSDL Support
  - JSP
  - HTML
  - DTD support
- Std. Business Process Templates
- Software User Interface
- Customizable Interfaces
- Field-level Issues
- Validation Capabilities
- User-Profile Driven UI
- Workload-leveling Routing
- Control Panel Functions
- Workflow Process Design Tools
- Visual Workflow Maintenance
- Drag & Drop functions
  - Check-In/Check-Out
  - Automatic Activity Properties
  - Manual Activity Properties
- Structured Routing
- Unstructured Routing
  - Workflow Templates
  - Rules Editor
  - Scripting Support
  - Sub-Flow Support
  - Electronic Forms Support

ECM Checklist – Workflow (Continued)

- Forms Design Functions
- Accessibility/Interface
- Compatibility Issues
  - Excel
  - Adobe
  - Word
  - Web
  - Electronic Signatures
- User Interface Issues
- Workflow Routing Rules
- Error & Omission Handling
- Timeout Handling
- 3rd Party Timeouts
- Status Code Usage
- 3rd Party Status Code Issues
- Event Response Functions
- Escalations
- Application Launch
- Database Event
- File transfer
- HTTP Post
- Manual Activity Interface
- Forms Display
- By Job Function
- By User Group
- Testing and Validation
- Process Monitoring Issues

Illustrative Document management systems

- Imagelinks (Optimiza)
- Alfresco (software)
- ColumbiaSoft
- Computhink's ViewWise
- Documentum
- DocPoint
- Filehold
- FileNet
- Hummingbird DM
- Hyland Software's OnBase
- ImageNow by Perceptive Software
- Interwoven's Worksite
- Infonic Document Management (UK)
- Invu Scan, Document, Records, Workflow Management (UK)
- ISIS Papyrus
- Ixio QShift
- KnowledgeTree
- Laserfiche
- Livelink
- Main//Pyrus DMS
- Nuxeo
- OpenKM
- O³Spaces
- Objective
- Oracle's Stellent
- Questys Solutions
- Redmap
- Report2Web
- SharePoint
- Saperion
- SAP KM&C SAP Netweaver
- TRIM Context
- Xerox Docushare

Dealing with Electronic Discovery Challenges in IP Litigation: Three Promethean Principles

Stephen D. Whetstone and Michael S. Simon

Electronic Data and Discovery Is Here to Stay

Electronic data volumes seem to grow faster than the ability to measure them. According to a recent study, 183 billion emails are sent worldwide each day.[1] At least 93 percent of all information is first generated in digital (or electronic) form.[2] Most of that information is never printed to hard copy.[3]

The capacity to store all this data is virtually limitless, further facilitating the data propagation. Whereas it takes only a few thousand pages of paper to fill a filing cabinet drawer, one hundred thousand pages of electronic files still will not fill a portable "thumb" drive, which can hang from a key chain. A single laptop, desktop or back-up computer tape can contain millions of pages.[4] A lawyer at one Fortune 100 company estimated that his corporation stores 800 terabytes of information on 121,000 recycled back-up tapes. The cost just to replace the tapes would be nearly $2 million.[5] This vast accumulation of data might someday prove beneficial in the unlikely event of a system-wide meltdown, but it also can pose a financial and logistical nightmare for a company involved in intellectual property litigation.

Until just a few years ago, Electronic Data and Discovery (EDD) seemed to crop up in only the largest corporate litigations or in one-off judicial decisions. The vast majority of litigators could manage their cases blissfully ignorant of the difference between "email" and "vmail," or whether a gigabyte was an animal, vegetable or mineral. But a series of high profile scandals, government investigations, and EDD decisions, and recent changes to the Federal Rules of Civil Procedure (FRCP) have changed all that forever. The days of litigating under the doctrine of "mutually assured destruction"—neither side fires off EDD requests for fear it will have to respond in kind—are over. Government attorneys, the plaintiffs' bar, and sophisticated IP counsel now routinely deploy requests for EDD as a litigation weapon, sometimes with devastating consequences. Litigation today is now often fought on two fronts: the case on the merits and the EDD game of "gotcha," in which one side probes to see if its opponent has preserved and produced all responsive electronic data. As dozens of recent decisions show, the bounty from a successful EDD foray can be tantamount to a verdict on the merits.

IP litigation is particularly fertile ground for EDD challenges. Unlike securities litigation, where a large percentage of cases get dismissed or settle prior to discovery, most patent suits resolve after discovery begins.[6] Also, unlike garden-variety contract disputes, patent litigation tends to be high stakes and highly fact-intensive. Even though patent claims are to be construed as a matter of law, questions of infringement, invalidity and unenforceability often turn on a rigorous examination of the parties' voluminous electronic records. In addition, patent, copyright and trademark litigation often is an extension of coordinated corporate and legal strategy, such as a prosecution, licensing or enforcement campaign. Thus, it is particularly ripe for scrutiny regarding whether (and when) the ordinary course of business escalated into a pre-litigation mode, thereby triggering a common law duty to preserve discoverable information. Finally, it stands to reason that IP litigators are more likely to embrace and leverage new litigation support technologies than their non-IP peers, who may resist or run from it altogether.

The old discovery rules were not designed to cope with EDD. The only reference to EDD in the FRCP before the EDD amendments is the phrase "data compilations," which was added in 1970, long before any litigator had ever seen a personal computer, email, or digital back-up tape. Substantial changes were made to the FRCP, several weeks ago, which now detail how litigants are expected to handle EDD. Among other new rules:

- Rule 16(b) and Rule 26(f). Requires counsel to discuss anticipated EDD issues with their clients and one another prior to the start of discovery and in the proposed scheduling order;
- Rule 26(b)(2). Creates a new two-tier document production scheme, pursuant to which "reasonably accessible" data must be produced first and "inaccessible data" may be sought only if the accessible data production is insufficient. The producing party must pay for the production of accessible data and the court may consider cost-shifting for inaccessible data only;
- Rule 26(b)(5). Creates a procedural framework for the "claw back" (return) of inadvertently produced privileged documents;
- Rule 34. Establishes that the requesting party may specify the form of production for electronically-stored information. The "ordinary" (a/k/a "native") or "reasonably useable" file format is the default production standard if none is specified; and
- Rule 37(f). Creates a "Safe Harbor" from discovery sanctions for the inadvertent loss of electronic data based on the "routine, good faith operation" of an IT system.

Judges had already begun to apply the EDD rules before the implementation date. For example, in *In re Priceline.com, Inc. Sec. Lit.*,[7] the court stated that it would apply the cost-shifting factors set forth in the advisory committee notes to Rule 26(b)(2) to decide whether the plaintiffs must pay for defendant's production of back-up tapes. Likewise, in *Williams v. Sprint/United Management Co.*,[8] the court considered the definition of "metadata" set forth in Rules 26(f) and 34(b) and the advisory committee notes, and ordered defendant's production of locked-down cell formulas and other metadata embedded in Excel spreadsheets.

Thus, to avoid making critical, irreversible errors, IP litigators and their clients must quickly develop an understanding of EDD best practices, starting with three bedrock principles.

First, they should cast a wide net and preserve all potentially responsive client documents to avoid the threat of sanctions for deleting, or "spoliating," relevant information. Even though broad preservation is advised, litigants may still produce documents more narrowly.

Second, IP litigators and their clients should consider cooperating with an adversary on EDD issues, even if they plan to resist discovery on the merits. Practical and technical realities make it difficult for one litigant to pursue EDD in a "scorched-earth" manner, without risking getting burned itself.

Third, IP litigators and their clients should use robust litigation support technologies to solve today's technology challenges. Just as advances in computer technology are responsible for the propagation of electronic data, recent technical innovations offer the best hope for managing it.

Principle 1: Preserve Broad, Produce Narrow

The single greatest EDD blunder that any litigator or client can make is failing to preserve relevant information after the duty to preserve arises. This duty can trigger long before the filing of formal litigation; mere "anticipation of litigation" is enough.[9] Even a company that preserves all relevant data immediately after suit is filed may find that it was still not soon enough.

Determining when the duty arises can be daunting. IP litigation often is preceded by routine business dealings, which can gradually heat up into a simmering dispute, and then ultimately boil over into legal threats and action. The general reasonable anticipation of litigation standard, however, provides no meaningful guidance; determining that critical moment in time when the duty arises will turn on each matter's unique set of facts and circumstances. What is clear, however, is that once the duty does arise, parties and their counsel must immediately guard against the routine alteration or destruction of documents that are relevant, or potentially relevant, to the claims or defenses of the dispute, or else risk imposition of sanctions.[10]

In the IP arena, this timing question can be particularly nuanced and vexing. For example, can an IP licensing campaign trigger the duty to preserve? If so, at what point in the process: Upon issuance of the initial notice letter? Upon receipt of a letter rejecting the offer? Following failed negotiations? At first blush, the answer to each of these questions might appear to be a resounding "no," but IP counsel must remember that the reasonable anticipation of litigation duty to preserve standard is identical to the long-standing attorney work product standard.[11] Thus, if a client or its IP counsel deems internal communications or strategy sessions about the campaign as "work product," arguably the duty to preserve can trigger long before any litigation is filed. A lax client or its counsel might unwittingly facilitate such a finding by labeling internal emails or company memos as work product or, worse, by later identifying unlabeled documents on a privilege log as withheld on that basis. An astute opponent will argue that such treatment reveals that litigation was contemplated or anticipated all along, thus triggering the duty to preserve.

This interplay between the duty to preserve in patent licensing campaigns and litigation is described in great detail in three cases involving Rambus's enforcement of four memory chip patents. In the first case, *Rambus, Inc. v. Infineon Technologies,*[12] Rambus was found to have engaged in litigation misconduct and ordered to pay Infineon's attorney fees, in part, because of a document destruction plan that was instituted at a time when "Rambus contemplated that it might be bringing patent infringement suits." In reaching its decision, the court relied on testimony that the plan was designed to cover documents that might be discoverable in future litigation and that some destruction took place just before Rambus filed suit against Infineon.

Five years later, Rambus narrowly avoided discovery sanctions again in *Hynix Semiconductor v. Rambus* for destroying documents.[13] The court found that Rambus had spent two years carefully formulating a licensing and litigation strategy based on its computer memory chip patent portfolio. As part of that strategy, certain Rambus representatives, including in-house IP and outside litigation counsel, crafted a plan to preserve documents for anticipated litigation. While this plan was being developed, the company continued its regular document destruction policies, including two company-wide "Shred Days," on which employees destroyed documents in a "party-like atmosphere."[14] Hynix claimed that Rambus's document destruction took place after it clearly contemplated litigation. The court, however, found Rambus did not reasonably anticipate litigation until after Rambus had conducted a "beauty contest" for litigation counsel, which took place after the bulk of the document destruction. Hynix also argued that documents Rambus had labeled "work product" independently triggered the duty to preserve, but the court found that California law treated the work product label more leniently than the federal standard; "California law differs from federal law in that it protects a lawyer's work product prepared 'in a nonlitigation capacity.'"[15] Thus, Rambus managed to escape sanctions in the *Hynix* matter, despite its intentional destruction of data.

Less than six months later, however, in *Samsung Electronics v. Rambus*,[16] the court examined the factual records in *Infineon* and *Hynix* and found that the records "clearly and convincingly" showed that Rambus had spoliated evidence. In reaching its decision, the court first recognized that the "reasonable anticipation of litigation" standard bears on both work product and duty to preserve analyses, and

> …provides a helpful guide when assessing intentional spoliation: at the very least, a party has anticipated litigation when it destroys relevant evidence because of the prospect of litigation on an actual or potential claim.[17]

After scrutinizing the underlying factual record, the court found that the duty to preserve arose at the start of Rambus' licensing campaign, and not when Rambus subsequently hired litigation counsel, as the *Hynix* court had found. As support for its finding, the *Samsung* court cited several instances early in the campaign where Rambus and its counsel had intentionally destroyed potentially discoverable documents, such as email, instead of preserving it for anticipated litigation. The *Samsung* court also found that Rambus's document destruction policy was not "content neutral," but rather was "intentionally designed…to get rid of damaging documents," in direct contrast to the *Hynix* court's findings.[18] The *Samsung* court also gave little weight to the fact that Rambus's pre-litigation planning identified a few non-litigation contingencies and was made without a line-itemed litigation budget.

The *Samsung* court also found that the testimony of Rambus's IP counsel, litigation counsel, and CEO about the company's document retention program was "not credible."[19] The *Samsung* court further found that the *Hynix* court erred in applying California's more lenient work product standard because it is "irrelevant" to a federal patent law question, which turns on the Federal Rules of Evidence.[20]

In view of the intentional spoliation, the court found that the case was exceptional under 35 U.S.C. § 285, yet Rambus still managed to escape sanctions, this time on procedural grounds. At the time of the Samsung court's decision, Rambus already had dismissed its declaratory judgment patent infringement counterclaims and signed covenants not to sue. Thus, the court found no causal nexus between Rambus' spoliation of relevant evidence and Samsung's costs incurred in continuing to pursue the declaratory judgment action.[21]

The three *Rambus* decisions are a must-read for any IP attorney who represents clients who are trying to strike a balance between coordinating business and legal strategy without running afoul of the duty to preserve. The decisions serve as stark reminders of the kinds of challenges and risks associated with trying to maximize a company's pre-litigation position by minimizing the volume of harmful documents and data it holds.

As challenging as it can be to pinpoint in real time just when the duty to preserve triggers, identifying all data subject to a litigation hold can be even more daunting, both as a legal and practical matter. Prior to receipt of a complaint, it may be impossible to discern the full scope of the potential claims and defenses, even if some prior notice was provided in a demand or cease and desist letter. Also, a complaint's notice pleading, *e.g.*, "Certain of Defendants' products, including the ABC product, infringes one or more claims of the '123 patent,'" hardly serves as a detailed roadmap for a comprehensive document preservation and collection program. In addition, claims and theories evolve during the course of litigation. A few months after suit is filed, both the ABC

product and a related DEF product may be accused of infringement. An aggressive plaintiff might contend that the accused infringer reasonably should have preserved documents early on about both the ABC and DEF products because they are related.

Even assuming that IP counsel and its client can define the proper legal scope of the document hold, there are practical challenges in locking down the data. Potentially responsive data can reside in both obvious and obscure locations. Not long ago, document preservation and collection efforts largely consisted of a client-led tour of its facilities, filing cabinets, and research and design labs. Together, lawyer and client would identify and tag paper documents and perhaps a few electronic file sets, such as that stored on microfiche or in small databases. The electronic data would then be printed out and copied along with the gathered paper documents. Large swaths of potentially relevant paper documents and electronic files would sit untouched in the client's cabinets and IT network.

Today, what constitutes a good faith, reasonable search for documents is markedly different from prior preservation practices. For most companies, 90 to 95 percent of information is stored in electronic form.[22] Thus, any reasonable litigation hold and collection effort must necessarily parse the client's IT network, local desktops, and accessible removable media (such as CDs, DVDs, and portable hard drives). Corporations often have multiple business units and offices, with their own local networks, software applications, and record retention policies. Increasingly, large companies have overseas operations that use separate operating systems, file applications, and storage systems, and contain documents in foreign languages, which further compound the practical challenges of preserving data.

Sixty to seventy percent of all corporate data is set forth in or attached to email,[23] so litigants and counsel typically begin their preservation and collection efforts by informing employees not to delete any potentially responsive email and to err on the side of over-inclusion. Paper must still be preserved and gathered, but, with the exception of handwritten documents, such as lab notebooks, personal notes, and marginalia on printed documents, most paper is redundant of documents captured by the electronic file hold.

Back up tapes pose special challenges. These tapes typically are created for disaster recovery purposes only (and not with litigation retrieval in mind), and often are not well-labeled, indexed or easily searchable. One back up tape can contain millions of emails and text files, but only a small percentage likely will be relevant to the claims or defenses in suit. Many companies create multiple back up tapes on a daily, weekly, and monthly basis, and store them for long periods of time, sometimes indefinitely. Depending on the size of the company, the number of tapes, and the scope of the matter, the cost just to preserve these tapes can run in the tens of thousands of dollars. Merely setting tapes aside, however, does not reveal what is actually contained on them. The only practical way to know if the quarantine has captured all likely key players and relevant data is to load the tapes and inventory them one by one, which costs significantly more than just pulling the tapes from being re-used.

Courts routinely held that the common law duty requires that all non-duplicative, responsive accessible data must be preserved, retrieved and produced in litigation, and inaccessible data be produced if the accessible data productions are wanting. Although the recent amendments to the FRCP do not attempt to codify the common law duty to preserve, they clearly endorse it and give it teeth. The advisory committee notes to amended Rule 26(b)(2) state: "A party's identification of sources of electronically stored information as not reasonably accessible does not relieve the party of its common-law or statutory duties to preserve evidence." Similarly, while amended Rule 37(f) provides litigants with a "safe harbor" if documents are deleted through the "routine, good-faith operation of an electronic information system," the rule's committee notes admonish: "Good faith in the routine operation of an information system may involve a party's intervention to modify or suspend certain features of that routine operation to prevent the loss of information, if that information is subject to a preservation obligation."

In light of these obligations the courts have tried to strike a balance between the legal duty to preserve and the massive proliferation of corporate information. In the landmark EDD case, *Zubulake v. UBS Warburg*,[24] the court sought to place some practical limits on the scope of the preservation obligation. Among other things, the court ruled that a company faced with pending or threatened litigation is not required to save every potentially relevant electronic document. Rather, a line should be drawn between "accessible" data (such as data that resides and is easily readable on an IT network, local desktops and laptops, and removable media) and "inaccessible" data (such as data stored on back up tapes and hidden on hard drives).[25] According to the court, only accessible data and inaccessible data that relates to "key players" should be subject to the litigation hold and only if it is either relevant to the claims and defenses at issue, likely to lead to discovery of admissible evidence, or subject of a pending or anticipated discovery request.[26] (As discussed above, however, knowing what is relevant to a future complaint or responsive to a future discovery request requires some prescience.)

Zubulake was the first famous example of what can happen when parties do not properly preserve data. The case began rather unremarkably as a garden-variety sexual discrimination suit. But an aggressive plaintiff and several EDD missteps by the defendant resulted in a series of five decisions that addressed in detail a litany of EDD issues, including the timing and scope of the duty to preserve. In "*Zubulake V*,"[27] after reviewing the discovery record, the court found that the duty to preserve arose after Laura Zubulake had complained about how she had been treated at the company and her supervisor and others at UBS recognized that litigation was likely. These events occurred several months prior to Zubulake filing her EEOC charge and later a federal suit. The court also found that UBS had willfully destroyed potentially relevant emails after the duty to preserve triggered and it imposed a variety of sanctions, including an adverse inference instruction, which stated that the jury may infer that missing emails would have been adverse to UBS's case.[28] The court also criticized UBS's litigation counsel for not effectively communicating the litigation hold to all "key players" and for not diligently following up on the employees' preservation efforts. The court stated that, going forward, any outside counsel appearing before it will be expected to have actively participated in document collection and preservation efforts, or risk sanctions for failing to do so.[29] After receiving the harsh adverse inference instruction, the jury returned a $29 million jury verdict against UBS, including $20 million in punitive damages flowing from the various EDD transgressions.

Zubulake was not the first EDD decision, but it issued at a time when a growing number of courts were grappling with similar issues and it addressed in detail several burning questions about the duty to preserve, the practical challenges and costs of complying with EDD requests, outside counsel's role in EDD, and the sanctions for failing to do so. It has been favorably cited by dozens of subsequent decisions, and presaged the explosion of additional EDD decisions and the recent amendments to the FRCP. The latter connection is hardly a coincidence; Judge Scheindlin, who wrote all five *Zubulake* decisions, was a member of the Civil Rules Advisory Committee that crafted the new amendments to the rules.

As *Zubulake* was nearing an end, another case, which would have significant EDD ramifications, was heating up. *Coleman (Parent) Holdings, Inc. v. Morgan Stanley & Co., Inc.*,[30] is now widely regarded as supplanting *Zubulake* as the foremost EDD "poster child." The Florida state court case has been the subject of countless page one news stories, legal articles and law firm client bulletins, and several key Morgan Stanley senior executives reportedly have left the company in its wake.

The suit was filed following a failed merger between Coleman and Sunbeam Corporation. Sunbeam had retained Morgan Stanley to advise it on the financial aspects of the transaction. After the deal closed, Sunbeam declared bankruptcy and thus wiped out most of the value of its stock that had issued to Coleman's shareholders. Coleman's parent holding company filed suit alleging that Morgan Stanley had intentionally misrepresented Sunbeam's true financial condition so that the deal would close and it would receive commissions. During the course of litigation, Coleman sought production of voluminous electronic records, including business records that Morgan Stanley was required to maintain under the federal securities laws. Among other discovery violations, the court found Morgan Stanley had failed to produce large numbers of relevant records or search the attachments of many emails it did produce. In addition, the court found that the company continued its practice of overwriting email for more than 12 months after it had instructed its own employees to preserve paper documents.

Still, what appears to have troubled the court most was its finding that Morgan Stanley's litigation counsel certified it had complied with the court's prior order to produce all relevant electronic documents even though the company still had not searched nearly 2,000 backup tapes that had been located. The court concluded that "[m]any of these failings were done knowingly, deliberately, and in bad faith."[31] After months of discovery wrangling, several motions to compel, and orders compelling Morgan Stanley to produce the electronic records, the court entered partial default judgment, issued an adverse inference instruction, and shifted the burden of proving fraud to Morgan Stanley; Coleman needed to show only reliance on the fraud and damages. Just days after receiving the adverse inference instruction, the jury awarded Coleman $1.45 billion in damages—$850 million of which was in punitive damages.

In the wake of these two recent decisions, it is little surprise that several companies have opted to settle suits plagued with EDD challenges rather than risk high-profile, high-damages jury verdicts. Several recent IP matters have settled under such clouds and circumstances.

Adams v. Gateway, Inc., recently settled immediately after the court ruled that the defendant had failed to preserve and produce email "crucial" to plaintiff's patent infringement claims.[32] The court found that the missing email and other circumstantial evidence, including defendant's "re-discovery" of another highly relevant email on the eve of trial, supported a finding of bad faith. The court imposed sanctions, including an adverse inference instruction supporting plaintiff's infringement claims. Gateway's opening statement at trial openly apologized for the electronic discovery lapses, but the damage apparently had been done.[33] The case reportedly settled after the first day of trial for an "unspecified amount."[34]

Similarly, in *Tantivy Communications, Inc. v. Lucent Technologies, Inc.*, the defendant settled a patent suit just a few days after it was sanctioned for failing to preserve

highly relevant documents.[35] During discovery, plaintiff repeatedly requested documents relating to "interoperability testing," a key issue in the suit. Lucent repeatedly responded that it had no such documents. Nearly a year later, however, a Lucent representative admitted at a Rule 30(b)(6) deposition that the documents, in fact, existed. Other testimony revealed that paper and electronic copies of those documents had been destroyed through regular document destruction practices, but after the duty to preserve arose.[36] While the court did not immediately impose sanctions, it stated it would consider doing so against Lucent *and its outside counsel* after evaluating additional evidence. Just two days later, the case reportedly settled for $14 million.[37]

All of these cases underscore an absolute truth in discovery: You can't produce what you don't have.

Preservation Practice Pointers

If IP litigators and their clients reasonably seek to preserve all potentially relevant documents, they can still fight the production battle as a series of staged retreats with minimal risk of sanction. Particularly in the electronic era, litigators likely will have several bites at the apple to produce withheld documents without any real threat of sanction: First, at a discovery meet and confer with opposing counsel, and, next, in the face of a motion to compel. Even if the court allows the motion, so long as the producing party's objection was reasonable and the data still exists, it is hard to imagine a court imposing sanctions, let alone the kinds of harsh sanctions imposed in *Zubulake, Morgan Stanley, Tantivy,* or *Gateway.*

If, on the other hand, IP litigators and their clients do not reasonably seek to preserve all potentially relevant data, they start litigation with their backs to the wall. Resisting production likely will only provoke an adversary to probe further and could raise the court's suspicion. Earlier statements made to the court about the existence and status of those documents will be scrutinized with the benefit of hindsight by both the adversary and judge and any prior missteps or misstatements, whether based on technical ignorance or innocent error, may be viewed as bad faith or intentional misconduct.

Thus, now more than ever, litigators need to take an active role in guiding their clients' preservation efforts. Outside counsel should work closely with clients to create and implement reasonable electronic document and email management policies. The company should appoint a point person to disseminate and oversee the policy. If the policy is clearly communicated and consistently enforced, employees will be less tempted or able to circumvent it.

Once a company reasonably anticipates litigation, all personnel who may have relevant information should be directed to institute a document "freeze." This starts with a detailed, written memorandum outlining the subjects covered by the hold. The memorandum should take a broad view of the potentially relevant subject matters and stress the importance of immediate and full compliance. The memorandum should instruct personnel to forward it to anyone else within the company that might also possess potentially relevant information, and identify the names of such persons to the point person.

To ensure preservation of all relevant data, outside counsel needs to develop a working knowledge of the client's IT systems and records retention policies before drafting the freeze memo. Without such an understanding, both counsel and client may be unwittingly exposing themselves to potentially disastrous discovery sanctions. If necessary, outside counsel should consult with a computer technology consultant for technical assistance. An ounce of prevention is still worth a pound of cure or, perhaps better stated, a gigabyte of prevention is worth a terabyte of cure.

Principle 2: Cooperate with Your Adversary on EDD Issues

Discovery often tests litigators' civility, and electronic discovery only makes it worse. Litigators now must learn the substantive law and facts of their case *and* become facile enough with technology to manage electronic discovery. Incredible volumes of data must be collected, reviewed and produced, but still within the same general discovery timetables established during the paper era. In "rocket docket" jurisdictions, such as the Eastern Districts of Virginia and Texas, discovery is compressed but the underlying data volumes only grow larger. Inevitably, the risk of inadvertent production of privileged documents increases as the size of a data universe increases. While traditional discovery sometimes deteriorated into a game of "gotcha" over missing documents, in the electronic age it is an Olympic sport. Cooperation, however, can save litigants on both sides huge sums of money otherwise spent second-guessing one another's EDD and IT decisions, and greatly reduce the risk of error leading to court-imposed sanctions.

The recent FRCP amendments encourage cooperation. For example, amended Rule 16(b) provides that litigation counsel should be prepared to discuss anticipated EDD issues with the court at the initial pre-trial conference; amended Rule 26(f) requires the parties to "meet and confer" on EDD issues prior to that initial pre-trial conference, including to discuss preservation issues; and amended Rule 26(b)(5) sets forth a procedural mechanism to "claw back" inadvertently produced documents. The advisory committee notes similarly encourage parties to take an early Rule 30(b)(6) deposition of IT or Records Personnel to help frame and focus discovery. All of these changes fundamentally recognize that the more litigators cooperate and become familiar with the relevant IT systems, the more likely EDD will be a small part of the case, and not dispositive of its outcome.

Not surprisingly, there are only a few cases that discuss the virtues of EDD cooperation—courts are asked to resolve discovery disputes; only the most controversial cases or significant imposition of sanctions gain the headlines. The few decisions that discuss the virtues of cooperation tend to paint a picture of the litigants' road not taken.

For example, in *Hopson v. Mayor and City Council of Baltimore*[38] the court expressed its frustration over the parties' failure to resolve EDD issues, despite its prior orders that they do so. According to the court,

> …as this case graphically demonstrates, it is no longer acceptable for the parties to defer good faith discussion of how to approach discovery of electronic records…. Rather, as the proposed changes to Rule 16(f) make clear, counsel have a duty to take the initiative in meeting and conferring to plan for appropriate discovery of electronically stored information at the commencement of any case in which electronic records will be sought.[39]

The court set forth a litany of EDD topics that it expected the parties to discuss at the Rule 16(f) conference. Among other items, the court directed counsel to consider:

- The type of IT systems used by their clients and the persons most knowledgeable about their operation;
- The preservation of electronically stored information that may be relevant to the litigation;
- The scope of the electronic records sought (*i.e.*, email, voicemail, archived data, back-up or disaster recovery data, laptops, personal computers, PDA's, deleted data);
- The form of production (*e.g.*, "native," other searchable format, or image only, and whether metadata would be sought);
- Whether the requesting party wants to conduct any testing or sampling of the producing party's IT system;
- The burdens and expenses faced by the producing party, based on the Rule 26(b)(2) factors, and ways to reduce them (*e.g.*, limiting the relevant time period, limiting the amount of time spent searching for records, using sampling in lieu of searching all records, and shifting some production costs to the requesting party);
- The amount of pre-production review required to protect privilege and appropriate curative measures if privileged matter is inadvertently produced; and
- Any protective or confidentiality orders required to limit access to produced information.[40]

As a final rebuff, the court criticized the parties for failing to meet and confer, which "should have occurred months ago," and ordered they do so within 30 days.[41]

In other cases, the line between legitimate cooperation and aggressive litigation posturing can be blurry. For example, in *Treppel v. Biovail*,[42] the plaintiff proposed at the start of discovery that, *inter alia*, "the parties exchange information about their document retention policies, identify a deposition witness with knowledge of their computer systems, and preserve relevant data in a variety of specifically identified media and storage devices according to a highly detailed protocol." The plaintiff also proposed that the parties produce accessible data in their native file formats, including all data on hard drives, servers, and removable media, including CDs, DVDs, and ZIP files. The plaintiff further proposed that each party: (1) identify, but not initially produce inaccessible data, such as back up tapes; (2) describe how it can restore that inaccessible data; and (3) list any relevant information that was no longer available and explain the circumstances of its loss or destruction. Finally, the plaintiff proposed that each party answer a document retention questionnaire containing 19 questions concerning the operation of their respective network and email servers, hard drives, and external computers.

The defendants rejected plaintiff's invitation to meet and confer about the proposed order, claiming that it "was unnecessarily onerous . . . and that it was inappropriate to consider production of information, electronic or otherwise, in the absence of specific requests for the production of documents."[43] The defendant later proposed that the parties limit the number of custodians and the search terms to be used. The plaintiff rejected defendant's invitation on the grounds it had no obligation to assist the defendant in its search process.[44] The court expressed frustration over the plaintiff's outright rejection of defendant's counterproposal. According to the court:

> …it was a missed opportunity; the plaintiff might have convinced Biovail to broaden its search in ways that would uncover more responsive documents and avoid subsequent disputes.[45]

The parties' failure in *Hopson* and *Biovail* to agree on how to handle EDD presumably cost each side tens of thousands of dollars in attorney time spent letter writing, meeting and conferring, and briefing and arguing

their positions to the court. For all their wrangling, it appears that none of the parties gained clarity as to their EDD obligations nor reduced the chance they might fail to preserve subsequently requested data and subject themselves to potential sanctions. As the cases proceed, one or more of the parties may painfully learn that real cooperation would have been the better course.

Cooperation Practice Pointers

The good news is that even with the new FRCP amendments not all matters will turn on discovery of large volumes of electronic data. For example, "non-technical" copyright, trademark or licensing disputes may still be litigated without having to pore through the parties' IT networks or development databases. Even in more technical matters, discovery may be focused on particular relevant time periods, business units and employees, and issues, thereby balancing the need to discover relevant information with the costs and practical challenges of turning over every stone. The new rules do not mandate electronic discovery in all matters; counsel must still assess the unique needs of each case and tailor discovery accordingly.

In matters that necessarily hinge on significant electronic discovery, however, the parties can still take steps to reduce the pain, suffering, and costs. For example, as in *Treppel,* the plaintiff may want to serve a document preservation request at outset of, or even prior to, litigation. Among other things, the request should set forth the subject matters in dispute, the relevant time period, and the types of files that should be preserved (*i.e.*, reasonably accessible vs. inaccessible, and give clear examples of each type). The request might even propose a list of some or all of the key words or Boolean phrases that the respondent should use to aid in identifying and preserving potentially responsive information. Of course, the defendant can accept, refine, or reject the criteria proposed by plaintiff, and propose an alternative course. In some instances, the defendant might initiate the preservation and EDD discussions, rather than wait on the plaintiff and risk losing any relevant data during the lull. The defendant might even provide the plaintiff with the guts of a proposed litigation hold, and invite comment. A well-prepared defendant might even turn its EDD pursuits into a tactical litigation advantage, *i.e.*, convince the court that the plaintiff has not conducted the litigation fairly or properly and seek dismissal of the claims.[46]

Once discovery begins, litigants may want to take a Rule 30(b)(6) or keeper of records deposition regarding their opponent's record retention and IT systems, prior to serving any written document requests or interrogatories. Understanding an adversary's systems will allow for more targeted and appropriate discovery requests, eliminate unnecessary discovery disputes, and reduce costs. Counsel should also discuss the desired forms of productions early in the discovery process, rather than wait to complain or defend the chosen file formats until after production is made. If a requestor wants documents produced in their native file form, the respondent should not convert them to an imaged format, such as .tif or .pdf files.

Several recent decisions reveal the risks and costs of unilaterally producing files in an imaged format, particularly in the face of a request for native files. In *Hagenbuch v. 3B6 Sistemi Elettronici Industriali*,[47] the court ordered the accused patent infringer to re-produce native files that already had been produced in .tif. Several other courts recently have issued similar orders.[48] In each case, the respondent's refusal to cooperate likely cost its client significant sums in briefing and arguing against the motions to compel and having to produce documents twice. Early communication and cooperation could have avoided the inefficient outcome in each case.

At their initial discovery conferences, counsel should try to reach agreement on what constitutes "accessible" and "inaccessible" data, so they can pursue rational, staged productions. If the initial production of accessible data is insufficient, the parties may want to consider testing or sampling inaccessible data in lieu of broad-sweeping requests for production of all inaccessible data and the inevitable battles over who should pay. If the sampling bears fruit, the requestor should follow-up with targeted requests for additional inaccessible data held by key players, regarding key subjects, and during relevant time periods. By definition, inaccessible data costs much more to locate, retrieve, and produce than accessible data. A staged production approach can save both parties significant time and money floundering for information, and should reduce the risk that the court will shift production costs onto the requestor.

Most important, parties and their counsel must remember that in discovery "what's good for the goose is good for the gander." A party must be prepared to undertake whatever it asks of its adversary, or otherwise be prepared to make the difficult argument that different standards of preservation and production should apply.[49]

Principle 3: Use Technology to Solve New Technology Challenges

The "Information Age" is all about innovation; new technologies replace older, less efficient ones. Corporate IT systems are on the front line of this revolution; computers and networks can process and store massive amounts of data. The legal industry, however, has failed to keep pace and, until only recently, has largely failed to leverage technological innovation to meet today's EDD challenges.

This disparity between law firm EDD capabilities and client systems is rooted in the fact that most lawyers and courts traditionally dealt only in paper. Document reviews often took place in large "war rooms" or warehouses. Teams of litigators would be charged with burrowing through mountains of hard copy documents, tagging them with Post-it™ notes or colored stickers for responsiveness, privilege, etc., and making multiple copied sets for production and internal use. As depositions neared, paralegals would be given a list of names of persons to be deposed and then disappear for days hunting for all documents bearing those individuals' names. Depositions often get noticed in waves; so after finishing their first pass through the tome of documents, paralegals would repeat the painful process all over again. After depositions and the submission of dispositive motions and briefs to the court, the deposition exhibits and other documents would be manually reviewed again and trial exhibits sets created and copied. Often, this highly-inefficient and torturous document collection-to-trial process would outlast the tenure of the paralegals and junior associates assigned to work on it.

The first generation of EDD litigation software tools introduced in the early 1990s reduced this paper jam by replacing photocopying with scanning, but did little to leverage the information contained in the documents. Rather than review paper documents, lawyers were able to review digital renderings of the paper on their desktop computers, and even sort the document universe by manually "coded" metadata, such as author, recipient, date, and custodian. By the mid-1990s, optical character recognition (OCR) technology had been introduced and improved to a point that lawyers could machine search for key words and later by Boolean expression on these digitized images (though still not with 100 percent accuracy). All of these advancements, however, still treated electronic files as if they were paper, that is, reviewers could see only what was visible on the face of each document. More troubling, the scan and code systems provided reviewers with little insight about the larger document collection or the relationships among selected individual documents, which is of paramount interest in any litigation.

The good news is that litigation support technology has improved significantly in the past few years. Given the recent federal rules changes, this innovation has arrived just in the nick of time. Most importantly, new software tools take full advantage of both electronic file content and *hidden* metadata to reveal patterns and relationships among the document universe otherwise not discernible to the naked eye. Unlike humans, computers do not tire, they can compute accurately and very rapidly, and thereby free up lawyers to do what they do best: analyze structured data and make critical, consistent calls about the relevance of documents.

Many litigators still are unaware of, or resistant to, this technological sea change. For example, some lawyers still use stale tools or solely rely on search to review data. Traditional search, however, is plagued by several critical, inherent limitations.

First, search suffers from a classic "chicken and egg" problem: It is difficult to craft a comprehensive list of search terms for a data set until the data set is examined. It is one thing to conduct *legal* research using well-settled legal principles, *e.g.*, invalidity, infringe!, "on sale," (concept* or conceive) w/5 of "reduce to practice," but it is quite another to discover all relevant documents using search terms. Each matter is unique, and turns on its own set of facts and circumstances, which is usually learned through discovery, not before it begins.

In addition, different companies have different corporate cultures and use different vernacular. Thus, it is practically impossible to take a list of search terms from one matter and apply it to another, and capture all relevant documents. It would take a sage litigator to know all relevant terms, all synonyms, company jargon, project or product codes, and misspellings either contained in the original files or resulting from imperfect scanning and OCRing.

It is virtually impossible to craft the perfect search query; that is, a search string that is neither over-inclusive nor under-inclusive, but rather yields only the universe of documents sought. Ironically, the more exhaustive the list of search terms, the more ambiguous the results. For example, a litigator searching for prior art on the Java programming language might unearth a large number of irrelevant employee emails about coffee breaks. Thus, attorneys must decide which is the lesser of two evils: using narrow queries to account for semantic ambiguity at the risk of omitting relevant documents, or using broad searches and capturing a larger percentage of irrelevant documents, and risk that exhausted reviewers will miss a greater number of relevant documents buried within.

"Fuzzy" and "concept" search have gained some support in the legal market as a way around some of the limitations of traditional search. The underlying premise of these alternative search techniques is sound: words derive their meaning in relation to other words in a document. Statistics about word co-occurrences within documents are used to rank results and expand, or "fuzzify," a search by including other key, co-occurring words (concepts) in the query. Documents are ranked not only by how well they match the original search terms, but also by how well they match the other related terms.

Concept search addresses the problem of finding documents that contain related terms without having to turn over every stone. But, concept search also has its limitations. For example, because it is based on term co-occurrence, it can generate results that are inconsistent with the purpose of the search. If an attorney wants to review only documents that reference the patent-in-suit, co-occurring issues will get in the way. In addition, concept search cannot effectively handle words that have multiple meanings. Documents on Java programming might keenly interest a reviewer, while emails about going "for a cup of java" likely will not. Concept search does not help attorneys identify these different meanings or select the appropriate use nor does it identify co-occurring terms unless the litigator first searches on a synonym. Thus, it shares some of the same "chicken and egg" limitations as traditional search.

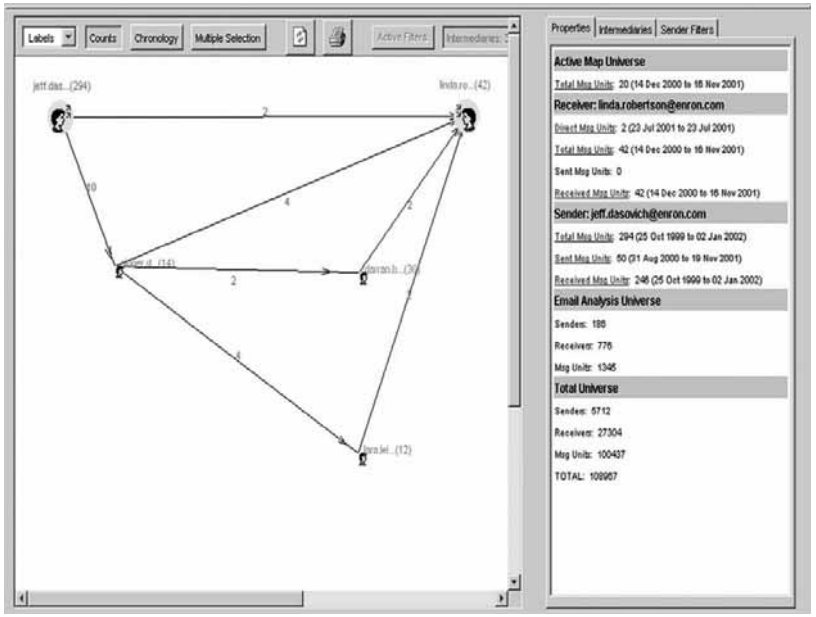
Advanced "concept organization" technology (as distinguished from concept search) solves many of the limitations of traditional and concept search. Rather than rely on search terms to identify potentially relevant documents, concept organization technology automatically organizes the entire data universe into discrete subject matter (folders) before review begins. The technology ostensibly puts documents into virtual manila folders, organizes and labels those folders inside virtual Redwelds™, and then orders the labeled Redwelds inside virtual litigation boxes, and labels and organizes the boxes by subject matter. Rather than arrive to a disorganized data collection, lawyers can now conduct their review in a pre-structured environment where identical, nearly identical and substantively related documents are clustered with one another.

How does it work? Concept folders are automatically generated based on a high-speed, statistical analysis of the similarity of word occurrences within and among all documents in a data collection. Each document is compared and analyzed against every other document, and then grouped into subject matter folders. The folders are then organized hierarchically into a table of contents structure and alphabetically labeled, so that closely related concept folders appear next to one another (as siblings) and share a common parent folder. The grouping algorithm uses a technical notion of document similarity, which is a statistical measure of the distance (or difference) between two documents based on word occurrences in each document. The measure is represented as a vector in a dimensional space of words, and ranks the words by order of importance. The importance of a word is directly proportional to its frequency in the document collection, and inversely proportional to the fraction of documents in which it occurs. Two documents are "close" when the distributions of words in the documents are similar. Similarities in the distribution of more important words are given a higher weight. The document similarity metric is then used to group the collection of documents into the hierarchical set of concept folders. Documents within a folder are all statistically close to the core of the cluster according to the similarity metric. Documents could belong to more than one concept folder if the similarity metric determines they are sufficiently close to multiple group cores.

Until now, practical constraints, such as discovery deadlines and litigation budgets, have precluded attorneys and paralegals from manually organizing data collections prior to review. Advanced technology, however, can process huge volumes of data very quickly and at a fraction of the cost of manual approaches. As a result, attorneys now can gain an immediate understanding of the scope and content of their client's collected data universe and assign subject matter folders to be reviewed by someone based on the person's seniority and technical expertise. Attorneys also can prioritize review and assign folders about critical case issues first, and "back burner" presumably irrelevant material, such as spam, personal email, and other folders unrelated to the litigation. Search can be used to augment or further refine the concept organization, but rather than search a largely unknown data set, queries can be laser-beamed focused within or across certain critical subject matters. Foreign language documents similarly can be clustered and organized by subject, and appropriately assigned to bilingual attorneys for efficient translation and review.

Concept organization also promotes more accurate and consistent document tagging (*e.g.*, responsive, privileged, confidential, etc.) because attorneys can now review identical, nearly identical, and related documents together. By contrast, lawyers using traditional approaches, such as review by custodian or search results, are forced to shift gears to try to understand documents on a wide range of topics, and thus their review rates are significantly slower, less focused, and much more expensive. Also, during traditional review, different attorneys will review the same or similar documents and make different judgment calls about their relevance and privilege. According to one recent study, lawyers miss as many relevant documents as they find using this tired and inefficient approach.[50] Corporate clients are reacting against this misallocation of expensive attorney time, and are now demanding that counsel use better technologies and approaches to get the job done.

Traditionally, email review has been particularly challenging, both because of its high volumes and because it contains protracted discussions among many individuals that occur in parallel and in splintered threads. Like concept organization tools, new visualization technologies can help overcome these inherent challenges. Visual and interactive "email maps" help attorneys analyze large, complex collections of email messages. These maps can display all the email communications between a sender and a recipient about a particular subject, within certain date ranges, or that contain certain key terms, regardless of whether they were sent directly or via intermediaries. The maps portray the actual email trails as a web of communications among the participants. Thus, in any matters in which knowledge or *scienter* is at issue, *e.g.*, willful infringement, unenforceability of patent, misappropriation of trade secrets, email mapping technology can compute and reveal who knew what, and when.



Conclusion

Dealing with EDD can be daunting, particularly in IP litigation. The EDD challenge, however, is not insurmountable. If IP litigators and clients: (1) preserve all potentially responsive documents, even if they produce documents more narrowly: (2) cooperate with their adversaries and avoid engaging in a protracted, distracting and costly EDD battles; and (3) recognize that technology is a double-edged sword: it is the root of the proliferation problem, but it also can provide the cure. So, no matter what devils may lurk in the details, if IP litigators and clients adhere to these bedrock principles, they are on the proper path to meeting and beating the EDD challenge.

Notes

1. *See* The Radicati Group Quarter 2, 2006 E-mail Market Survey.
2. *See* Kenneth J. Withers, "The Real Cost of Virtual Discovery," *Federal Discovery News* (Feb. 2001).
3. *See* Kristin Nimsger, "Same Game, New Rules," *Legal Times*, June 18, 2002 (*http://www.law.com/specialsupplement/e_discovery/same_game.html*) (last visited August 14, 2006).
4. *See* "The Sedona Principles: Best Practices Recommendations & Principles for Addressing Electronic Document Production" (Sedona Conference Working Group Series 2004).
5. Ameet Sachdev, "E-mails Become Trial for Courts," *Chicago Tribune*, (4/10/2005)

6. *See* Stephen Lesavich, "Patent Enforcement: Extortion, Shakedown, Blackmail or the American Way?" (March 28, 2003)(*http://www.hightech-iplaw.com/leswibar2003.pdf*) (last visited August 14, 2006) ("About 76 percent of all patent infringement suits settle after discovery without a trial."); *See also, generally*, Jay Kesan, Gwendolyn Ball, "How are Patent Cases Resolved? An Empirical Examination of the Adjudication and Settlement of Patent Disputes" *Illinois Law and Economics Working Papers Series*, Working Paper No. LE05-027 (Sept. 30, 2005) (discussing disposition statistics of patent suits)
7. In re Priceline.com, Inc. Sec. Lit., 233 F.R.D. 88 (D. Conn. 2005).
8. Williams v. Sprint/United Management Co., 230 F.R.D. 640 (D. Kan. 2005).
9. Turner v. Hudson Transit Lines, Inc., 142 F.R.D. 68, 73 (S.D.N.Y. 1991)("… the obligation to preserve evidence even arises prior to the filing of a complaint where a party is on notice that litigation is likely to be commenced."); *see also* Broccoli v. Echostar Comm., 229 F.R.D. 506, 510 (D. Md. 2005)("A party has a duty to preserve evidence when the party is placed on notice that the evidence is relevant to litigation or when the party should have known that the evidence may be relevant to future litigation.").
10. *See* Sensonics, Inc. v. Aerosonic Corp., 81 F.3d 1566, 1572 (Fed. Cir. 1996) ("When the calculation of damages is impeded by incomplete records of the infringer, adverse inferences are appropriately drawn."), *citing* Lam, Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1065 (Fed Cir. 1983) (any adverse consequences rest upon the infringer when the inability to ascertain lost profits is due to the infringer's failure to keep accurate or complete records); Beatrice Foods Co. v. New England Printing and Lithographing Co., 899 F.2d 1171, 1176 (Fed. Cir.1990) (When manufacturing records were destroyed after the litigation commenced, strong inferences adverse to the infringer may be drawn).
11. In re EchoStar Communications Corp., 448 F.3d 1294 (Fed. Cir. 2006) ("…the work-product doctrine, or work-product immunity as it is also called, can protect "documents and tangible things" prepared in anticipation of litigation that are both non-privileged and relevant").
12. Rambus, Inc. v. Infineon Technologies, 155 F.Supp.2d 668, 682 (E.D. Va. 2001), *rev'd in part and vacated in part, on other grounds*, 318 F.3d 1081 (Fed. Cir., 2003).
13. Hynix Semiconductor v. Rambus, 2006 WL 565893,*24 (N.D. Ca. Jan. 5, 2006).
14. *Id.* at *10–17.
15. *Id.* at *14 (*citing* County of Los Angeles v. Superior Court, 82 Cal.App. 4th 819, 833 (2000)).
16. Samsung Electronics v. Rambus, 2006 WL 2038417, *42 (E.D. Va. July 18, 2006).
17. *Id.* at *16, *See also* id. at *39 ("The court has not relied here on the fact that Rambus labeled a number of the relevant business documents as work product in determining that Rambus anticipated litigation…").
18. *Id.* at *38–39.
19. *Id.* at *38, 42.
20. *Id.*, at *39.
21. *Id.* at *45–46.
22. *See* Robert D. Brownstone, "Collaborative Navigation of the Stormy e-Discovery Seas," 10 *Rich. J.L. & Tech.*53, 57 (2004).
23. "Email Discovery: Tape Is Not Enough," *AIIM eDoc Magazine*, October 19, 2005 (*http://www.aiim.org/article-docrep.asp?ID=30577*) (last visited August 14, 2006).
24. Zubulake v. UBS Warburg, 2003 WL 22410619, at *5 (S.D.N.Y. Oct. 22, 2003).
25. *Id.*
26. *Id.* at *4.
27. *Zubulake* V, 2004 WL 1620866 (S.D.N.Y. July 20, 2004).
28. *Id.* at *12. Because the court determined the spoliation to be willful, it presumed the lost information was relevant.
29. In fact, in Phoenix Four, Inc. v. Strategic Resources Corp., Judge Baer recently imposed monetary sanctions on both outside counsel and the defendant for failing to produce relevant data from the hidden partition of a hard drive, and relied on Judge Scheindlin's prior warning to counsel in *Zubulake V* for support. 2006 WL 1409413 at *5–6 (S.D.N.Y. May 23, 2006.).
30. Coleman (Parent) Holdings, Inc. v. Morgan Stanley & Co., Inc., 2005 WL 679071 (Fla. Cir. Ct. Mar. 1, 2005).
31. *Id.* at *5.
32. Sealed Memorandum Decision and Order on De Novo Review of Magistrate Judge's Reports and Recommendations Imposing Sanctions, 2:02-CV-106-TS, (D. Utah Mar. 6, 2006), unsealed March 22, 2006.
33. "Gateway Patent Suit Opens with a Mea Culpa", TMC.net, April 4, 2006 (*http://www.tmcnet.com/scripts/print-page.aspx?PagePrint=http%3A%2F%2Fwww.tmcnet.com%2Fusubmit%2F2006%2F04%2F04%2F1536682.htm*) (last visited August 14, 2006).
34. "Gateway Settles Patent Suit Filed by Utah Entrepreneur," TMC.net, April 6, 2006 (*http://www.tmcnet.com/usubmit/-gateway-settles-patent-suit-filed-utah-entrepreneur-/2006/04/06/1547618.htm*)(last visited August 14, 2006).
35. 2005 WL 2860976 (E.D. Tex. Nov. 1, 2005).
36. *Id.* at *2.
37. "InterDigital posts profit, settles license dispute," *Philadelphia Business Journal*, November 3, 2005.
38. Hopson v. Mayor and City Council of Baltimore, 232 F.R.D. 228 (D. Md. 2005).
39. *Id.* at 245.
40. *Id.*
41. *Id.*
42. Treppel v. Biovail, 222 F.R.D. 363 (S.D.N.Y. 2006).
43. *Id.*
44. *Id.*
45. *Id.* at 374.
46. *See, e.g.,* Anderson v. Crossroads Capital Partners, L.L.C., 2004 WL 256512 (D. Minn. Feb. 10, 2004)(Granting adverse inference instruction against plaintiff for using "CyberScrub" software to remove discoverable documents from her computer); Kucala Enterprises, Ltd. v. Auto Wax Co., 2003 WL 21230605 (N.D. Ill. May 27, 2003)(Dismissal of patent declaratory judgment case as sanction due to use of "Evidence Eliminator" software on plaintiff's computers).
47. Hagenbuck v. 3B6 Sistemi Elettronici Industriali, 2006 WL 665005 (N.D. Ill., 2006).
48. *See, e.g.,* Treppel v. Biovail, 222 F.R.D. 363 (Defendants objected to a request specifying native format production but provided no substantive basis for doing so, and thus the court ordered the native production); Gilliam v. Addicts Rehab Center Fund, 2006 WL 228874 (S.D.N.Y., Jan. 26, 2006) (The court rejected defendant's attempt to produce confidential payroll data in paper form as there was "little doubt that the time and cost expenditure could be disproportionate to the interests sought to be protected."); Williams v. Sprint/United Management, 230 F.R.D. 640 (Ordering re-production of Excel spreadsheets in electronic form, with cell formulae unlocked); In re Verisign, 2004 WL 2445243 (N.D. CA., Mar. 10, 2004) (The court found that while forcing defendants to reconvert back .pst documents they had converted from native format to .tif format and then Bates stamping and redacting those documents might be "difficult," defendants were "solely at fault for their now inconvenient predicament.").
49. *See* OKI America, Inc. v. Advanced Micro Devices, No. C 04-31171, 2006 WL 2547464 (N.D. CA, Aug. 31, 2006) (rejecting AMS's request for native file documents because, *inter alia*, it was "asking OKI to do something AMD itself refused to do.").
50. Anne Kershaw, "Automated Document Review Proves its Reliability," *Digital Discovery & e-Evidence*, vol. 5, no. 11, at 3 (Nov. 11, 2005) ("…people reading documents to assess relevancy missed close to half of the relevant documents.").

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ELECTRONIC DISCOVERY: HYPE, SLEEPING MONSTER, OR ROARING TIGER?

September 2006

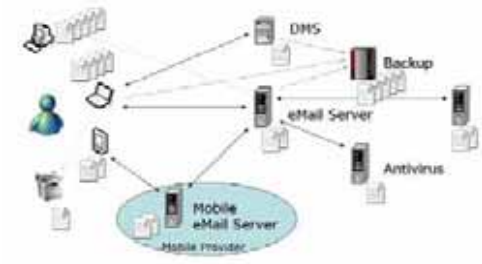
Introduction

The last eleven years have brought more changes to the legal industry than the first three centuries. The driving force behind these changes has been the influence of the Internet. The impact is dramatic: 93% of all information generated in 1999 was "born digital." (http://www.dailycal.org/sharticle.php?id=4944) When the amendments to the Federal Rules of Civil Procedure take effect on December 1, 2006, electronic information will become a permanent fixture in litigation. (http://www.ediscoverylaw.com/articles/federal-rules-amendments/)

Even though virtually all information today is generated, compiled and transmitted in electronic form, few legal professionals know (1) where it is located, and (2) what it looks like. This gap in knowledge might be the result of a simple axiom: "If I don't see it, I don't believe it." *See, e.g.*, C. Kobayashi and L. Williams, Meta Data: Hidden Liability In Your Documents (2006). For example, electronic information is more than a digital representation of a physical document – it includes meta data. And electronic information is stored in more places than on your hard drive or in your document management system.

Example: One Word Document Attached to One Email

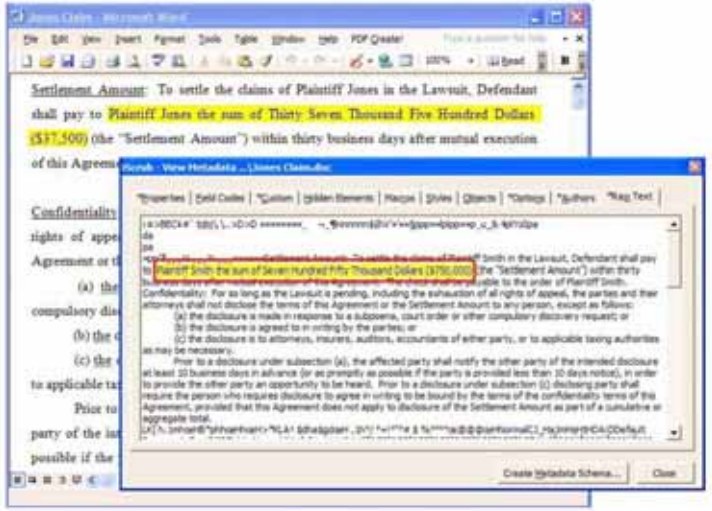
For this example, let us assume that there is a recipient of a single email with one Word document attached to the email. This recipient has a typical computer set up, consisting of (1) a desktop personal computer at work, and (2) a wireless personal digital assistance (Blackberry, smart phone, etc.). Here are some of the places where copies of the Word document are located:



On the recipient's network, there are at least ***TWENTY- FIVE*** places where copies of the Word document attached to the single email are stored.

Example: Meta Data

So let us see what meta data looks like:



The Word document in the background was created using the "Open File – Save As" method. The original document was drafted for Plaintiff Smith, who earlier settled with Defendant for $750,000. Defendant later is seeking to settle with Plaintiff Jones for much less money. You can see in the foreground with the iScrub viewer application "stuff" (*i.e.,* meta data) that cannot be seen using the Word application, such as deleted and revised text, which is highlighted. Meta data also includes other information, such as the author and the date of the revised document (not shown above).

Electronic Discovery: A Tiger About to Roar

Those who believe that electronic discovery is just hype or a sleeping monster are in grave danger. Craig Ball, a leading national expert in electronic discovery, makes the following observation:

> It's the Stirring Monster. E-discovery's been slow to take hold in everyday practice, but everyone uses computers and nearly all documentary evidence is born digitally. Lawyers can't walk away from 2/3rds of the evidence or turn a blind eye to its metadata. Judges are starting to "get it," too. Intelligently and aggressively pursued, e-discovery lets you eat your opponents for breakfast. (http://www.abanet.org/lpm/lpt/articles/ftr07041.html)

It is unacceptable to continue to turn a blind eye to electronic discovery. Tom Mighell, an expert on legal technology and a well known legal blogger, cites the following statistics:

> According to the ABA's Legal Technology Resource Center's 2004-2005 report, 73% have never received a request for electronic discovery, while 11% receive two or less per year, 9% receive 3-11 requests per year, and 6% receive them monthly. (http://www.discoveryresources.org/04_om_thinkingED_0510.html)

Past practices no longer will work: "Lawyers have tended to avoid filing e-discovery requests, primarily out of fear. If they file a request, the other side may retaliate with a last-minute barrage of requests on the eve of trial. John Tredennick, chief executive of Catalyst Repository Systems, Inc., calls this 'mutually assured destruction.'" (http://www.law.com/jsp/legaltechnology/pubArticleLT.jsp?id=1159866329787)

And there is plenty of information out there to inform and educate members of the Bar about electronic discovery. (*See, e.g.,* http://www.wsba.org/media/publications/barnews/june06-medved.htm)

Attorney Duties and Ethical Rules

The American Bar Association and the Washington State Bar Association have adopted the following ethical rule:

> A lawyer must act competently to safeguard information relating to the representation of a client against inadvertent or unauthorized disclosure by the lawyer or other persons who are participating in the representation of the client or who are subject to the lawyer's supervision.

Attorneys are under ethical requirements to preserve client confidences and not waive privileged information. As electronic discovery takes hold, it is now critical to control the collection, review and production of all electronic information. Furthermore, this responsibility should not be delegated to a non-attorney that is unfamiliar with the case and legal principles at stake. "Lawyers can outsource many services or hire technical support to operate electronic systems, but they retain a duty to supervise staff, outside vendors, and independent contractors in the performance of their professional responsibilities." (http://www.abanet.org/genpractice/magazine/2003/jun/judgment.html)

Start Now – Plan and Prepare

A smart approach to this problem is to be proactive, and begin to plan before any problem arises. This approach will enable you to control the timing of your tasks without having externally imposed pressures, such as discovery deadlines, affecting your work.

Before starting, it is important to make sure everyone is educated. You should ask each participant (including legal staff, outside counsel, IT staff, records management staff, and senior management) the following questions:

- Have you ever seen meta data before?
- Do you know where electronic information is stored?

If they are unable to answer these questions, they should first read this paper before starting.

1. Organize and Protect Your Electronic Information

Step 1: Send all third party email attachments as Adobe .pdf files (http://www.adobe.com/products/acrobat/readstep2.html).

Step 2: Digitize your existing hard copy documents, such as your signed original contracts. These digitized documents should be converted into a non-editable format, such as Adobe .pdf files, and stored in a secure location within your system (such as your document management system). They should be organized so you or anyone can find them quickly and easily. If they contain confidential information, they should be protected from internal public view to the extent possible.

There are many companies today that provide document scanning services. Most of them are now regionally based, and local law firms will have a good idea of which companies will do the best job for the best price.

Step 3: Use a document drafting or document assembly application to create new documents. As the Massachusetts Bar Association recommends:

> Avoiding "copy and paste" creation of new documents can help keep sensitive information out of documents. If you use a document assembly program to create your documents, you're even better off, as each document is created "cleanly" from a template that has no personal information in it. (http://www.massbar.org/publications/lawyersjournal/article.php?c_id=1037515398&vt=2)

Some of the better known document drafting and document assembly applications are as follows:

- Ixio Corporation – Ixio Legal Suite (QShift) (http://www.ixio.com/)
- Esquire Innovations – iCreate DA (http://www.esqinc.com/index.php?p=products&id=13)
- Lexis-Nexis – HotDocs (http://www.hotdocs.com/)

2. Develop Written Document Retention/Destruction Policy for Clients

Step 1: Inventory all electronic devices in the organization. This inventory must include peripherals, such as laptops, Blackberries, cell phones, PDAs, voicemails, home computers, that either belong to the organization, or are connected remotely to the organization's servers.

Step 2: Develop a diagram (schematic) of all inventoried devices and how they are connected (networked). This also includes how devices, and the entire organization's network, are backed up for disaster recovery.

Step 3: Inventory all software programs used, including manufacturer, program name and version number. Software programs include operating systems, applications, tools and utilities.

Step 4: Prepare an explanation of how the organization's database works, and what kinds of reporting capabilities it has. This would include any document management systems, and how those systems are organized (by what variables are documents stored and retrieved).

Step 5: Clearly identify what applications (*e.g.,* emails, disaster recovery tapes) automatically delete and/or overwrite themselves, and by what criteria they are deleted or overwritten *(e.g.,* by dates, or oldest emails, or size of email).

Step 6: Clearly state how the organization's database identifies and protects (a) trade secrets and confidential and proprietary information, and (b) attorney-client privileged communications.

3. Develop Litigation Hold Policy for Clients

Step 1: Immediately when any litigation hold is issued, identify and notify key employees of the hold. Do not allow employees to review or collect the information themselves. Prevent spoliation claims by knowing, as soon as possible, where the data that needs to be preserved is located.

Step 2: Collect the required electronic information without changing or destroying any data. This includes the use of third party forensic experts, if necessary, who can use specially designed technology to collect relevant electronic information. It also includes the ability to collect this information without hindering regular daily operations.

Step 3: Document how the electronic information was collected, stored and accessed so it creates a proper chain of custody. Each person involved in the identification and collection needs to describe how the electronic information was located and collected.

4. Form Litigation Hold Team

The purpose of a litigation hold team is to have knowledgeable personnel available to answer the questions of litigators who do not know what they do not know. This team will be responsible for preserving potentially relevant electronic evidence and prevent spoliation. (*See, e.g.,* Tom O'Connor, e-Discovery & Preservation - Take Control!, http://www.fiosinc.com/resources/pdfFiles/200510_edPreservation.pdf)

Step 1: Select team members, including legal department members; outside counsel; paralegal or project manager; records management person; senior management; and IT department member. Consider adding third party forensic experts.

Step 2: Assign team members responsible for culling, filtering and de-duplicating data, which will then be processed in a common format.

Step 3: Review processed data, which includes identifying, indexing, excluding data that is confidential and privileged, and analyzing.

Step 4: Finally, the team must tightly supervise the production of data and post-production management of data.

Conclusion

Electronic discovery is here to stay. Because virtually all documents are "born digital," lawyers must educate themselves to be prepared for this new era in the legal industry. The legal requirements are changing, and therefore so lawyers must change.

Proactive and thoughtful preparation will help you avoid the scenario where, "in this age of electronic discovery, we all – plaintiffs and defendants alike – find ourselves hostage to technology." (http://www.law.com/jsp/legaltechnology/pubArticleLT.jsp?id=1159866329787)

We thank you for this opportunity to share with you our research and experiences on electronic discovery. We would very much appreciate hearing from you about your thoughts and experiences.

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META DATA: HIDDEN LIABILITY IN YOUR DOCUMENTS

© Craig Kobayashi and Laura Williams
Ixio Corporation
August 2006

Introduction

For a subject that has been discussed frequently, it is surprising that legal professionals are largely misinformed or uninformed about meta data in documents. This gap in understanding might be the result of a simple axiom: "If I don't see it, I don't believe it." After all, legal professionals are not technical experts.

So let us see what meta data looks like:

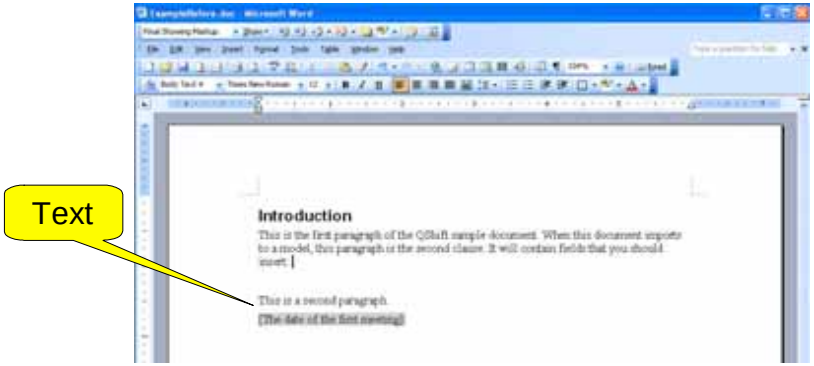


Figure 1: Starting Document. This document, titled "ExampleBefore.doc." was a previously existing Microsoft® Word document.

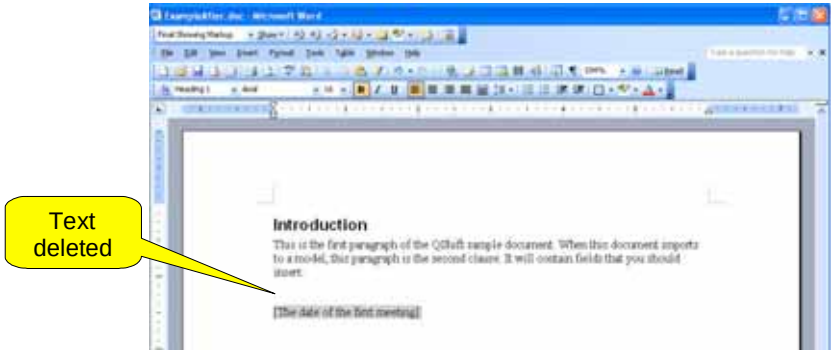


Figure 2: Edited Document. This document was created using the popular "Open File – Save As" method. This "new" Word document, "ExampleAfter.doc," deleted the words "This is a second paragraph" from the original document entitled "ExampleBefore.doc."

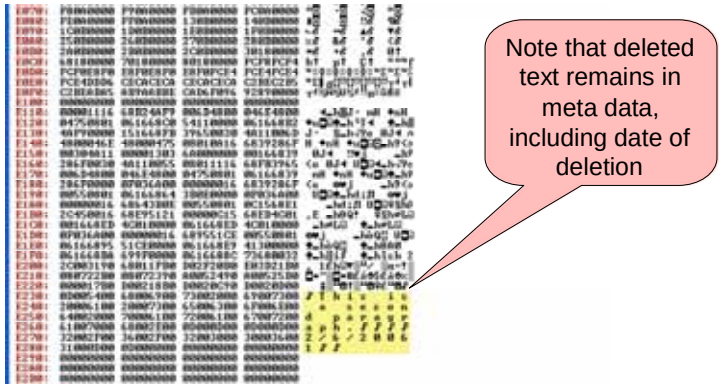


Figure 3: Edited Document With Hexadecimal Data Viewer Application Applied. This is the "ExampleAfter.doc" document, with a hexadecimal data viewer application that displays "stuff" (i.e., meta data) that cannot be seen using the Word application. You can see in the highlighted text the deleted words "This is a second paragraph," together with the date it was deleted. Meta data also includes other information, such as the author of the revised document (not shown above).

Virtually all legal professionals to whom we have shown these slides are aghast. This is true even for lawyers who have heard about meta data. The simple fact is that until a person can see it for himself or herself, "bad" meta data is an abstract issue.

What is Meta Data?

Here is one example of a definition of meta data:

> Metadata is structured, encoded data that describe characteristics of information-bearing entities to aid in the identification, discovery, assessment, and management of the described entities.
> http://en.wikipedia.org/wiki/Meta_data

That definition is not going to help lawyers, paralegals and legal assistants in understanding meta data, and the problems associated with it.

But meta data is an issue, and the amount of meta data is growing. Ever since the legal industry started using word processors, meta data has been around. In fact, "more than 90 percent of documents are created electronically, with little thought to what might be in them other than what is visible to the naked eye." http://www.lawtechnews.com/r5/survey.asp So, just because you can't see it doesn't mean it doesn't exist, or is not there.

Dennis Kennedy, a leading authority on legal technology, describes meta data in terms that legal professionals can better relate to:

> Metadata refers to certain data that are associated with a document, but are not generally visible in the ordinary display or printing of the document. **Common examples include comments, markup and revisions, author, owner and other information, and even records of versions**. (emphasis added)
> http://www.denniskennedy.com/archives/2005_10.html#000891

With the realization that a document's meta data contains comments, revisions and even records of versions, legal professionals can no longer ignore meta data. Those who ignore meta data do so at their peril.

Problems, or "Bad" Meta Data

Meta data inherently is neither good nor bad. It simply exists as a part of an electronic digital document. But when lawyers discovered that meta data in documents could be used against them and their clients, the first reaction was to declare meta data "off limits":

> In 2004, the New York State Bar Association issued opinions forbidding attorneys receiving electronic documents from using special tools to recover metadata, while also requiring the sending attorneys to remove metadata from its sent documents.
> http://www.law.com/jsp/legaltechnology/pubArticleLTN.jsp?id=1145538533635

But the time to forbid the use of meta data is well past:

> In the course of depositions in litigation against Vioxx manufacturer Merck, the drug company was discovered to have altered data submitted to the *New England Journal of Medicine*. The excised data was recovered through metadata mining and helped bolster the plaintiffs' arguments that Merck had been deceptive about the safety of the drug.
> http://www.law.com/jsp/legaltechnology/pubArticleLTN.jsp?id=1145538533635

The Florida Bar Association's approach is more realistic:

> In order to maintain confidentiality under Rule 4-1.6(a), Florida lawyers must take reasonable steps to protect client confidences in all types of documents and information that leave the lawyers' offices, including electronic documents and electronic communications with other lawyers and third parties.
> http://www.floridabar.org/tfb/TFBETOpin.nsf/basic+view/0A1B5E3A86DF495A8525714E005DD6FD?OpenDocument

Here is one example of how meta data can earn a "bad" reputation:

> The partner at Coxe's [Florida Bar President] firm had sent a brief to a lawyer at another firm who was working on a similar case. Based on the brief, which was sent electronically, the other firm was able to reconstruct every change that had been made to the document, including e-mails between Coxe's partner and his client -- a potential violation of attorney client privilege.
> http://www.law.com/jsp/legaltechnology/pubArticleLTN.jsp?id=1145538533635

It is difficult to see how well respected and experienced attorneys can commit such egregious errors. One explanation for this difficulty is the simple axiom we started with: "If I don't see it, I don't believe it."

Simple Ways To Find Meta Data

If you've never seen meta data before, here are a couple of simple ways to find meta data in your Word documents:

- Open a Word document
- Go to "File" and click on "Properties"
- Review the tabs in the Properties window that appears such as the "Custom" and "Contents" tabs
- Turn on the "Track Changes" or show hidden data features

How To View Meta Data

There are ***hundreds*** of hexadecimal data viewer applications that display meta data in documents, and software developers have been using these tools for years. For the more adventurous legal professionals, here are a few free ones:

- http://www.gbresearch.com/software.html#binviewer
- http://www.hhdsoftware.com/Family/hex-editor.html
- http://www.softcircuits.com/cygnus/fe/
- http://www.chmaas.handshake.de/delphi/freeware/xvi32/xvi32.htm
- http://www.pspad.com/

How To Remove Meta Data

Several companies offer meta data removers, such as:

- Microsoft (http://www.microsoft.com/downloads/details.aspx?FamilyId=144E54ED-D43E-42CA-BC7B-5446D34E5360&displaylang=en)
- Esquire Innovations – iScrub (http://www.esqinc.com/?p=products&id=2)
- Workshare – Protect (http://www.workshare.com/products/wsprotect/)
- Payne Group – Metadata Assistant (http://www.payneconsulting.com/products/metadataretail/)
- Kraft Kennedy & Lesser – ezClean (http://www.kklsoftware.com/index.asp)

Caution: The Professionals Use Sophisticated Tools

But those who believe that the tools listed above, particularly the meta data removers, have solved the meta data problem are only outsmarting themselves. Software forensics professionals are using sophisticated applications to search and filter meta data in documents, including documents that have had meta data removers applied to them. One such application is EnCase, by Guidance Software, Inc. (http://www.guidancesoftware.com). Available since 1997, EnCase was first marketed to law enforcement agencies; in fact, over 94% of police departments and law enforcement agencies worldwide use EnCase. Some of the high profile criminal cases in which EnCase played a significant role are:

- Martha Stewart
- Michael Jackson
- Scott Peterson
- BTK Killer (Dennis Rader, Wichita, KS)

Princeton Software has its Meta Data Reviewer 2.0 (http://www.princetonsoftwarecompany.com/), which also provides users the ability to review meta data. Forensic Tool Kit by AccessData (http://www.accessdata.com) is another application that filters meta data associated with images (e.g., .jpeg files).

Simple Steps to Implement Now

If your organization:

- Uses the popular "Open File – Save As" method of creating new documents;
- Sends Word documents as attachments to third party emails; and
- Has no meta data removers, cleaners or scrubbers

You should make changes immediately, such as sending all third party email attachments as Adobe .pdf files (http://www.adobe.com/products/acrobat/readstep2.html).

As a second step, you should use a document drafting or document assembly application:

> Avoiding "copy and paste" creation of new documents can help keep sensitive information out of documents. If you use a document assembly program to create your documents, you're even better off, as each document is created "cleanly" from a template that has no personal information in it. http://www.massbar.org/publications/lawyersjournal/article.php?c_id=1037515398&vt=2

Some of the better known document drafting and document assembly applications are as follows:

- Ixio Corporation – Ixio Legal Suite (QShift) (http://www.ixio.com)
- Esquire Innovations – iCreate DA (http://www.esqinc.com/esqfiles/PressReleases/iCreateDA%20Release.PDF)
- Lexis-Nexis – HotDocs (http://www.hotdocs.com/)
- Business Integrity – DealBuilder (http://www.business-integrity.com/document-assembly.html)
- Microsystems – D3 (http://www.microsystems.com/d3/)

Conclusion

We thank you for this opportunity to share with you our research and experiences on meta data. We would very much appreciate hearing from you about your meta data experiences, especially if you have "war stories" or if you use other products or services.

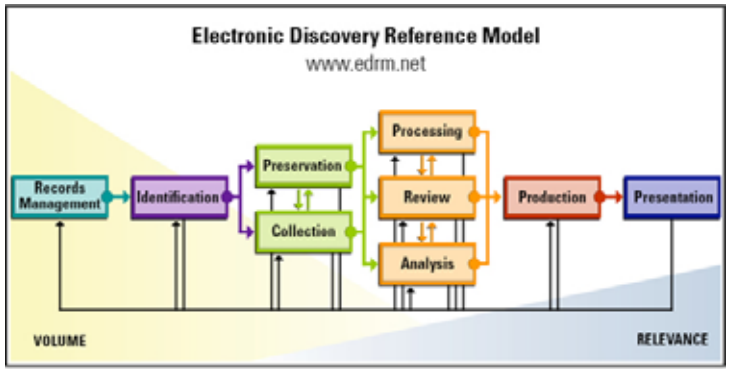
Electronic Content Management Plan Responsive to Electronic Discovery Requirements

By Penny Phillips, esq.
Pinnacle Partners In Medicine Corporate Counsel

Overview

Electronic Records are a reality of modern business. Estimates are that ninety-five percent of the world's information is being generated and stored in digital form and more than half of business documents created today never become paper records. They never get printed out.

New Federal court rules regarding Electronic Discovery (doubtless State Courts will follow soon with their own rules) have made it necessary for companies to address Electronic Records from a legal viewpoint. Below is a model for Electronic Discovery.



[Source: The Electronic Discovery Reference Model (EDRM) Project at http://www.edrm.net]

First Step

As this chart illustrates, the first step in dealing with Electronic Discovery is to develop a corporate Electronic Records Management Plan to address these records in a coherent, consistent way. There is no right answer for how to do an Electronic Records Management Plan. Courts do not sanction companies who have a plan and follow it in good faith. Courts sanction companies who fail to have such a plan, selectively implement their plan, are inconsistent in following their plan, or act in bad faith. Therefore, it is imperative that companies develop a plan and implement it. The plan should focus on centralized control to allow the plan to be enforced consistently. The plan must also address implementation (with protection of data currently subject to legal hold), compliance monitoring, and education of the relevant users. The plan will develop as the company learns what works and what doesn't.

The starting point for a company to create an Electronic Records Management (ERM) Plan is to get input from the right people within the company. If the legal department doesn't have one, a specific lawyer should be designated as technology counsel (if the law department has more than one lawyer) so that at least one person can develop some level of understanding of the issues. Technology counsel should be the lead but must work closely with IT. Legal and IT will need to coordinate for each aspect of this ERM.

Electronic Records Management

There are three reasons for a corporation to retain data:

- Business Requirements – Records that further Pinnacle's business purpose
- Regulatory Requirements – GAAP, SEC, SarBox, etc.
- Litigation Requirements – Preserve potentially relevant documents in anticipation of litigation and continue to identify and preserve newly created business records relevant to pending litigation

A good Electronic Records Management Plan will focus on these three reasons for keeping records and destroy records that do not fall within these requirements. Destruction of nonessential records is important to reduce the volume of electronic records in a company's possession.

Thus, the ERM team will need input from others who understand what would be business records and can address the business and regulatory (*e.g.* GAAP, Sarbanes Oxley, HIPAA, etc.) requirements for business records as relates to the company's industry. At a minimum, most companies will need input from the following functional areas: Accounting/Finance, Operations, Billing and Collections, HR, Corporate Communications/Policy, Marketing/Business Development.

Volume

Not all electronically stored information (ESI) is (or should be) a business record. Yet all data that a company has is subject to discovery and the costs associated with it. In an ideal world, a company's electronic bits and bytes would only contain electronic business records – no extraneous files. Document retention and destruction policies (and the software used to implement and enforce them) reduce the volume of ESI in a company's possession.

Volume costs money. This applies to storage and management but also to litigation costs. Each piece of data in a company's possession must be evaluated for preservation and all data that is preserved must evaluated for relevance and privilege, then for production, and ultimately for use at trial. While we can automate the preservation to some extent, the relevance and privilege evaluations require review by lawyers – usually outside counsel at their hourly billing rate.

Common estimates for how many printed pages come from electronic data are as follows:

Data	Printed Pages
One Megabyte	= 1,000-4,000

One Gigabye = 100,000-400,000
One Terabyte = 1,000,000-140,000,000

(*Caveat*: Estimates of how digital data convert to printed pages are limited by the wide variance in how applications format the printed page; a tiny word file can result in dozens of printed pages while a large graphic file may print as a small image.)

The laptop on which this is being written has a 40 gigabyte hard drive. And that is only one user's machine. Multiply that by the number of users in our system to get some idea of the capacity for information that belongs to us.

Policies

Records Retention & Disposal Policy and Procedure – Review and update existing policy (which is for normal business practices) to address electronic records. In the absence of any record retention policy, express the urgency of putting one in place to control the business risk and cost associated with an unnecessarily large volume of paper and electronic data in the event of litigation.

- Explain the types of discoverable data.
- Policy mentions paper documents and electronic data backup. Make this more clear. Clarify what needs to be retained. Clarify how to determine when records should be destroyed and how that is identified.
- Reference IT retention procedures and explain our business reasons for the particular decisions regarding retention periods
- Determine when a particular electronic document is a "final" business record and must be retained as a business record
- Define retention (archive) dates for electronic data

IT Archive, Backup and Auto-Deletion Policy & Procedures – Review and update existing policy or draft new one if none exists. An auto-deletion programs for e-mail may be a good alternative depending on the volume of saved e-mail in the system. For a system with saved e-mail over 3 terabytes, the estimated cost just to back that up was $216,000 in 2006. In addition to this cost, the volume of this information could result in outrageously expensive screening for discovery production. An auto-deletion program familiar to the writer puts e-mail into a vault system, centrally located to allow for data to be searched for relevant terms and marked for litigation hold. The general rule is that it would delete e-mail after one year. Exceptions would be programmed. E-mails of certain users (e.g. senior corporate management) would not auto-delete for seven years. Things marked for litigation hold would not be deleted until legal hold is released.

- Distinguish between an archive, where data is intended to be available for access for business or regulatory reasons, and a back-up, which would only be used for disaster recovery
- Automated scheduled procedure for archive, backup and deletion from a IT perspective – on a schedule as appropriate for business and regulatory needs

- Need a procedure to identify what electronic business records should be archived (so this will coordinate with the record retention policy, above)
- Procedure for stopping auto-deletion for legal hold

Policy for electronic records of departing employees

- Generally, each employee is the record custodian for electronic records that are saved locally on the employee's workstation.
- When an employee leaves the firm, if there is an exit interview, ask if there are any issues that could become claims.
- Manager should review all material (paper and ESI) and decide if anything needs to be kept – and should provide documentation that the review was done and why information was/was not retained.
- IT should not reuse or destroy any data accounts or computers until they have the manager's documentation! (Some companies automatically reassign computers when someone leaves, which can destroy ESI that should have been preserved – and sanctions can easily follow.)

Litigation Hold Policy – preservation required when litigation is reasonably anticipated

- Clearly discuss both paper documents and ESI.
- Identify key players (individuals who would have relevant electronic data based on what we know about the claim), relevant dates. This will cut down on volume.
- Include procedures that explain how to serve notice (email and snail mail), what notice must include, how to monitor compliance, when reminders should be sent, lifting of hold. Address who is responsible for each task and when.
- Provide sample notice letter along with explanation of what needs to be included.
- Ideally, companies should have a database that tracks all litigation holds, when the hold started, who was notified, when reminders were sent and to whom, when the hold is lifted. For this to be practical, however, companies should have a specific list of people who can and do implement the holds. Each time a hold is needed, a consistent group of people should be notified (like IT) and the data must be maintained in one place, from notice, to logging, to monitoring, to lifting, so that it is available to legal when legal needs it.

Intranet and Website Maintenance and Data Retention Policy – this may be covered by the other policies or may require new policies

- Where corporate policies, procedures, Employee handbook, etc. are maintained on the intranet, companies need a policy that addresses
  - Archives of old versions when policies are updated,
  - How things are updated from a technology standpoint so that, when they're updated, data relevant to pending or potential litigation is preserved.
  - Who decides intranet content and how are these changes documented
  - Who decides what is deleted
  - Other issues specific to the industry, company, etc.
- Team sites (Sharepoint or similar programs) – if these are part of the companies' electronic content, they also require policies and procedures like the intranet

Electronic Records Management Systems – these are a good tool from a business perspective for handling accounting, contracts, work authorizations, and other business documents.

In addition to Policies, companies also need **procedures** for implementation of retention policies, including promulgation, education, monitoring, to show good faith effort to be consistent and to enforce the ERM plan.

IT Input to request

- Diagram/drawing of company's information technology structure so that the ERM team understands the scope of what's needed and so the team knows it's not missing anything. The team should understand:
    - Servers – what kind does the company have and where are they located. For example, companies that are larger than a handful of employees usually have separate servers for e-mail versus general data files that are shared across users. You may also have database servers for different systems that are in use – large accounting software usually has a dedicated server, for instance.
    - Workstations – how many are in the system, who is in control of these assets, what lock-down does the company use in terms of the data on the work stations, are any of them shared between employees, does your IT dept actively monitor the work stations, are there any "thin clients" in the system, etc.
    - Data Center – does your company use a data center or keep everything in a server room or something else entirely. What is included in them, who's in control of these assets, etc.
    - E-mail – what type of system do you use (POP3, exchange server, something else?), do you have auto-deletion, mailbox size rules, etc. that would affect the ability to retain information or that would change metadata automatically and should be shut down in the event of a litigation hold
- Does the company retain logs from web-conferencing, teleconferencing, instant messaging, etc. These may be retained by the vendor. The team should get a business decision as to whether the company wants these logs for any business reason and, if so, figure out how to get these from the vendor.
- Database Backup – Many companies have never deleted any of these. The ERM team should look at these and see what can be deleted, bearing in mind the three reasons to keep data:
    1. Business requirement
    2. Regulatory requirement
    3. Litigation requirement – Legal will need to review all pending litigation and claims where litigation is anticipated to ascertain what data needs to be preserved. Each counsel will have to do this for their pending cases. At a minimum, counsel will need a list of key players and a date range for each piece of pending litigation and circumstance where litigation is reasonably anticipated.

Glossary

Caveat: This is a work in progress. Definitions are non-technical descriptions I have written based on my understanding of the terms I've included from reading about and dealing with the subject of electronic data.

Accessibility – whether data is stored in a readily usable format and, therefore, easily retrieved

Active online data – information that is currently used; information in the most active stages of the electronic record's life; example: data on a computer hard drive is active online data

Archive – Records that can be retrieved (paper or electronic)

Backup Data – Data stored in a way to allow for disaster recovery. The data is often compressed and is not organized for retrieval of individual documents but rather are created in case a disaster requires reconstruction of the entire operating environment

BIT – Term derived from Binary digIT, it is the basic component of binary communication, which is a system of 1s and 0s

Blow Backs (also blowback) – The process of printing electronic documents back to paper (blowing them back to tangible form), thereby losing the associated metadata

Byte – Unit of electronic information consisting of eight bits

Cluster – (1) Unit of electronic information that the computer uses to access a certain number of bytes of information. Each operating system determines the size of the clusters it divides data into. (2) a group of servers and other resources that act as a single system

Deduplication (also DeDupe) – Removing duplicate electronic files from preservation results. From a technical perspective, this means removing literal duplicates with all the same metadata. From a lawyer's perspective, this can include deletion of duplicate documents on different machines where the document is the same except for the metadata, *e.g.* the same e-mail that is preserved in the sender's sent file and in multiple recipient's e-mail files. Some lawyers even use this term to refer to deletion of earlier parts of an e-mail string, leaving that only the last string which includes all the earlier messages. (This is really not what tech people mean and will drive them over the edge!)

Electronic Archive – Data that is stored in a manner that is intended to allow access to the records. Access speed can range from hours to days

Electronic Records Management (ERM) – Plan for handling business records in an electronic format, including computer-stored documents, spreadsheets, drawings, designs, schedules, confidential business plans, protected information (under HIPAA, Graham-Leach Bliley Act (GLBA), SarbOx, etc.) and other work product, including e-mail

Electronically Stored Information (ESI) – name used in legal circles for all information stored in computers. This term includes not only electronic records but all electronic information that is present on a corporate system.

Hash Values – process for authenticating a forensic copy of electronic data that uses complex algorithms. It is considered very reliable generally. (Some highly skilled technical types can break the algorithms and therefore do not like this method.)

Inaccessible – data that the court agrees is not accessible; May allow for cost-shifting if production is required. Inaccessible data must still be preserved if it contains relevant evidence that CANNOT be produced from an accessible form but can be deleted if it is duplicative

Key Player – Used in the legal hold context to describe someone who has potentially relevant electronic data

Latent Data – (also called ambient data) Deleted files, system generated data, and other data that is not readily accessible by users but can still be retrieved through forensic methods

Metadata – literally data about data, this term has been used to refer to electronic data about electronic documents, such as user data, modification dates, creation dates, and information of this type, which is easily viewed but also to refer to more technically detailed data, like which internet node handled e-mail traffic.

Near-line data – information stored on removable media configured to access speeds ranging from milliseconds to minutes. Example: data on a CD is near-line data

Offline Data – information that is stored in a manner that does not allow for quick access

Orphan Files – data on shared drives that has no owner or clear purpose

Presentation – Legal term for entering evidence into the trial record and giving it to the judge/jury

Preservation – Legal term for ensuring that potential evidence, both electronic and paper, are kept.

Production – Legal term for giving potential evidence to the other side in litigation

Retention Period – how long a record will be kept in the ordinary course of business. Litigation creates an exception to this rule.

Sectors – A partitioned area of a hard drive consisting of 512 bytes

Sedona Conference/Sedona Materials – a highly influential group established shortly after the turn of the century (2001 or 2002) to address, among other things, standards related to electronic data in the legal world including the Digital Millennium Copyright Act. Citation to the Sedona materials has strong credibility. Its website is www.sedonaconference.org and it's a 501(c)(3). The group describes itself as: "dedicated to the advancement of law and policy in the areas of antitrust law, complex litigation and intellectual property rights."

Slack Space – Literally, the difference between the end of the data in a file and the end of the last cluster. The slack space is where deleted information stays on computer hard drives until the computer overwrites it with active data

Volume – the amount of electronic records held by a company. This is usually measured in technology terms, like byte, megabyte, gigabyte, terabyte, etc. (Each of those examples is one thousand times larger than the word preceding it.) Kilo, mega, giga, tera, and peta are among the list of prefixes that are used to denote the quantity of something, such as, in computing and telecommunications, a byte or a bit. Sometimes called *prefix multipliers*, these prefixes are also used in electronics and physics. Each multiplier consists of a one-letter abbreviation and the prefix that it stands for. In communications, electronics, and physics, multipliers are defined in powers of 10 from 10^{-24} to 10^{24}, proceeding in increments of three orders of magnitude (10^3 or 1,000). In IT and data storage, multipliers are defined in powers of 2 from 2^{10} to 2^{80}, proceeding in increments of ten orders of magnitude (2^{10} or 1,024). These multipliers are denoted in the following table.

Prefix	Symbol(s)	Power of 10	Power of 2
yocto-	y	10^{-24} *	--
zepto-	z	10^{-21} *	--
atto-	a	10^{-18} *	--

femto-	f	10^{-15} *	--
pico-	p	10^{-12} *	--
nano-	n	10^{-9} *	--
micro-	μ	10^{-6} *	--
milli-	m	10^{-3} *	--
centi-	c	10^{-2} *	--
deci-	d	10^{-1} *	--
(none)	--	10^{0}	2^{0}
deka-	D	10^{1} *	--
hecto-	h	10^{2} *	--
kilo-	k or K **	10^{3}	2^{10}
mega-	M	10^{6}	2^{20}
giga-	G	10^{9}	2^{30}
tera-	T	10^{12}	2^{40}
peta-	P	10^{15}	2^{50}
exa-	E	10^{18}	2^{60}
zetta-	Z	10^{21}	2^{70}
yotta-	Y	10^{24}	2^{80}

"Flat World" Electronic Discovery: A Cyber-Tower of Babel?

KENNETH RASHBAUM, KEITH CASTO, STEPHEN WHETSTONE, AND MICHAEL SIMON

The speed and convenience of electronic communication have, in the words of the author Thomas Friedman, flattened the business world. The proverbial "back office" or "branch office" may now be situated thousands of miles from corporate headquarters. Technological advances often entail technology headaches, and the need to preserve and produce electronic data for regulatory or litigation purposes, from disparate countries and cultures and in different languages can induce a technology migraine. This article outlines the "condition" and offers suggestions for analgesic solutions.

> When the world starts to move from a primarily vertical value-creation model to an increasing horizontal creation model, it doesn't affect just how business gets done. It affects everything.
> - Thomas L. Friedman, *The World is Flat*, p. 201

Of course, business does not always "get done" – sometimes it goes wrong – and that leads to litigation or governmental investigatory proceedings. Those actions increasingly involve records spread about many countries, which must be identified, preserved, gathered, reviewed, and turned over to government agencies and corporate adversaries. And because nearly 99 percent of all documents created by

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businesses today exist in electronic form, litigation discovery requests are often more concerned with seeking data than paper copies. And as the outsourcing of U.S. jobs has led to the creation of offshore databases and data warehouses, much of the data sought is not written in English or even familiar "Latin" character sets.

While the outsourcing of jobs and data has significantly decreased ordinary business costs, it has given rise to serious new legal, cultural, and technical challenges. Even if data is not shared outside of a corporate enterprise, foreign local laws will have something to say about the *internal* transfer of data from abroad to the U.S. While the American legal system treats most information created, stored, or sent via corporate computers as the exclusive property of that company, much of the world thinks otherwise. For example, because human resource files typically contain a plethora of personal information they often are afforded special protection under many local privacy laws and the European Union's data privacy provisions.

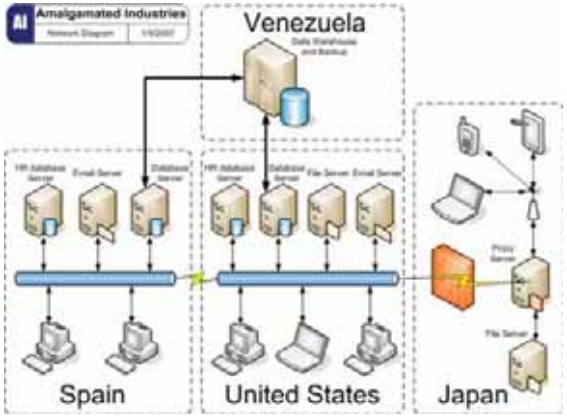
In contrast, the recent amendments to the U.S. Federal Rules of Civil Procedure put added pressure on U.S. companies to preserve and produce relevant data wherever it may reside. Similarly, U.S. government agencies usually have little tolerance for U.S. companies refusing to turn over data because of foreign privacy laws. Yet, unknowing breaches of local rules and regulations in pursuit of satisfying U.S. discovery or regulatory requests can lead to severe penalties, and even jail time. Ignorance of the law, whether in the U.S. or in some far-flung foreign land, is no excuse.

IT CAN HAPPEN TO YOU

> Using French-made airplane design software, the Russian engineers collaborate with their colleagues at Boeing America – in both Seattle and Wichita, Kansas – in computer-aided airplane designs.
> - Friedman, *The World is Flat*, p. 195

The following scenario demonstrates just how "flat" the corpo-

rate world has become. "Amalgamated Industries, Inc." is a fictitious Fortune 100 global corporation with corporate headquarters in the U.S. Amalgamated also has facilities in Tokyo and Madrid. Some of the data processing and hosting is done in Venezuela.



Amalgamated has a basic document management and retention policy. But, like many companies, compliance with these policies in its U.S. offices is far from perfect, and it is even more wanting in the satellite offices. Also like many other companies, Amalgamated does not have an established litigation preparedness policy or protocols; document preservation and collection occurs only on an *ad hoc* basis in response to a specific, perceived litigation threat.

The U.S. Department of Justice has just informed Amalgamated that

it is the subject of a formal investigation as a result of certain alleged conduct in its American, Japanese and Spanish offices. The preservation and collection of electronic files across the corporate enterprise for this investigation should be done with an eye toward the new FRCP requirements so that the efforts will withstand scrutiny in any eventual litigation filed in federal court. Thus, Amalgamated and its counsel need to take the right actions at the right time because they may get just one chance to prepare the right way for electronic discovery.

CROSS-BORDER LEGAL ISSUES

> Every morning in Africa a gazelle wakes up.
> It knows it must run faster than the fastest lion or be killed.
> Every morning a lion wakes up.
> It knows it must outrun the slowest gazelle or it will starve to death.
> It doesn't matter whether you are a lion or a gazelle.
> When the sun comes up, you better start running.
> - Friedman, The World Is Flat, p. 114 (quoting African proverb)

To stay alive in the ever-flatter world of international business, Amalgamated, like the gazelle and the lion, must know the international and legal landscape in which it must run to survive.

Production of data from Spain poses two significant obstacles: European Union Privacy Directives and Spanish privacy law. E.U. Directives 95/46/EC and 97/66 EC set forth the principle that personal data (data which identifies or concerns a named individual) cannot be transmitted outside the European Economic Area (the E.U. nations plus Iceland, Norway and Lichtenstein) to a country which does not provide, by national law, protection commensurate with the E.U. At present, the only non-E.U. countries which meet this standard are Canada and Argentina. Of course e-mail, the most desired of all electronic evidence, almost always contains the name and location of the author, and thus

qualifies as "personal data."

There are exceptions to this provision of the Directives, however. Data may be exported with the consent of the data subject (difficult to obtain and, in any event, certain countries consider consent sought by an employer to be *per se* involuntary), or an order of the court in which the data reside. In addition, personal data may be exported from the E.U. if the importing corporation has a Data Protection Agreement in place. This Agreement can take any of three forms: one which utilizes model contract clauses (which have been approved by all E.U. nations), a Safe Harbor agreement filed with the U.S. Department of Commerce, or a set of Binding Corporate rules. Each format requires that Amalgamated certify that its policies and practices protect personal data to the same extent as in the E.U.

Outside counsel for Amalgamated should undertake, as its first task, to ascertain whether the company has such an agreement in place. Amalgamated's data is routinely transferred to the United States for business purposes, and thus one would hope that the company's in-house counsel saw to it that the agreement was in place and current (the Safe Harbor Agreement requires re-certification to the Department of Commerce annually).

The inquiry does not end with the E.U. Privacy Directives, however. Each E.U. member nation must implement the Directives by enabling legislation, and these statues and regulations are often more exacting than the Directives themselves. In Spain, the enabling legislation, Organic Law 15/1999, defines personal data as "any information relating to an identified or identifiable natural person," and reiterates the provisions of the E.U. Directives. In addition, there are other provisions of Spanish law which restrict the use and disclosure of personal data by such means as requiring warrants or court orders to search an individual's computer without the individual's consent.

Japan poses a different and highly complex challenge. Its Personal Information Protection Act ("PIPA") also defines "personal data" broadly, comprising: name, date of birth, or other description which, when

easily compared with other individuals, can identify specific individuals." Data may be shared with third parties on a consent, or "opt-out" basis, pursuant to Article 23, paragraph 2, but only if the individual is provided with notice of the purpose of use of the data, the contents of the data, and that the provision of the data will cease upon the request of the individual (a principle, as we shall see below, that is followed in certain Latin American countries).

In Japan, delegation, or outsourcing of data processing services is permissible and service vendors may transfer data without consent, so long as they enter into an agreement with the data importer to protect the data. There are strict guidelines for such agreements, and it is worth noting, with some alarm, that eleven different ministries share responsibility for administering PIPA. Violations of PIPA may result in a fine of up to 300,000 yen (approximately $2,500) or imprisonment for up to six months.

As if this cyber-Tower of Babel were not perplexing enough, more compliance headaches await Amalgamated when it crosses the Pacific Ocean from Japan to Venezuela. The principle of "Habeas Data" is followed in Venezuela; that is, the individual may ask that the data on himself or herself be produced. Article 28 of the 1999 Constitution states that "any person has the right to access the information or data over himself. . . as well as learn of its use and purpose and to request. . . its update, correction or destruction if erroneous or were to illegitimately affect their rights," subject to certain exceptions.

Clearly, Venezuelan laws place severe restrictions on access to and disclosure of data. Violations of these provisions and other privacy laws, including use or disclosure of personal data without consent are punishable by fines and imprisonment. To illustrate, Petroleos de Venezuela, S.A., the national oil agency that dominates Venezuela's oil production and is the fifth-largest oil producer in the world, in the matter of *Lyondell-Citgo Refining, P.P. v. Petroleos de Venezuela, S.A.*, endured an adverse inference instruction at trial rather than disclose its board of directors minutes and related documents and risk running afoul of Venezuela's Special Law Against Information Systems Crimes.

TECHNICAL AND PRACTICAL ISSUES

> You can flourish in this flat world, but it does take the right imagination and the right motivation.
> - Friedman, *The World is Flat*, p. 469

All electronic discovery work shares common attributes, regardless of the country, culture, or language in which the work is done. For example, in every electronic discovery project, someone must locate and collect documents from various storage media, such as laptops, desktops, central servers, backup tapes and system archives. Before collection can even begin, someone must carefully consider the scope of the document request, map the company network, and identify pertinent programs and key custodians.

But there are also key differences between data preservation and collection efforts in the U.S. and abroad. The scope of permissible discovery in the U.S. is very broad. By contrast, in most foreign jurisdictions there is far less discovery of information prior to trial or hearing. As a result, foreign businesses, as a rule, are not as accustomed to or driven by discovery concerns.

In addition, the practical challenges of gathering data that resides thousands of miles away from U.S. offices can be daunting. Much has been made of the recent failures of Phillip Morris, Merrill Lynch, Unum Provident, and dozens of other leading U.S. companies to preserve and produce relevant data located entirely within the U.S. in response to government investigations and private litigation. The decisions in such matters can read like a "Keystone Cops" script: Outside counsel, in-house lawyers, IT teams and vendors all scramble about and trip over one another while the target of the pursuit (in this story, the data) slips through their fingers. The plot, however, can become much thicker when the target data is spread about in multiple offices in multiple countries and in multiple languages.

Even if the local privacy laws are understood and a foolproof game plan has been put in place for gathering data, unanticipated technical challenges can still botch the effort. Local settings, such as the foreign

language page settings on computers, should be noted and preserved so that the alpha characters can be accurately captured and displayed. Extraction tools and container files (such as .pst files for Microsoft Outlook email) must match up with the foreign language programs – U.S. tools and container file programs often cannot capture all foreign data. Data collection teams should map the types of computer systems and programs at issue prior to their departure from the U.S. so they arrive with the right tools in hand.

Documents collected in Amalgamated's Madrid offices likely will contain large volumes of Spanish and English. Amalgamated therefore will need translators - or some type of machine translation software backed by human translators – to make sense of its collection. Evidentiary documents will need certified translations, which take even more time and are far more costly. In addition, although Spanish, like English, uses the Latin-A character set, some characters are unique to Spanish, such as "~" and "¿." Unless properly trained, American reviewers may overlook these unique characters or fail to use the proper keyboard or keyboard emulation software required to capture them.

Also, Amalgamated's management team in Madrid may be less concerned about U.S. legal deadlines than their American peers and, thus, less diligent in collecting the necessary documents. There also may be particular technical issues associated with gathering the Spanish data. European businesses increasingly are turning to open source systems, including Linux, to avoid the costs, security problems, and potential privacy issues associated with commercial software. Ironically, Microsoft itself was fined the equivalent of $60,000 by Spanish data protection authorities in 1999 for transferring personal data of Spanish consumers to the U.S. without proper disclosures. Thus, Amalgamated's data collectors will need to be on the look out for these open source documents, as the standard approaches for capturing Microsoft documents, particularly Outlook email, will miss them.

To a degree that is hard to comprehend in the U.S., honor, social hierarchy, and avoiding offense are powerful factors in the Japanese workplace. Thus, Amalgamated may need to handle its Tokyo collection

with greater discretion and adopt procedures that rely on the goodwill and direct efforts of the data custodians and other non-legal personnel. If foreign data collectors are not involved, Amalgamated's attorneys must clearly communicate the types of documents sought and work hard to ensure that the field level personnel are properly trained to preserve and collect them. U.S. regulatory agencies and courts will not excuse a rigorous data collection merely to facilitate Amalgamated's deferential treatment of its Japanese personnel.

Amalgamated will also need to deal with some technical issues peculiar to Japanese language. Japanese written language uses three different, intimately connected, character sets, all of which can co-exist within a single document. Unless Amalgamated is careful and accounts for this "triple encoding" during its collection efforts it could wind up with documents that do not display all character sets. In addition, because most Japanese characters are "double-byte" – that is one character inhabits two bytes of space within a document -- Amalgamated can lose basic, but critical metadata, such as file names, unless certain prophylactic steps are taken during collection. Even if the data is properly captured and processed, Amalgamated and its attorneys need to consider that the Japanese language typically has word breaks only at the start and end of a sentence, which affects search and machine translation.

As in Spain, documents collected by Amalgamated in Venezuela likely will contain both Spanish and English. Still, Amalgamated cannot blindly rely upon the same translators or techniques for making sense out of both data sets. Different Spanish cultures have different idioms, phrases and, on occasion, even different words, to describe the same object or concept. For example, in Madrid, a computer is referred to as an "ordenador," while in Caracas it is called a "computadora." Amalgamated's translators and translation software will need to understand these subtle culture differences and adjust their efforts accordingly.

Amalgamated may face even further technical challenges in Venezuela. Latin American countries are also embracing open source technologies to avoid rising commercial software costs – far more so than in the U.S. or even Europe. Venezuela, with its increasing anti-capitalist rhetoric is leading this movement. Pursuant to a recent presidential decree, Venezuela's government and public entities have two years from January 2006 to convert fully to open source software systems. While this decree does not directly affect private businesses, Venezuela is nationalizing many of its major industries, including the oil and gas, electric, and telecommunications industries. As many of Venezuela's major industries convert to open source, many other private businesses may follow suit. Local self-reliance is an overriding theme of this nationalization movement, and so Venezuela's open source scheme may soon differ from other such systems around the world. As a result, if the U.S. investigation extends out over a period of time, Amalgamated may need to hire local consultants familiar with these technological structural shifts to help ensure that all of its data is correctly preserved and collected.

Getting the job done right and on time in just one of these countries would be a formidable challenge. But, coordinating Amalgamated's combined efforts requires steady and experienced legal and technical hands to ensure that the disparate and competing local requirements are harmonized with the demands of U.S. law.

CONCLUSION

Every day the world grows flatter, as companies and their information systems flow across blurred transnational boundaries. In the wake of the recent federal rules changes and more rigorous U.S. government pursuit of electronic data, companies, and their legal counsel can no longer risk hiding behind these fading boundary lines or their own technical deficiencies. Rather, they must confront head-on the various legal, cultural and technical changes and challenges so they can capture and preserve all pertinent electronic data, wherever it may reside.

MEALEY'S™ LITIGATION REPORT
Discovery

E-Discovery Challenges Are Communications Opportunities: Goals For Corporations And Counsel In 2008

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A commentary article reprinted from the March 2008 issue of Mealey's Litigation Report: Discovery

Commentary

E-Discovery Challenges Are Communications Opportunities: Goals For Corporations And Counsel In 2008

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In e-Discovery, disasters currently dominate the news headlines. Rapid, almost astonishing, advances in technology have led to an e-Discovery panic as companies scramble to conform their mushrooming data stores and retention programs with last year's expansive amendments to the Federal Rules of Civil Procedure (FRCP).

With most disasters, litigation and communications strategies tend to proceed along parallel, but separate paths. Following a calamity — such as product recall, plant explosion or train wreck — the legal and communications teams pursue and protect client interests in both courts of law and the court of public opinion. Today, however, *the courtroom itself* is often the scene of the train wreck when companies fail to preserve and produce relevant electronically stored information (ESI).

Companies must therefore tackle e-Discovery challenges, not just because of the potential legal ramifications, but to preserve their corporate brands as well. Some firms have even taken a crucial next step to enhance their brands by showcasing their facility with advanced technologies and methods in order to meet, and beat, the new e-Discovery challenges.

E-Discovery In The Spotlight

Many companies have made headlines in recent years because of their struggles over how to manage large volumes of electronic data in legal matters. Morgan Stanley garnered front-page coverage in 2005 when it lost a $1.45 billion verdict after a Florida state court judge instructed the jury it could presume that a large volume of missing email, if produced in the proceedings, would have supported the plaintiff's claims against the company. To reach its finding, the court looked beyond the immediate proceedings and also relied on an earlier SEC order that imposed monetary sanctions on Morgan Stanley and several other broker-dealers for failing to preserve business records. So, while other financial services companies also were forced to confront the harsh new digital reality, Morgan Stanley found itself in the unenviable position of having its past travails revisited in this large, private suit.

Although the appeals court reversed the state court verdict in 2007, the public relations damage had been done. The state court decision also forced Morgan Stanley to fend off a rash of other legal and communications challenges, including additional regulatory fines and private plaintiff law suits, all a result of its mishandling electronic data.

Recently, Qualcomm made headlines because it, too, failed to turn over relevant electronic evidence in a high-stakes patent lawsuit against rival Broadcom. Unlike Morgan Stanley, which had been grappling with e-Discovery challenges for a couple of years, Qualcomm's troubles began on the last day of trial when *its own witness* surprisingly testified that several emails on a key issue had never been turned over.

Hearing that, the jury entered a verdict for Broadcom, and the judge ordered Qualcomm to conduct additional document searches, which led to the discovery and production of more than *200,000 additional pages* of ESI. The judge then found that Qualcomm and its lawyers had engaged in "aggravated litigation abuse" and ordered Qualcomm to pay nearly $10 million in Broadcom's legal fees. The company general counsel at first stated to the press that the verdict was "all upside, no downside" for Qualcomm, yet, shortly after that public pronouncement, he resigned, citing "personal reasons."

The court also initiated proceedings against Qualcomm outside counsel. The reviewing magistrate found six outside attorneys "assisted Qualcomm in committing this incredible discovery violation" and referred them to the State Bar of California for further investigation into potential ethical violations.

The Morgan Stanley and Qualcomm cases are wake-up calls to the business world about new risks posed in the electronic age, not just to the potential outcome of a single case, but to hard-earned, valuable corporate reputations. But, in 2007, those two companies were hardly alone:

- In an antitrust battle against AMD, Intel admitted in court that it had "lost track" of hundreds of employees and forgotten to send them mandatory ESI preservation notices. Since that startling admission, Intel has spent millions of dollars to remedy the errors and is still not out of the woods — which likely means continued poor publicity.

- The antitrust investigation of Whole Food's deal to buy rival Wild Oats revealed communications by the Whole Foods CEO to board members describing how the deal would eliminate competition in key markets. Documents later produced also showed the CEO had for years anonymously posted messages on the Yahoo stock forum for Whole Foods about both his company's and his own performance.

- While many of the investigations and lawsuits in the 2007 options backdating scandal are ongoing, some embarrassing communications already have surfaced. In one criminal matter, the head of human resources at Brocade Communications Systems pleaded guilty to obstructing justice after she responded to a subordinate's email, which questioned the proprietary of backdating new hire dates, by instructing her to "pls. delete this message."

Corporations that have been fortunate enough to avoid the e-Discovery spotlight are in a prime position to establish a leadership brand in the space. They have a golden opportunity, on the investor relations and public relations fronts, to stand out for heeding the new legal discovery rules both in word and deed.

For law firms, there is also a potential marketing bonanza. If professional services marketing is about identifying what keeps clients awake at night, there can be no better litigation marketing opportunity than to communicate a superior understanding of potential e-Discovery pitfalls and how to avoid them. Countless lawyers are writing articles and pursuing a variety of promotional initiatives in this area. Establishing real credibility in the e-Discovery arena, however, requires hard work and a clear institutional commitment. A few major law firms have made that top down commitment and are building strong brands on the position that they can handle these complex problems. The firms that lag behind, however, may fast find themselves left behind, permanently.

Challenges Equal Opportunities

To be sure, the fact that today's discovery environment is anxiety-riddled means whoever steps up to the plate soon enough, and persuasively enough, will secure a permanent communications and marketing advantage — and cast themselves in an enviable hero's role.

Consider the dynamics roiling the discovery environment. The original FRCP were not designed with e-Discovery in mind when first written decades ago. As technology evolved, judges were forced to deal with e-Discovery in *ad hoc* and often inconsistent ways. While the Dec. 1, 2006, e-Discovery amendments solved many issues, it is hardly surprising that critical challenges remain, presenting opportunities for corporations and counselors to differentiate themselves as key problem-solvers in 2008.

Here are four of the biggest e-Discovery mountains to climb in 2008 and beyond . . .

1. What To Save?

New Rule 26(b) requires litigants to turn over only "accessible" ESI. The rules, however, neither define "accessible" nor provide meaningful examples of accessible data types. Predictions that everything from automobile "black boxes" to copy-machine hard drives would become discoverable have largely proved errant. But in one high-profile case, Columbia Pictures v. Bunnell (No. 06-1093, C.D. Calif.; 2007 U.S. Dist. LEXIS 46364 [May 29, 2007]), a court required the production of ESI kept on a computer's random access memory (RAM), raising the specter that the much-feared "weapons of mass discovery" were now upon us.

While RAM is typically considered a temporary medium, the judge in Bunnell ordered it preserved because it was the only way to obtain key evidence of alleged copyright infringement on a website that promoted searches for pirated movie copies. For that reason, Bunnell has been an outlier with little legal effect. On the other hand, the case has had great public influence and caused companies to worry how they can predict or plan for when the next court will require the preservation of such fleeting ESI.

Of course, general counsel cannot possibly know how a court will rule, or even what issues it will be asked to rule upon, months or years in advance. So, should corporations then save everything? The answer is a resounding "*no*." Just as they did before the advent of e-Discovery, companies must preserve only what they reasonably know, or should know, is relevant or potentially relevant in litigation and the duty to preserve arises only when litigation is "reasonably anticipated." But, recognizing that critical moment in time is difficult. While notice of a legal complaint, subpoena or government investigation are clear trigger events, the receipt of a customer claim, employee complaint, or business demand letter are murky.

Companies can show leadership by carefully crafting a comprehensive document management (a/k/a retention or destruction) policy. Absent reasonable anticipation of litigation or some other legal duty (such as an IRS regulation, SEC rule, or the like) companies are free to keep or destroy whatever information they want. But, because many companies are never wholly free of litigation, and out from under the reach of the duty to preserve, they should isolate anyone involved in a simmering legal dispute from the decision-making process and, if necessary, set the "go live" date for the plan several months out to negate any inference it was intended to get rid of potentially harmful information in the dispute. At bottom, the objective is to avoid appearing to "game the system." The plan also should set forth its business rationale so, if necessary, it can be justified in court. And, the plan should anticipate what is to happen to company information if the duty to preserve triggers, identify who will distribute and follow up on the "litigation hold" notice, and make certain that IT knows that routine document destruction procedures and systems must be immediately suspended.

2. Controlling Costs

Most lawyers' visceral response to rising ESI volumes is to rely on manual or keyword search to reduce the data universe and hunt for key documents. Review rates using these first generation review systems, however, are very slow, at as low as 30 documents reviewed per attorney per hour. To review 100 gigabytes of data using these stale approaches would cost approximately $10 million, assuming an average attorney billing rate of $200 per hour. Perhaps even more painful, traditional search-based systems present substantial risks; while attorneys may want to believe that the combination of manual review and search can achieve a near perfect "gold standard" of accuracy, research has shown they are only between 20 percent to 50 percent effective at finding all relevant information.

Fortunately, new advanced "concept organization" systems address many of the limitations of traditional review. Instead of conjuring up an endless list of search terms — and all of their synonyms, acronyms, and misspellings — to identify potentially relevant documents, concept organization technology accepts ESI as it exists within each corporation and automatically organizes it into discrete subject matter folders based on its similarity to other information. As a result, reviewers can achieve review rates many times faster than possible using limited search-based systems and, in so doing, shave millions of dollars off the price tag of a100-gigabyte matter.

Advanced systems also promote greater accuracy by grouping identical and near-identical documents together. Reviewers forced to shift between documents on different subjects and different types will, according to recent studies, miss as many relevant documents as they find. Thus, a law firm's choice about *which* technology to use is every bit as important as the decision to use technology at all. Several recent high-profile decisions, such as PSEG Power New York Inc. v. Alberici Constructors Inc. (No. 05-657, N.D. N.Y.; 2007 U.S. Dist. LEXIS 66767 [Sept. 7, 2007]), Amersham Biosciences Corp. v. PerkinElmer Inc. (No. 03-4901, D. N.J.; 2007 U.S. Dist. LEXIS 6841 [Jan. 31, 2007]) and Newby v. Enron (No. 01-3624, S.D. Texas) reveal what happens when law firms rely on old technologies to handle today's modern technology challenges. For law firms, e-Discovery leadership therefore begins with technology and a demonstrated willingness to make the right investments.

3. The Privilege Problem

E-Discovery also places tremendous strain on the attorney-client privilege. More data means more risk of inadvertent disclosure and, therefore, more time and money spent to review ESI to preserve the privilege. Over half the general counsel surveyed in the 2007 Fulbright & Jaworski Fourth Annual Litigation Trends Survey reported that privilege review consumed at least 5 percent of their total litigation budgets. Nearly one in five general counsel stated it was as high as *30 percent to 50 percent*!

While the new Rule 26(b)(5) contains a procedural "claw back" provision for the return of inadvertently produced privileged documents, it does not alter the substantive law itself. Thus, whether the privilege has been waived will turn on the unique facts and circumstances in each case and the particular substantive privilege standards that govern in each jurisdiction. To compound matters and risk, some jurisdictions will extend waiver to all documents that are related to the same *subject* of the inadvertently produced files, even if they themselves were properly withheld.

Fortunately, some relief may soon be had. The Senate is considering a bill, S 2450, that would enact amendments to Federal Rule of Evidence (FRE) 502 that change much of the substantive law of privilege. Proposed FRE 502 would eliminate subject-matter waiver for any inadvertent waiver of privilege in federal actions. It also would allow a judge to incorporate litigants' privilege protection agreements into a court order, and enforce that order against all parties in the case, whether they signed the original agreement or not. Finally, the proposed amendments would establish a uniform substantive waiver standard in all federal litigation.

Unfortunately, it is hard to know if or when Congress will pass the amendments to FRE 502. In the meantime, companies and law firms can show leadership in this space by lobbying for their enactment and, at the same time, by assessing the relative costs of poring through all potentially privileged documents in a matter against the often extraordinary costs of doing so and the likelihood that waiver would be found if some privileged documents were produced.

Another fundamental leadership strategy on the privilege front is to use advanced technology not only to lower the costs of review, but also to increase accuracy and dramatically reduce the chance of inadvertent disclosures that can lead to waiver. The drafters of the FRE 502 amendments themselves encouraged this tack in the Advisory Committee Notes that will guide judges:

> "Depending on the circumstances, a party that uses advanced analytical software application and linguistic tools in screening for privilege and work product may be found to have taken 'reasonable steps' to prevent inadvertent disclosure."

Considering that older, search-based systems have been proven to be as high as 80 percent ***inaccurate***, companies that rely upon such obsolete technology to identify privileged documents could find themselves pleading upon deaf ears when they claim they took "reasonable steps." Thus, a company's ability to preserve privilege after an inadvertent disclosure may well depend on whether they heeded the Advisory Committee and used the kinds of advanced technologies that the Committee recommends.

4. Global Reach

Litigation increasingly involves data spread throughout many countries. The U.S. legal system treats most information on corporate computers as the exclusive property of the company, but much of the world thinks otherwise — and the laws reflect the difference.

For example, human resource files are given special protection under the European Union data privacy provisions so that even transfers *within* the company to the U.S. could violate EU laws. Companies may be concerned about transferring foreign-based data into the U.S. in a private matter if it could be subject to a U.S. government subpoena in other matters.

Moreover, companies must increasingly contend with the technical challenges of foreign language data that takes special expertise to collect and process without losing content and metadata. There may be cultural differences as well, since lawsuits are rare in many countries and culturally discouraged — with minimal or even no discovery allowed. As a result, foreign employees may not have the same experience with data preservation and collection as those living in the "litigation culture" of the U.S.

Companies with international ties become international leaders when they work to develop the in-house expertise needed to resolve these technical and cultural issues. There is also an opportunity here for law firms to create a strong brand, not just as premier e-Discovery advisors, but as counselors attuned to the global nuances involved.

Demonstrable Leadership

Despite the litany of well-publicized corporate horror stories — of how deficiencies in e-Discovery practice have haunted major global businesses in and out of court — there is still good news; some companies already are taking the kind of steps that present real leadership opportunities and enrich their global brands. For example:

- Pfizer has developed an in-house team of expert attorneys and IT personnel to handle e-Discovery projects internally. Pfizer also has been a highly visible thought leader with team members speaking at e-Discovery educational events across the country.

- DuPont is well-known, not only for internalizing legal work, but also for sending work offshore as well. As a corporate model for cost savings, the well-known "DuPont model" can pay further dividends in ensuring better e-Discovery resources and more specific e-Discovery expertise.

- Cisco has been highly vocal about the need for outside counsel to develop a new relationship with their company clients and for law firms to use technology to drive down costs. Cisco's general counsel has delivered highly-publicized keynote speeches on the need for law firms to develop greater and continual efficiencies that, among other benefits, should encourage better e-Discovery at lower costs.

As companies develop better e-Discovery tools, they confirm their leadership positions by also using the tools of the communications trade to spread the good news. For example:

- Technology itself can be used to communicate the successes that define e-Discovery leadership. Litigants who have mastered the challenges of ESI management can even launch, promote, and optimize their own "high-authority" blogs on the subject.

- Advance guard companies and law firms can continue to work within the professional groups that address ongoing e-Discovery problems and solutions, such as the Sedona Conference and EDRM — or even establish their own think tanks staffed with diverse experts, including corporate counsel, e-Discovery providers, law professors and judges, as well as their own lawyers.

- "Branded resources" like surveys, trend-identifying indices, etc. underscore thought leadership.

For instance, Fulbright & Jaworski's survey is an example of how a law firm can identify itself as part of the solution to a problem simply by taking the initiative to publicly study it.

- Maintaining close relationships with trade press journalists and beat reporters covering all sides of the issue is important for corporate positioning. You do not need to have an immediate news story in mind as an excuse to have lunch with the legal tech reporter at American Lawyer magazine or other key industry publication. The goal is to develop a relationship and become his or her go-to source so you are referenced in key articles on bigger trends and also get the chance to tell your side of the story if the article is about your company.

At the same time, companies that suffer unwanted attention as a result of document-related litigation disasters can implement reputation recovery plans. Setbacks do not preclude future leadership opportunities. To the contrary, the public expects companies to learn from their mistakes. The more companies learn, and the more openly and aggressively they itemize the steps being taken to prevent future mistakes, the more they transform a crisis situation into a marketing opportunity.

To that end, a corporate e-Discovery team should be modeled along the lines of what Pfizer and DuPont have done and should include corporate communications as well as legal, IR and IT experts. The team itself can be an active participant in the profession-wide discussion — again, branding itself as part of the solution, not part of the problem, regardless of past mishaps in highly-publicized cases.

Observing some of the e-Discovery debacles in the last couple of years, it is natural to assume e-Discovery is all about avoiding disaster, and only that. Yet, we already have seen corporations and law firms distinguish themselves by deploying technology to solve the problems that technology causes. Once the smoke clears, their brands and reputations are only stronger for the effort.

Some reputations are being damaged in this arena. Others are being made. ■

Matter Management and E-Billing
Questions You Should Ask Your Potential Vendors

- Describe your Matter Management/E-Billing system and how it works.
- Please describe any initial and ongoing training. What, if any, cost is associated with training?
- What, if any, charges are assessed for outside counsel/law firms using the application for matter management, e-billing and/or collaboration?
- Can your Matter Management/E-Billing system integrate with other systems (e.g., Accounts Payable, matter management systems)? If so, which ones? Is there an extra charge for this service?
- Can you provide an XML feed for matter and e-billing data? How does it work and what data can be transferred using XML?
- Can you convert/migrate data from existing products/services?
- Describe your reporting capabilities.
- Provide 3 references for your product.
- What other add-on functional components are available? Briefly describe each.
- What do you consider the 5 most important features of your product and why?
- What budgeting functionality is included with your e-billing system?
- Is your product software or ASP based?
- Where is data stored? Client servers or vendor servers?
- What types of documents can be stored on your product?
- What is the size limit for data/document storage?
- Describe your security policies and procedures supporting your application?
- How often do you have product releases with enhancements and/or bug fixes? Please provide a documentation describing a recent product release.
- Describe what email integration capabilities your product has. Can you integrate with Outlook and/or Lotus Notes?
- Is your product searchable? How does the search functionality work?
- What is your pricing structure based on? Licenses? Flat fee? Number of users? Storage? Other?
- Describe the implementation process for your product.

ACC Resources

Electronic Billing for the Small Law Departments, November 13, 2007 (webcast transcript), http://www.acc.com/resource/getfile.php?id=9542&title=Electronic+Billing+for+the+Small+Law+Departments&author=Steven+Gray+and+James+D.+Sheets&year=2007&materialtype=Transcript&keywordlist=Electronic+Communication%2FE-mail%2CSmall+Law+Departments&doc=true

Electronic Billing Enters the Mainstream: How to Ensure a Successful Launch for Your Law Department, *ACC Docket* (May 2006), http://www.acc.com/resource/getfile.php?id=7173&title=Electronic+Billing+Enters+the+Mainstream%3A+How+to+Ensure+a+Successful Launch+for+Your+Law+Department&author=Rick+Lavers%2C+James+Sheets%2C+and+Rob+Thomas&year=2006&materialtype=ACC+Docket+Article&keywordlist=Billing+Arrangements%2CE-Commerce%2CLaw+Department+Administration%2COutside+Counsel+Management&doc=true

Controlling Outside Costs Through an Alternative Billing Model, *ACC Docket* (May 2008), http://www.acc.com/resource/getfile.php?id=9726&title=Controlling+Outside+Costs+Through+an+Alternative+Billing+Model&author=Mark+Wolf+and+Kerry+Notestine&year=2008&materialtype=ACC+Docket+Article&keywordlist=Billing+Arrangements%2CCareer+Development%2COutside+Counsel+Management&doc=true

Effectively Managing Outside Counsel & Associated Costs, 2007 Canadian CCU, http://www.acc.com/resource/getfile.php?id=8988&title=109+Effectively+Managing+Outside+Counsel+%26+Associated+Costs&author=&year=2007&materialtype=Program+Material&keywordlist=Outside+Counsel+Management&doc=true

2007 ACC Chief Legal Officer Survey Results, http://www.acc.com/resource/getfile.php?id=9690&title=2007+Association+of+Corporate+Counsel+Chief+Legal+Officer+Survey&author=&year=2008&materialtype=Surveys&keywordlist=Career+Development%2CDepartment+Personnel%2FPolicy+Issues%2CLaw+Department+Administration%2COutside+Counsel+Management%2CSmall+Law+Departments&doc=true

2006 ACC Chief Legal Officer Survey, http://www.acc.com/resource/getfile.php?id=7882&title=2006+Association+of+Corporate+Counsel+Chief+Legal+Officer+Survey+&author=&year=2006&materialtype=Surveys&keywordlist=Outside+Counsel+Management&doc=true

2008 Technology Primer InfoPak
http://www.acc.com/protected/infopaks/tech/infopak.pdf

2008 Strategic Implementation of Law Department Technologies
http://www.acc.com/resource/getfile.php?id=9881&title=+Strategic+Implementation+of+Law+Department+Technologies+%28Management+Report%29&author=&year=2008&materialtype=Article&keywordlist=Billing+Arrangements%2CCompliance+%26+Ethics%2CLaw+Department+Administration%2CTechnology&doc=true

SNIA Education

COMPLIANCE PRACTICES: The risks of retention and deletion in the face of FRCP

Michael Peterson, Strategic Research Corp.
and Chief Strategy Advocate for the SNIA's Data Management Forum

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About the SNIA DMF

This tutorial has been developed, reviewed and approved by members of the Data Management Forum (DMF)

- The DMF is an industry resource to those responsible for the accessibility and integrity of their organization's information
- The DMF focuses on the technologies and trends related to Data Protection, ILM and Long-term digital information retention

DMF Workgroups:		
Data Protection Initiative (DPI)	Information Lifecycle Management Initiative (ILMI)	Long-term Archive and Compliance Storage Initiative (LTACSI)
Defining best practices for data protection and recovery technologies such as Backup, CDP, Data deduplication and VTL	Developing, educating and promoting ILM practices, implementation methods, and benefits	Addressing the challenges of retaining, securing, and preserving digital information for the long-term

A Question?

- How can you DRAMATICALLY reduce costs (hardware, software outside counsel, professional services, discovery, management, etc.) and risks, while improving regulatory compliance and the outcomes of your litigation without spending more money?

Abstract

- Compliance Practices:
  The risks of retention and deletion in the face of the legal challenges catalyzed by the new amendments to the Federal Rules of Civil Procedures (FRCP)
  - This presentation will update you on current requirements and best practices and how they affect the management of your storage resources and information assets.
    - Can you really ever delete anything or do you have to keep it all forever?
    - If you can delete, then what and how?
    - What best practices can SNIA recommend?

Federal Rules of Civil Procedure

- Amendments to FRCP: December 2006
  - Redefined discovery procedures to include all information and data regardless of location or media
  - Establishes a clear obligation to preserve, disclose and produce all relevant electronically stored information, ESI.
  - Gives the court power to enforce and penalize failures to disclose
    - Defines Spoliation as destruction, alteration, or failure to preserve evidence in pending or foreseeable litigation
  - Creates litigation 'hold' requirements
    - When an organization has "reason to believe that a claim or lawsuit might occur" it must take steps to preserve all relevant information and data

Amendments to FRCP

- Rule 16(b)(5)& (6): Pretrial Conferences; Scheduling; Management
- Rule 26(a): General Provisions Governing Discovery; Duty of Disclosure; Required Disclosures; Methods to Discover Additional Matter
- Rule 26(b)(2)(B): General Provisions Governing Discovery; Duty of Disclosure; Discovery Scope and Limits; Limitations
- Rule 26(b)(5)(B): General Provisions Governing Discovery; Duty of Disclosure; Discovery Scope and Limits; Claims of Privilege or Protection of Trial-Preparation Materials; Information Produced
- Rule 26(f)(3) & (4): General Provisions Governing Discovery; Duty of Disclosure; Conference of Parties; Planning for Discovery
- Rule 33(d): Interrogatories to Parties; Option to Produce Business Records
- Rule 34(a) & (b): Production of Documents, Electronically Stored Information, and Things and Entry Upon Land for Inspection and Other Purposes
- Rule 37(f): Failure to Make Disclosures or Cooperate in Discovery; Sanctions; Electronically Stored Information

Example - Rule 26(a)(1)(B)

- Mandates that attorneys know their clients' information management infrastructure
- To comply with amended rule 26(a)(1)(B), lawyers must on their own initiative, without awaiting a discovery request, provide to other parties a copy of, or description by category and location of, electronically stored information that is potentially responsive
  - You must identify all sources of:
    - On-line, near-line, or off-line information and data

Not just FRCP

- SEC 17- specifies retention, authenticity, discovery, security, DR with penalties for noncompliance
- HIPAA - requires security, privacy, authenticity, retention with penalties for noncompliance
- SOX - penalties for knowingly altering, concealing, or destroying information relative to an investigation
- Gramm-Leach-Bliley Act - protect PII* confidentiality and authenticity with penalties for noncompliance
- CFR - requires preservation, authenticity, retention, protection, availability

* PII - personally identifiable information

And There are More!

- New Proposed Evidence Rule 502
  - Waiver of privilege & work product protection
- The Stored Communications Act
  - Potential Catch-22 by prohibiting disclosure of communications by "service providers" to the extent they offer either a "communications service" or "remote computing service."
- Legal precedents
  - Information Retrieval (e.g., Keyword Searching)
    - See, e.g., United States v. O'Keefe, Equity Analytics, LLC v. Lundin and Victor Stanley v Creative Pipe

We're Still Playing 'Catch-up'

- Most companies are still not prepared
  - "94% of Businesses Not Prepared for FRCP" (*iTracks* survey 2/07)
  - "44% of organizations do not include electronic records as part of their legal holds" - (ARMA study, 2007)
  - "20% of businesses have settled a lawsuit just to avoid the cost of discovery" - (*iTracks* survey Nov. 2007)
- Rising Volume of fines & adverse judgements
  - U.S. Companies >$1B, avg. 556 open legal cases and receive 50 new cases per year (Source: Source: Fulbright & Jaworski LLP 11/06)
    - Discovery of ESI now the standard practice
    - ESI places companies at growing risk

What is the Problem?

"There is no way to overstate the potential size of the problems associated with owning and administrating information under the threat of legal discovery in terms of liability, cost, or risk.

These are not just technology, business, or legal problems. The core problem lies today in each organization's failure to implement appropriate processes to manage and control information as an asset and a risk throughout its lifecycle.

Unless organization's balance business, technical, and legal interests to develop unified information-centric management practices, the 'best practices' in use by all parties will continue to do harm. "

Source: Michael Peterson, Strategic Research Corp.
David Baumann, TechNexxus

It is Not Just a Technology Problem

Sedona Principles - "Commentary on ESI Evidence & Admissibility"

- *"First, and most important, the act of storing the information does not establish authenticity; the validity of the information depends on the process that placed it there.*
- *Second, there are various types of systems and media available, all with differing characteristics on how securely they store the data initially, whether and under what circumstances they permit its manipulation or deletion, and what evidence or logging is left behind to show that such changes occurred.*
- *Finally, these systems are not foolproof and can be susceptible to attack."*

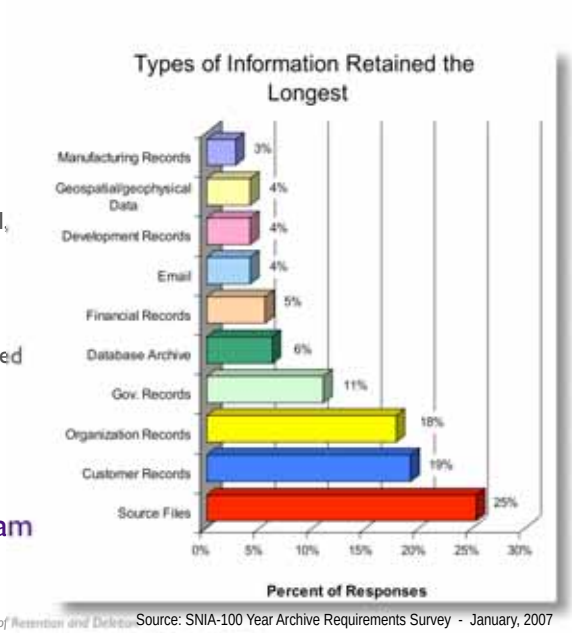
Risk of 'Adverse Consequences'

- Cases lost and fines assessed for:
  - Negligence, "bad faith": Failure to produce evidence (either at all, in a timely fashion, or to be able to certify its completeness)
  - Spoliation: Lost or damaged evidence and media
  - Intentional destruction of evidence
  - Failure to place legal-hold in effect
  - Failure to produce authentic evidence
  - Failure to have operational policies and practices in place
  - Waiver of privilege
  - Default judgement

Consequences run from $Millions to $Billions

Electronically Stored Information

- ESI includes all Digital Information and Data[1]
  - Includes metadata
    - Such as source, owner, time and origin, format, life, type, location, versions, duplicates, links, audit trail, chain of custody, etc.
  - Includes all states (usage mode)
    - Active, inactive, reference, or expired
  - Includes all types:
    - Structured, semi-structured, or unstructured
  - On any media or device
  - Including system and program files



Source: SNIA-100 Year Archive Requirements Survey - January, 2007

1. Source: FRCP, Sedona

Information Challenges

- Legal counsel does not know what information they need or where the information is
- Confusion over retention - preservation - and deletion policies and procedures creates legal risk
- FRCP requires access to and preservation of metadata just as well as the data

Discovery Challenges

- Full discovery may be required
  - Duplicates and versions - where are they? Are they authentic?
  - All forms of information across all media, device types, & systems or locations
    - RAM, instant messaging, metadata, network logs, web-sites
- Inadequate policies and procedures
  - Disposition, permanent deletion, version tracking are poorly practiced

Info can be an asset or liability

Typical Discovery Risks

- Spoliation – *"Destruction or alteration of records, which includes the failure to properly preserve those records, for use as evidence in pending or foreseeable litigation."* - Sedona
- The storage, daily use, discovery, and privilege review processes damage or change content authenticity, lose information, or expose otherwise private information that should not have been disclosed
- Failure to find all the information needed or to look in all possible locations
  - Lost/misplaced tapes, RAM, removable drives
  - Not getting information from all service providers
- The opponent has information of yours you do not have

You Will Lose Information

- The question is how much and is it a problem?
  - Deletion during litigation hold or lack of clear retention policies
  - Corruption or damage and the inability to recover or decrypt
  - Can't find it, read it, or interpret it
  - Security theft or changes
  - No longer have the 'original' records
  - Inability to access 3rd party sites/systems
  - Failure to control and prove the integrity and authenticity of the information and its metadata
  - What about 'lossy technologies' (e.g. compression like jpg, mpg, mp3 or a 'pdf' of spreadsheets that don't provide formulas, macros, links…)

Metadata Counts

- *"Changing or enhancing the metadata of legacy ESI (any ESI retained as a record prior to implementing the standards) should be considered with care if it is being retained for compliance because this could be construed as "altering" an existing record."*

Source: Report of the Judicial Conference: Committee on Rules of Practice and Procedure, Federal Rules of Civil Procedure, September 2005

Preservation

- The processes and operations involved in ensuring the ability to read, interpret, authenticate, protect, and secure information and its metadata throughout its lifecycle. (Source: DMF, ARMA, OAIS, NARA)
  - Requires *Authenticity*: A property of information, including its content (the data) and metadata, that identifies that it is currently what it was originally and verifies that it has not changed over time. (Source: DMF, NARA, Society of American Archivists)

Preservation must start day #1!

Retention

- Policy: Retain each class of information for a defined period of time based on:
  - Legal requirements – federal, state, local laws & statutes
  - Industry requirements/best practices
  - Continued business or historical value
  - Identification and classification
  - Risk/cost-benefit analysis

Retention:

To keep and control information or data for specific periods of time.

(Source: DMF and SAA)

The New Reality

- Because of FRCP, you never know when you will have to produce information as 'authentic digital evidence'
  - Does not mean you can't throw anything out
- Retention practices must be consistent regardless of time span!

Preservation Must Start Day #1

Retention:
To keep and control information or data for specific periods of time.
(Source: DMF and SAA)

Retention: More Than Just a Policy

- Retention practices include:
  - Classification, requirements, policies
  - Control of information – locations, tracking, versions, migration
  - Services: preservation, protection, security, availability, integrity, authenticity
  - Metadata management
  - Management tools
  - Being 'discovery ready'

Solve the Disconnect

Records and Information Management (RIM), IT, and Legal

- Failure to Collaborate
  - All parties actively working together, setting requirements
- How much information needs to be retained and for how long?
  - Large bucket/Small bucket classification practices
  - Only official records need to be retained vs. retain everything
  - Make sure 'legal' is involved and an active participant

Solve the Disconnect

RIM, Legal, and IT

- Replace the old 'archive' mentality with 'retention & preservation'
- Change Disposition:
  - From: - an event at 'end of the information lifecycle'
  - To: - a requirement and policy at creation

Bridging the Cooperation Gap

- Create an "information-centric enterprise"
  - Operate and manage the data center according to the value of and requirements for information
- Create a collaborative environment
  - C-level, Executive management is leading
  - RIM, IT, Legal, Security, Finance, and the business work together to set requirements
  - IT knows the requirements for information and has service level agreements, SLAs

Collaborate, Identify, Classify, Requirements

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When You May Delete

- Information or data has 'expired' based on its retention requirements and policies exist to delete upon expiration.
  - Must be the 'normal' process
- Policies exist authorizing deletion by legal and business
- Litigation-hold procedures are in-place and proven

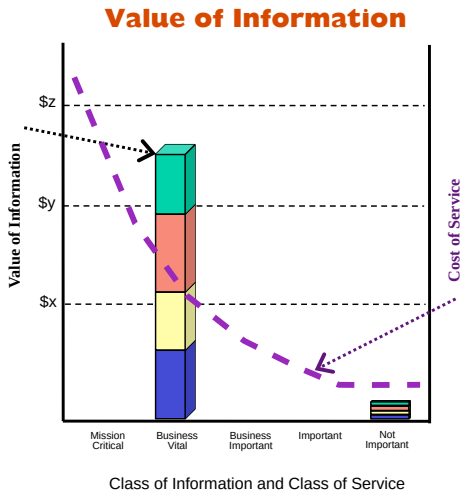
Recommendation: create a class of ***"Disposable Information"***

Disposable Information

- If there were only 3-classes of information they could be called 'essential', 'reference', and 'disposable'
- Reference information will not be modified for the remainder of its lifetime, but needs to be readily accessible.
  - Examples (will vary by organization)
    - Essential records in an inactive or reference state
    - Draft versions, duplicate records
    - Training materials, marketing materials, image libraries...
    - Organization's communications,announcements, newsletters...
- Disposable Information is "everything not essential or reference"
  - Examples (will vary by organization)
    - Personal/employee files, music, pictures, graphics, internet downloads…
    - Personal email, IM, non-business emails,
    - Redundant copies, old software...

Alternate Approach - Value

- Determine a relative ranking of specific classes or sets of information to the business
  - how much does this information contribute to the business
  - plus the cost of loss of data or of access (business losses, downtime & productivity losses, credibility losses)
  - plus the potential legal, business risk, or liability
  - plus the cost to recreate the data
  - plus other measures which might include "future value", ownership, value as a business record, competitive advantage, etc.



What you can Delete

- Disposable information
  - As classified upon creation when it 'expires'
- 'Expired' information and data
  - Including duplicates and versions in all locations
- Only in accordance with retention policies
  - Put in place classification and preservation practices upon creation and conform to them
  - Use tools to filter legacy unstructured information
- In Conformance to legal/business policies
  - Example: No litigation hold in place

Litigation Hold

- Have standard operating practices and a team in place, ready to go into effect
  - Communicate to employees who own or manage ESI
  - Tailor litigation hold to each case
- Define scope of the hold:
  - Type of information and data to be preserved for the hold
  - Method of preserving the held information (formats, media, location, etc.)
- Informed those involved in of consequences of not complying
- Monitor and update as needed

Deletion Suspension Process

- Process to stop deletion activities (legal hold)
- Litigation response team
- Cease deletion at first notice of suit or reasonable anticipations of suit or investigation
- Establish mechanisms to preserve all possible evidence
- Notify users not to delete/destroy certain classes of information
- Avoid deleting or changing metadata

Deletion Concepts - 1

- Deletion - (file system deletion) Using normal operating system or file system methods to remove data, indexes, pointers, and metadata associated with information or data objects. (Source: SNIA-DMF, Society of American Archivists, and Sedona Principles)
  - Beware it is forensically recoverable

Deletion Concepts - II

- Permanent Deletion: (must be by policy) The process of reliably and provably eliminating the ability to discover, recover, and read specific information from storage media or devices. (Source: DMF, Society of American Archivists, Sedona, NARA)
  - Requires physical destruction of the media/ device
  - Scrubbing - (purging via a 7x overwrite) - Forensically recoverable
  - Encryption - Beware, loses the keys, but not the metadata

Best Practices Summary

- Create an information-centric enterprise
  - Collaborate, identify, classify, requirements
    - ***"create a disposable-class"***
  - Define disposition practices up front (deletion)
    - ***"delete what you can as soon as you can"***
- Deploy best practices, applications, and tools
  - "***preservation begins day #1"***
- Make sure storage infrastructure supports preservation and authenticity for 'digital evidence'
  - ***"take care of metadata"***
- Litigation hold and deletion suspension processes
  - ***"Audit, measure, and improve"***

The Key Question?

- How can you reduce costs (hardware, software outside counsel, professional services, etc.) and risks, while improving regulatory compliance and the outcomes of your litigation DRAMATICALLY without spending more money?

The Value Proposition

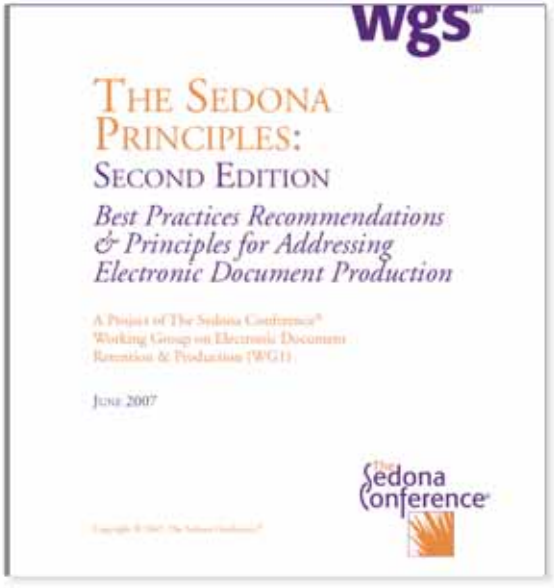
- How can you reduce costs (hardware, software outside counsel, professional services, etc.) and risks, while improving regulatory compliance and the outcomes of your litigation DRAMATICALLY without spending more money?
- By collaborating, involving more areas of the company in setting requirements, and by spending more wisely
  - There is a strong ROI for this strategy
- Remember, it is not just a technology problem

Resources

- SNIA-Data Management Forum: www.snia.org/forums/dmf
  - Includes papers, tutorials
  - Long-Term Archive and Compliant Storage Initiative
  - Long-Term Retention TWG
- DMF Community: http://community.snia-dmf.org
  - Includes discussion groups, documents, resources, peer networking
- Storage Technical Online Community: www.stortoc.org
  - Includes peer-only discussion groups and resources

Reference Documents

- FRCP: Federal Rules of Civil Procedures
  - "Amendments" specifically address discovery
- Best Practices
  - "Managing Discovery of Electronic Information: A Pocket Guide for Judges" - Federal Judicial Center, 2007
  - "The Sedona Principles: Best Practices, Recommendations & Principles for Addressing Electronic Document Discovery" - the Sedona Conference - June, 2007



Compliance Practices: Risks of Retention and Deletion
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Sedona Principles for Electronic Document Production

- Electronically stored information is potentially discoverable under Fed. R. Civ. P. 34 or its state equivalents. Organizations must properly preserve electronically stored information that can reasonably be anticipated to be relevant to litigation.
- When balancing the cost, burden, and need for electronically stored information, courts and parties should apply the proportionality standard embodied in Fed. R. Civ. P. 26(b)(2)(C) and its state equivalents, which require consideration of the technological feasibility and realistic costs of preserving, retrieving, reviewing, and producing electronically stored information, as well as the nature of the litigation and the amount in controversy.
- Parties should confer early in discovery regarding the preservation and production of electronically stored information when these matters are at issue in the litigation and seek to agree on the scope of each party's rights and responsibilities.
- Discovery requests for electronically stored information should be as clear as possible, while responses and objections to discovery should disclose the scope and limits of the production.

Source: Sedona Principles, June 2007

Sedona Principles for Electronic Document Production

- The obligation to preserve electronically stored information requires reasonable and good faith efforts to retain information that may be relevant to pending or threatened litigation. However, it is unreasonable to expect parties to take every conceivable step to preserve all potentially relevant electronically stored information.
- Responding parties are best situated to evaluate the procedures, methodologies, and technologies appropriate for preserving and producing their own electronically stored information.
- The requesting party has the burden on a motion to compel to show that the responding party's steps to preserve and produce relevant electronically stored information were inadequate.
- The primary source of electronically stored information for production should be active data and information. Resort to disaster recovery backup tapes and other sources of electronically stored information that are not reasonably accessible requires the requesting party to demonstrate need and relevance that outweigh the costs and burdens of retrieving and processing the electronically stored information from such sources, including the disruption of business and information management activities.

Sedona Principles for Electronic Document Production

- Absent a showing of special need and relevance, a responding party should not be required to preserve, review, or produce deleted, shadowed, fragmented, or residual electronically stored information.
- A responding party should follow reasonable procedures to protect privileges and objections in connection with the production of electronically stored information.
- A responding party may satisfy its good faith obligation to preserve and produce relevant electronically stored information by using electronic tools and processes, such as data sampling, searching, or the use of selection criteria, to identify data reasonably likely to contain relevant information.
- Absent party agreement or court order specifying the form or forms of production, production should be made in the form or forms in which the information is ordinarily maintained or in a reasonably usable form, taking into account the need to produce reasonably accessible metadata that will enable the receiving party to have the same ability to access, search, and display the information as the producing party where appropriate or necessary in light of the nature of the information and the needs of the case.

Sedona Principles for Electronic Document Production

- Absent a specific objection, party agreement or court order, the reasonable costs of retrieving and reviewing electronically stored information should be borne by the responding party, unless the information sought is not reasonably available to the responding party in the ordinary course of business. If the information sought is not reasonably available to the responding party in the ordinary course of business, then, absent special circumstances, the costs of retrieving and reviewing such electronic information may be shared by or shifted to the requesting party.
- Sanctions, including spoliation findings, should be considered by the court only if it finds that there was a clear duty to preserve, a culpable failure to preserve and produce relevant electronically stored information, and a reasonable probability that the loss of the evidence has materially prejudiced the adverse party.

Source: Sedona Principles, June 2007

General Workflow Planning Checklist

	Priority	Completed	Deadline	Task List / Info	Assigned to	Task Deadline	Notes
1.0 INTRODUCTION							
1.1 Process Identification							
1.1.1 Business Process Name:							
1.1.2 Person Responsible:							
1.1.3 Notify as needed:							
1.1.4 Monitored by:							
1.1.5 Activities Identified:							
2.0 ENABLED ACTIVITIES							
2.1 Workflow Domain							
2.1.1 Identify if all or part of this BP to be workflow enabled?							
2.1.2 If only part, list those that are NOT included:							
2.2 Process Convergnece							
2.2.1 Do other business processes perform activities included in this BP?							
2.2.1 Process A:							
2.2.2 Process B:							
2.2.3 Process C:							

3.0 (ACTIVITY SPECIFIC)

3.1 Start Conditions identified:

3.2 Exit Conditions identified:

3.3 Employees involved:

3.5 Data Identification

3.6 Input Data Used

- **3.6.1 Name:**
- **3.6.2 Source:**
- **3.6.3 Type:**
- **3.6.4 Structure:**
- **3.6.5 Influence:**
- **3.6.6 Invoked how:**
- **3.6.7 Comments:**

3.7 Output Data Generated

- **3.7.1 Name:**
- **3.7.2 Destination:**
- **3.7.3 Type:**
- **3.7.4 Structure:**
- **3.7.5 Influence:**
- **3.7.6 Comments:**

Prioritized Document Management Software Selection Guide	Importance Level	KnowledgeTree Premium	InfoRouter	KnowledgeTree Live	Vendor your Software Product could be here!	–
For HELP, click cells marked with a " ? "	?	?	?	?	?	?

TABLE of CONTENTS

The purpose of this spreadsheet is to help you identify the DMS products most likely to satisfy your needs, in an affort to identify ALL the vendors who should receive a copy of your RFP.

Please refer to the Instructions just below at Row 14, Column B

Document Management Software (DMS) is a software system used to store (capture), track, and retrieve documents created directly in digital format and/or the scanned images of paper (hardcopy) documents. Originally called "Document Imaging" in the early 1980s, it is often viewed as a component of today's larger, more expansive Enterprise Content Management (ECM) Systems that also address related Web Content Management, Digital Asset Management, Repository and Records Space Management functions.

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INSTRUCTIONS

To use this Selection Guide, please enter 1 - 10 in column C (marked "Importance Level") to indicate how important each business operation area is to your organization. 1 = the Lowest, 10 = the Highest importance level.

The total score for each product is displayed at the bottom of this worksheet. The high score indicates software products with a high potential to meet your needs.

The background color of entry reflects the risk potential posed by that entry, as illustrated below.

indicates *LOW* Risk
indicates *POSSIBLE* Risk
indicates HIGH Risk

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VENDOR PROFILE

Vendor Contact Data:

Product Name:	KnowledgeTree Premium	InfoRouter	KnowledgeTree Live	–	–
Firm Name:	Knowledge Tree	Active Innovations, Inc.	Knowledge Tree		
Street Address:	PO Box 7775 #87847	218 Main Street	PO Box 7775 #87847		
City:	San Francisco	East Setauket	San Francisco		
State:	CA	NY	CA		
ZIP:	94120-7775	11733	94120-7775		
Sales Contact:					
Phone:	415-692-1418	1-800-237-5948	415-692-1418		
Email:	sales@knowledgetree.com	sales@activeinnovations.com	sales@knowledgetree.com		
Sales Support Contact:	N/A	N/A	N/A		
Phone:					

Email:		support@infoRouter.com			
Web Site URL:	www.knowledgetree.com	www.inforouter.com	www.knowledgetree.com	www.paper1less.com	www.paper1less.com

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DOCUMENT MANAGEMENT CRITERIA

? ***Delivery (Deployment) Model:***					
• Hosted, On Demand (SaaS) Only:	N	N	Y	N	N
• On-Site Installation Only:	Y	Y	N	N	N
• Both, licensed together:	N	N	N	N	N
• Both, licensed separately:	Y	N	Y	N	N
? ***Client Type:***					
• Web Browser - On Demand Only (SaaS):	N	N	Y	N	N
• Desktop, via Web Browser:	Y	Y	Y	N	N
• Desktop - Proprietary Only (on-site install):	N	N	N	N	N
• Both, Desktop & SaaS licensed together:	NA	N	NA	N	N
• Both, Desktop & SaaS licensed separately:	Y	N	Y	N	N
? ***Mobile Client Platform:***					
? • Provide access to remote user devices:	Y	Y	Y	N	N
? • Synchronize content with mobile devices:	Y	Y	Y	N	N
? ***Vertical Markets:***					
• Accounting:	Y	Y	Y	N	N
• Automotive:	N	NA	N	N	N
• Architectural:	N	Y	N	N	N
• Banking:	N	Y	N	N	N
• Collections:	N	NA	N	N	N
• Construction:	N	Y	N	N	N
• Education:	N	Y	N	N	N
• Engineering:	N	Y	N	N	N
• Environmental Management:	Y	Y	Y	N	N
• Financial:	N	Y	N	N	N
• Food Service:	N	N	N	N	N
• Government:	N	Y	N	N	N
• Healthcare:	Y	Y	Y	N	N
• Human Resources:	N	N	N	N	N
• Insurance:	N	Y	N	N	N
• Legal:	Y	Y	Y	N	N
• Life Sciences:	N	Y	N	N	N
• Manufacturing:	Y	Y	Y	N	N
• Medical:	N	NA	N	N	N
• Mortgage & Title:	N	Y	N	N	N
• Non-Profit:	N	NA	N	N	N
• Oil & Gas:	N	Y	N	N	N
• Pharmaceutical:	Y	Y	Y	N	N
• Professional Services:	N	Y	N	N	N
• Quality Control Management:	Y	Y	Y	N	N
• Real Estate:	N	N	N	N	N
• Retail:	N	N	N	N	N

• Telecommunications:		N	Y	N	N	N
• Transportation - Logistics:		N	N	N	N	N
• Travel:		N	Y	N	N	N
• Utilities:		N	Y	N	N	N
? ***Operating Systems Supported:***						
• NA - Hosted SaaS Solution:	3	Y	N	Y	N	N
• AIX:	7	N	N	NA	N	N
• Apple Mac OS:	8	N	Y	NA	N	N
• Apple Mac OS X:	10	Y	Y	NA	N	N
• Linux - Redhat:	5	Y	Y	NA	N	N
• Linux - SUSE:	10	Y	Y	NA	N	N
• Linux - (other):	4	Y	Y	NA	N	N
• Version:		Ubuntu				
• MVS:	5	N	N	N	N	N
• Novell Netware:	7	N	N	N	N	N
• Version:						
• SunOS:	5	N	N	N	N	N
• UNIX:	7	Y	N	NA	N	N
• Windows 2000:	8	N	Y	N	N	N
• Windows 2003:	3	Y	Y	NA	N	N
• Windows VISTA:	10	Y	Y	NA	N	N
• Windows XP:	1	Y	Y	NA	N	N
? ***Databases Supported:***						
• NA - Hosted SaaS Solution:	2	Y	N	Y	N	N
• Any ODBC / OleDB supported database:	2	N	N	N	N	N
• MSDE SQL Server:	6	N	N	N	N	N
• MS SQL Server 2000:	8	N	Y	N	N	N
• MS SQL Server 2005:	8	N	Y	N	N	N
• MS SQL Server Express 2005:	8	N	NA	N	N	N
• MySQL:		Y	Y	NA	N	N
• Oracle 9i:		N	Y	N	N	N
• Oracle 10g:		N	Y	N	N	N
• Oracle 10g Express:		N	NA	N	N	N
• PostGreSQL 8.0:		N	N	N	N	N
? ***Is the Database Included:***	8	Y	NA	N	N	N
? ***Is a Scanner Interface Included:***						
• TWAIN:		Y	NA	Y	N	N
• ISIS:	6	N	NA	N	N	N
? ***Optical Character Recognition (OCR):***	5	Y	Y	Y	N	N
? ***Integrated Scanning - OCR Functions:***	7	Y	Y	N	N	N
? ***Automated Indexing Included:***						
• Indexing by Pre-Set fields:	7	Y	Y	Y	N	N
• Full text Indexing	8	Y	Y	Y	N	N
? ***Document Retrieval Capabilities:***						
• Via pre-defined Profile Fields:	10	Y	Y	Y	N	N
• Via user-defined Profile Fields:	10	Y	Y	Y	N	N
• Full text search and retrival:	10	Y	Y	Y	N	N
? ***Integrated Web Portal Capbilities:***	5	Y	Y	Y	N	N
? ***Automated Workflow Processing Capbilities:***	6	Y	Y	Y	N	N

? ***Collaboration Management Facilities:***						
• WebDav Server:	8	Y	Y	Y	N	N
	10	Y	Y	Y	N	N
? ***Regulatory & Compliance Requirements:***						
• DoD 5015.2 STD:	6	N	Y	N	N	N
• HIPAA:	10	Y	Y	Y	N	N
• ISO 900x:	7	Y	Y	Y	N	N
• Sarbanes Oxley:	4	Y	Y	Y	N	N
? • SEC:	6	Y	Y	Y	N	N
? ***Licensing Model:***						
• Named Workstations:	7	N	N	N	N	N
• Concurrent Users (Server Connections):	5	Y	Y	Y	N	N
• Site License:	2	Y	Y	Y	N	N

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WEIGHTED SCORE:

(see graph below)

KnowledgeTree Premium	InfoRouter	KnowledgeTree Live	–	–
91.50	**145.50**	**21.00**	**0.00**	**-274.00**

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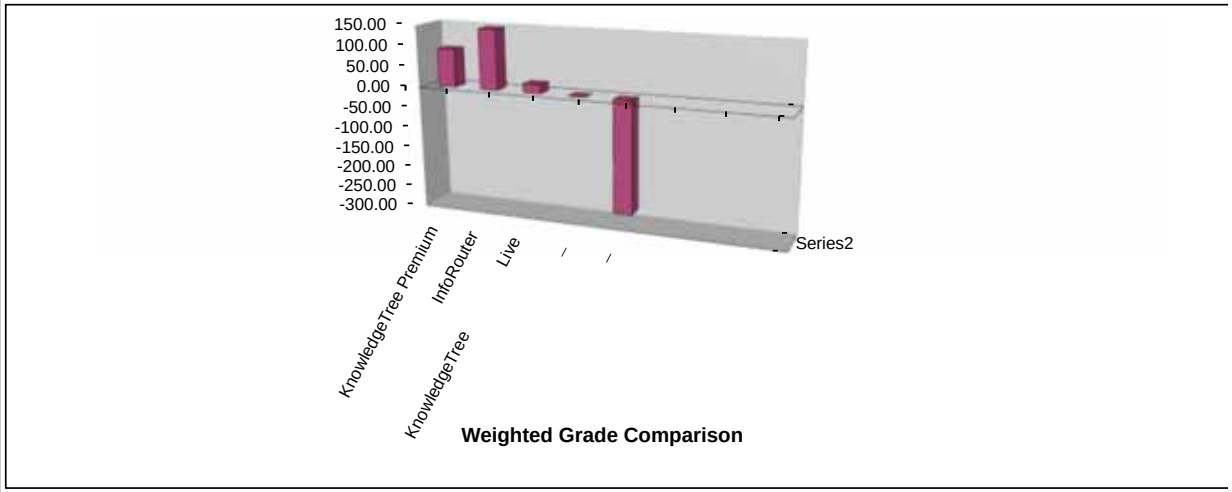

Document Management & Workflow Software Request for Proposal (RFP)	System Name Display	Enhancement Cost	Vendor Explanations		SCORE	Supportability		WEIGHT (Priority)	Full Support	Paid Enhancement	FREE Enhancement	No Support	Configuration	Report Tool	Yes	No	3rd Party	
For HELP, click the cell desired in ROWS 1 & 2.	RESPONSE				SCORE													
TABLE of CONTENTS	-																	
	-																	
Introduction	-																	
Vendor Global Issues	-																	
System Global Issues	-																	
System Usability	-																	
User Compatibility	-																	
System Configuration	-																	
Document Capture	-																	
— Scanning	-																	
— Batch Management	-																	
— Optical Character Recognition (OCR)	-																	
— Document Processing	-																	
Workflow	-																	
Document Retrieval	-																	
— Search Capabilities	-																	
Enterprise Reporting	-																	
Security	-																	
System Support	-																	
System Pricing	-																	
Bottom - View Price & Score	-																	
	-																	
(Return to TOP)	-																	
INTRODUCTION	-																	
	-																	
(**YOUR Firm Name here**)____ (a.k.a. "the Customer") is seeking proposals for an integrated Document Management System. Your firm, among others, is invited to submit a proposal on a competitive basis in the format described in this Request for Proposal (RFP). This RFP establishes requirements and defines responsibilities of the proposing vendor (a.k.a. "Offeror") to engineer, provide, install, test, and document this new software system to be referred to herein as the "SYSTEM". The terms "OFFEROR", "PROPOSING VENDOR", and "CONTRACTOR" refer to any vendor responding to this RFP and also the vendor selected for the project described herein.	-																	
This RFP in no way constitutes an agreement between the Customer and any Offeror. The objective of the RFP is the negotiation, execution and consummation of a definitive agreement between the Customer and appropriate Offeror(s) to provide the services described herein. Information contained in the RFP is provided in strict confidence and shall be used only for purposes of responding to this RFP.	-																	
	-																	
(Place Your Company Description HERE) (Place background information regarding your planned project here. This would include subjects such as - Why is it needed? Where is it to take place? What is the environment it will installed into? and similar	-																	
It is the Customer's intent to contract with just one vendor. The selected vendor who will be responsible for all activities in ___(the area described herein)___. The selected vendor is required to have responsible personnel and an office physically located in the __(**geographic area description**)__.	-																	
All Vendors responding to this RFP must supply all services specified in this RFP, and must be the sole entity responsible for all aspects of performance regarding the services, labor and materials required to meet this RFP's requirements, if awarded the engagement. **The Customer will consider proposals which contemplate subcontracting, provided that the Offeror:** (a) serves as the sole general contractor throughout the engagement; (b) assumes full responsibility for the performance of all subcontractors; and (c) does not subcontract all or substantially all of the performance requirements set forth in this RFP and its	-																	

Offerors who intend to submit a proposal in response to this RFP must prepare and forward a Confirmation Letter to the Customer's Contact named in this document no later than __DATE____. In the event your firm is not interested in submitting a response to this RFP, the Customer kindly requests that you still complete the Confirmation Letter and return the RFP with all accompanying materials to the Customer's Contact.	-																				
All Vendors planning to respond to this RFP are responsible for the following: A. examining all documents and all addenda with appropriate care; B. informing itself with respect to all conditions which might in any way affect the cost of performance of any work. Failure to do so will be the sole risk of the Vendor. In addition to examining of the Request for Proposal Documents, each Vendor shall make all other necessary arrangements as needed to become fully informed regarding all existing and expected conditions and matters which might in any way affect the cost or the performance of the work. Any failure to fully investigate the foregoing conditions shall not relieve the Vendor from responsibility for estimating properly the difficulty or cost of successfully	-																				
Representations or statements regarding this RFP must be made in a written communication from the Customer Contact identified elsewhere in this RFP. Vendors shall not consider any oral representations or statements by an officer, employee, or agent of the Customer to be an official expression on it's behalf.	-																				
Please direct any correspondence, whether oral or written, regarding this RFP to the contact listed below. This is to ensure that the same information is consistently disseminated to all Vendors	-																				
The Customer has scheduled a Bidder's Conference for ___(**DATE**)___ , at ___(**Physical Location Address, Room #**)____. The purpose of the Conference is to discuss the Customer's needs and objectives with respect to this RFP, and to provide prospective Vendors with an opportunity to ask questions.	-																				
Immediately following the bidders meeting, Vendors will have the opportunity to take a tour of the ___(**LOCATION NAME**___) site. If a Vendor deems it necessary, all additional costs for potential unknown conditions should be itemized in the RFP response, as possible additional costs. Contractor's may not claim ignorance of the requirements in an effort to relieve the Contractor of their liability and obligation under the	-																				
The Customer anticipates that Vendors will have questions on various RFP topics. In the event clarification is needed on any part of the RFP, Vendors must submit written questions to the Customer Contact named above. Written questions must be submitted no later than ___ **(DATE)**____. The Customer's written answers to all questions received by the deadline will be simultaneously distributed to prospective Vendors on or	-																				
The following tentative timetable has been established by the Customer: Milestone Target Date RFP Issuance ____(DATE)___ Bidders Conference ____(DATE)___ Questions from Vendors due ____(DATE)___ Response to Vendor questions ____(DATE)___ Proposals Due ____(DATE)___ Select Contractor ____(DATE)___ Sign Contracts ____(DATE)___ Intro to Gen Contractor ____(DATE)___ As explained elsewhere in this RFP, the Customer has the option to: (a) make an award on the basis of an Vendor's initial submission, (b) make an award after conducting discussions and/or negotiations with any Vendor(s), or (c) make no award. The Customer is unable to predict which of these alternatives will ultimately be selected. Accordingly, there are no target dates for award or contract execution. Vendors are reminded that the above schedule represents the Customer's best estimate, and that target	-																				

The Customer may, at its discretion, modify any provision or part of the RFP at any time prior to the Proposal Due Date. Copies of all such amendments will be simultaneously sent to all prospective Vendors who have received a copy of the RFP and are participating in the RFP process. If the Customer issues an amendment to the RFP, prospective Vendors shall acknowledge receipt of such amendment by (a) signing and returning a copy of the amendment to the Customer Contact; or (b) acknowledging receipt of the amendment by letter, telephone facsimile, email, or telegram. All acknowledgments shall be submitted no later than the	-																						
The Customer reserves the right to cancel this RFP at any time prior to the execution of a written Agreement and without any liability to Customer, if in its sole determination the Customer's best interests would be served.	-																						
To increase competition, the Customer reserves the right to waive minor informalities or procedural requirements during the process of soliciting, evaluating, or negotiating a contract award.	-																						
All Vendor Proposals shall be prepared simply as per the format and instructional requirements of this RFP. Vendors are discouraged from submitting promotional brochures and extensive artwork, as this may delay the review of the vendor's proposal.	-																						
All Vendor proposals, information, and responses will be incorporated into and made a part of any final Agreement between the Customer and the successful Vendor. Accordingly, Vendors shall not submit materials, which cannot be incorporated into the Agreement. Customer may disqualify any Vendor which submits a proposal or agreement that directly or indirectly attempts	-																						
The Due Date for submitting a Response to this RFP is **____(DATE)____, XX:YY AM/PM**, as determined by the Customer. Proposals received after that date and time will not be considered. Proposals shall be either sent by mail or hand-delivered to Customer Contact at the following address:	-																						
Contact Name **Organization Name** **123 Any** **Street** **Mail Stop - Room** **Number** **City, State/Prov, Postal** **Code**	-																						
Vendor proposals submitted in response to this RFP represent binding offers and **must remain valid for a period of 120 days from receipt by Customer**, or until discussions/negotiations are concluded, whichever is later.	-																						
A Vendor may, without prejudice to itself, withdraw or modify its response to this RFP by written request, provided that the request is received by Customer prior to the Proposal Due Date at the address to which proposals were to be submitted. Following its withdrawal, the Vendor may submit a new response, provided that delivery is effected prior to the Proposal Due Date. Proposals may not be modified after the Due Date, except through discussions/negotiations initiated	-																						
The Customer will not be responsible for any expenses incurred by Vendors for preparing a response to this RFP. The costs of developing and submitting a proposal are the responsibility of the Vendor.	-																						
Once submitted, proposals become the property of the Customer, and will not be returned to Vendors.	-																						
	-																						
	-																						
[Return to TOP]	-																						
VENDOR GLOBAL ISSUES	-																						
	-																						
Vendor Contact Data:	-																						
Firm Name:																							
Street Address:																							
City:																							
State:																							
ZIP:																							
Sales Contact:																							
Phone:																							
Email:																							
Sales Support Contact:																							
Phone:																							
Email:																							
Enter a short descriptive NAME for this proposal (max. 20 char).	System Name Display																						
	-																						

Vendor (Respondent) Background:	-																
Please indicate how long your company has been in business under the same ownership	-																
Less than 1 year:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Less than 3 years:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Less than 7 years:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Less than 10 years:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
More than 10 years:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Has the vendor company shown good performance (profits) in it's last two fiscal years?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Please indicate the average percentage of your company's resources (people and money) that are dedicated to new product development instead of existing product support?	-																
Less than 10%:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Less than 25%:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Less than 35%:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Less than 50%:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Less than 75%:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Has your firm been certified at a specific Capabilities Maturity Model level?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
What is your firm's SEI CMM Level?	-																
NO Certification:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CMM Level 0 - No QC standardization:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CMM Level 1 - Informal QC standards:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CMM Level 2 - QC planned and monitored:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CMM Level 3 - Well defined QC:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CMM Level 4 - Quantitatively controlled QC:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CMM Level 5 - Continuously improving QC:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is your firm currently certified at SEI People Capability Maturity Model (PCMM) Level 2 or higher?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is your firm currently certified at SEI Capability Maturity Model Integration (CMMI) Level 2 or higher?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is this product's developer ISO 9000 certified?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is your firm currently ISO 9001:2000 certified?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
The Customer requires the ESP to demonstrate quality of past performance through service to other organizations and providing at least 5 references, of which at least 2 are with trade organizations. References will be contacted. Can you supply these?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	-																
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(Return to TOP)	-																
Proposed Product History:	-																
How many sites are successfully using the vendor's software system?	-																
Less than 10:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Less than 50:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Less than 250:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
More than 250:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
More than 1000:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
How many major versions (revisions) of the vendor's system have been released?	-																
Initial Release - ZERO major revisions:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1 - 2 major revisions:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3 - 5 major revisions:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6 - 10 major revisions:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
More than 10 major revisions:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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(Return to TOP)	-																
Vendor System Methodologies:	-																
Does your company maintain written product development and version update procedures?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If YES to the previous question, please submit a copy of these procedures with your proposal.	-																
Please identify the diagramming techniques used by your firm to illustrate the business processes that currently exist in the targeted application environment	-																
Flow charts	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Data Flow Diagram	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OO Diagram	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ER diagrams	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indicate the standard notations/languages used by your firm to document the workflow involved in business processes:	-																
BPML:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MVP-L:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IDEF:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
None of the above:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Please provide a detailed explanation of how systems are designed at your firm (you may submit an attachment with your response here.)																	
Will Rapid Prototyping techniques be used to let users preview key functions to determine the data entry/inquiry/reporting formats most suitable to end user needs?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	-																
(Return to TOP)	-																
System Implementation Practices:	-																
Will at least one member of the ESP team managing the proposed project on a daily basis be a Project Management Institute (PMI) certified Project Management Professional (PMP)?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Describe the software implementation project management experience and capabilities of your firm																	

Describe how your firm's project management experience can ensure a successful implementation.																
Is a local source of software support available for the vendor's product?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Are the local support technicians employee's of the vendor or are they employees of a third party support group?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Does the vendor company fully support customized software?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Will a Help Desk offering live telephone support be available during normal business hours for this system when live usage starts?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
When on-site support is needed, what is the guaranteed response time?	-															
Same day as initial call:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Next business day:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As soon as possible (not defined):	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is a staff member dedicated to software support available during normal business hours?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is support available 24 hours/day, 7 days/week?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Will a web site dedicated to ongoing support of the system be provided by the vendor?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is on-site training available during the installation of the software?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is on-site training available on an on-going basis?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Can the training be customized to meet the needs of this specific client?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Are training manuals, i.e., software procedure manuals, provided during the training?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is on-line HELP available at the screen level?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is field level on-line help available at all times?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is the on-line help customizable by the user without re-compiling?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Does the system provide dynamic listings of valid codes or text choices at each point where they are used?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	-															
(Return to TOP)	-															
SYSTEM GLOBAL ISSUES	-															
	-															
Can multiple native languages be used simultaneously?	NS			0.00	0.00		1.00				0.00					
Is an online Help Menu offering an Index of Topics and searchable by keyword, similar to that found in Windows, available in the proposed software?	NS			0.00	0.00		1.00				0.00					
Does the proposed system support SQL fully?	NS			0.00	0.00		1.00				0.00					
Please describe any SQL implementation or support issues relating to the proposed product.																
Is the proposed system based upon a client/server architecture?	NS			0.00	0.00		1.00				0.00					
	-															
(Return to TOP)	-															
Operating System Support:	-															
Which of the following are fully supported as SERVER Operating Systems:	-															
Apple Mac OS?	NS			0.00	0.00		1.00				0.00					
Apple Mac OS X?	NS			0.00	0.00		1.00				0.00					
IBM OS/2 Warp?	NS			0.00	0.00		1.00				0.00					
MS Windows 98?	NS			0.00	0.00		1.00				0.00					
MS Windows ME?	NS			0.00	0.00		1.00				0.00					
MS Windows NT?	NS			0.00	0.00		1.00				0.00					
MS Windows XP?	NS			0.00	0.00		1.00				0.00					
MS Windows 2000?	NS			0.00	0.00		1.00				0.00					
Unix?	NS			0.00	0.00		1.00				0.00					
Linux?	NS			0.00	0.00		1.00				0.00					
SunOS?	NS			0.00	0.00		1.00				0.00					
MVS?	NS			0.00	0.00		1.00				0.00					
AIX?	NS			0.00	0.00		1.00				0.00					
	-															
Which of the following are fully supported as CLIENT Operating Systems:	-															
Apple Mac OS?	NS			0.00	0.00		1.00				0.00					
Apple Mac OS X?	NS			0.00	0.00		1.00				0.00					
IBM OS/2 Warp?	NS			0.00	0.00		1.00				0.00					
MS Windows 98?	NS			0.00	0.00		1.00				0.00					
MS Windows ME?	NS			0.00	0.00		1.00				0.00					
MS Windows NT?	NS			0.00	0.00		1.00				0.00					
MS Windows XP?	NS			0.00	0.00		1.00				0.00					
MS Windows 2000?	NS			0.00	0.00		1.00				0.00					
Unix?	NS			0.00	0.00		1.00				0.00					
Linux?	NS			0.00	0.00		1.00				0.00					
SunOS?	NS			0.00	0.00		1.00				0.00					
MVS?	NS			0.00	0.00		1.00				0.00					
AIX?	NS			0.00	0.00		1.00				0.00					
Are "thin-clients" fully supported by the proposed software?	NS			0.00	0.00		1.00				0.00					
OTHER OS:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If "OTHER" is indicated in the previous question, please list that information in the Response column.				0.00	0.00		1.00									
Please list the Wireless technologies currently supported by the proposed software:	-															
• Satellite:	NS			0.00	0.00		1.00				0.00					
• Cellular:	NS			0.00	0.00		1.00				0.00					
- GSM:	NS			0.00	0.00		1.00				0.00					
- CDMA:	NS			0.00	0.00		1.00				0.00					

• Wireless LAN	NS	0.00	0.00	1.00				0.00					
- 802.11b:	NS	0.00	0.00	1.00				0.00					
- 802.11g:	NS	0.00	0.00	1.00				0.00					
- Bluetooth:	NS	0.00	0.00	1.00				0.00					
- UWB (Ultra Wide bandwidth):	NS	0.00	0.00	1.00				0.00					
• WAP:	NS	0.00	0.00	1.00				0.00					
• I-Mode:	NS	0.00	0.00	1.00				0.00					
• Other:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If "OTHER" is indicated in the previous question, please list that information in the Response column:													
Please list the Handheld platforms currently supported by the proposed software?	-												
• Palm Treo:	NS	0.00	0.00	1.00				0.00					
• Palm LifeDrive:	NS	0.00	0.00	1.00				0.00					
• Palm VII:	NS	0.00	0.00	1.00				0.00					
• Symbol MC3000:	NS	0.00	0.00	1.00				0.00					
• Sharp Zaurus:	NS	0.00	0.00	1.00				0.00					
• Other:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If "OTHER" is indicated in the previous question, please list that information in the Response column:													
	-												
(Return to TOP)	-												
Networks Supported:	-												
Which of the following networks provide a compatible platform for the Windows version of the proposed system?	-												
PC LAN Server?	NS	0.00	0.00	1.00				0.00					
3COM?	NS	0.00	0.00	1.00				0.00					
Microsoft LAN Manager?	NS	0.00	0.00	1.00				0.00					
Novell?	NS	0.00	0.00	1.00				0.00					
SCO UNIX LAN?	NS	0.00	0.00	1.00				0.00					
Banyan Vines?	NS	0.00	0.00	1.00				0.00					
Lantastic?	NS	0.00	0.00	1.00				0.00					
PC-NET?	NS	0.00	0.00	1.00				0.00					
Other?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Please describe the version requirements, if any, relating to the supported networks described in the preceding questions.													
Are any changes to the existing network software required?	NS	0.00	0.00	1.00				0.00					
Please indicate which of the protocols (methodologies) listed below are supported by the proposed software for operation over a Wide Area Network (WAN):	-												
• Leased Lines:	NS	0.00	0.00	1.00				0.00					
• T1:	NS	0.00	0.00	1.00				0.00					
• T3:	NS	0.00	0.00	1.00				0.00					
• X.25 (Cisco):	NS	0.00	0.00	1.00				0.00					
• Frame Relay:	NS	0.00	0.00	1.00				0.00					
• SONET/SDH:	NS	0.00	0.00	1.00				0.00					
• MPLS:	NS	0.00	0.00	1.00				0.00					
• ATM:	NS	0.00	0.00	1.00				0.00					
• ISDN:	NS	0.00	0.00	1.00				0.00					
• WDM:	NS	0.00	0.00	1.00				0.00					
• SMDS:	NS	0.00	0.00	1.00				0.00					
• SDLC (Cisco):	NS	0.00	0.00	1.00				0.00					
• DSL:	NS	0.00	0.00	1.00				0.00					
• Bisync:	NS	0.00	0.00	1.00				0.00					
• Cable Modem:	NS	0.00	0.00	1.00				0.00					
• Other:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If "OTHER" is indicated in the previous question, please list that information in the Response column:													
Is a dedicated server required?	NS	0.00	0.00	1.00				0.00					
If a dedicated server is required please describe the server required and it's benefits:													
Is there any limit on the size of a single library?	NS	0.00	0.00	1.00				0.00					
Are any modifications to existing hardware required by the proposed system?	NS	0.00	0.00	1.00				0.00					
If hardware changes are required please describe them here.													
	-												
(Return to TOP)	-												
System Fault Tolerance	-												
Please indicate which of the following measures or devices are provided by the proposed software:	-												
RAID 5 Disk support:	NS	0.00	0.00	1.00				0.00					
Mirrored disk support:	NS	0.00	0.00	1.00				0.00					
Hot backup system support:	NS	0.00	0.00	1.00				0.00					
Warm backup system support:	NS	0.00	0.00	1.00				0.00					
UPS monitoring:	NS	0.00	0.00	1.00				0.00					
Redundant power supply:	NS	0.00	0.00	1.00				0.00					
Transaction rollback function:	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
Standards Supported:	-												
Please indicate which of the following standards are adhered to by the planned system?	-												
CCITT:	NS	0.00	0.00	1.00				0.00					
G3/G4:	NS	0.00	0.00	1.00				0.00					
Is the Fiber Distributed Data Interface (FDDI) standard for networking supported?	NS	0.00	0.00	1.00				0.00					

Does the system fully support TWAIN-compliant hardware peripherals?	NS			0.00	0.00		1.00				0.00					
Is the Integrated Services Digital Network (ISDN) standard supported for all communications related functions?	NS			0.00	0.00		1.00				0.00					
GIF - Graphical Interchange Format?	NS			0.00	0.00		1.00				0.00					
DIF - Data Interchange Format?	NS			0.00	0.00		1.00				0.00					
Is the ODMA (Open Document Management API) standard supported by the proposed system?	NS			0.00	0.00		1.00				0.00					
Does this vendor/product support the DMA standards?	NS			0.00	0.00		1.00				0.00					
Is the proposed software compliant with LDAP (Lightweight Directory Access Protocol)?	NS			0.00	0.00		1.00				0.00					
Is the proposed software CORBA compliant?	NS			0.00	0.00		1.00				0.00					
Is the proposed software COM compliant?	NS			0.00	0.00		1.00				0.00					
Is the proposed software ODBC compliant?	NS			0.00	0.00		1.00				0.00					
Please indicate which of the third party backend database listed below are natively supported by the proposed software:	-															
• Access (Microsoft):	NS			0.00	0.00		1.00				0.00					
• Adabas by Software AG:	NS			0.00	0.00		1.00				0.00					
• CodeBase:	NS			0.00	0.00		1.00				0.00					
• DB2 (IBM):	NS			0.00	0.00		1.00				0.00					
• Empress DBMS:	NS			0.00	0.00		1.00				0.00					
• Filemaker:	NS			0.00	0.00		1.00				0.00					
• Gupta SQLBase:	NS			0.00	0.00		1.00				0.00					
• Informix (IBM):	NS			0.00	0.00		1.00				0.00					
• mySQL:	NS			0.00	0.00		1.00				0.00					
• Oracle Database:	NS			0.00	0.00		1.00				0.00					
• SQL Server (Microsoft):	NS			0.00	0.00		1.00				0.00					
• Sybase Adaptive Server:	NS			0.00	0.00		1.00				0.00					
• Other:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If "OTHER" is indicated in the previous question, please list that information in the Response column:																
Is a CLIENT database management system supplied with the proposed software?	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If YES, please explain in more detail in the Response column.																
	-															
(Return to TOP)	-															
Software Release Dates:	-															
When was the proposed software FIRST originally released to the general market?																
What is the release date of the CURRENT (last) release of the proposed software?																
When is the next release of the proposed software planned?																
Will the next release of the proposed software require any data to be converted to a format different than the format required by the current version of the proposed software?																
Is the Architectural Orientation of the proposed software "Web-centric"?	NS			0.00	0.00		1.00				0.00					
When was the proposed software first released with a "web-centric" architecture?																
	-															
(Return to TOP)	-															
Scalability Issues:	-															
How scalable is the proposed software regarding the number of users? Please respond with a Min # - Max # range, for example, 3 - 100 users.																
How many users per application server are supported by the proposed software?																
	-															
(Return to Top)	-															
SOFTWARE USABILITY	-															
	-															
USER INTERFACE	-															
	-															
If the proposed system is capable of running on multiple dissimilar platforms, such as Linux and Windows 98, is the user interface consistent on all supported platforms, with only minor variations between the two?	NS			0.00	0.00		1.00				0.00					
	-															
(Return to TOP)	-															
Search Facilities:	-															
Can users search the document database by keyword?	NS			0.00	0.00		1.00				0.00					
Can users search the document database by Boolean command string?	NS			0.00	0.00		1.00				0.00					
	NS			0.00	0.00		1.00				0.00					
Can users search for documents by keyword and Boolean commands simultaneously?	NS			0.00	0.00		1.00				0.00					
Is it possible for a user to quickly change which data is displayed in the results of an inquiry or search?	NS			0.00	0.00		1.00				0.00					
Is it possible for an user to attach a hardcopy document to a existing document by scanning the document, then setting up a link to the document scan image from the document maintenance screen?	NS			0.00	0.00		1.00				0.00					

Is it possible for a user to attach an email to an existing document by setting up a link to the email from the document maintenance screen?	NS	0.00	0.00	1.00				0.00					
Can users search the attached documents or emails?	NS	0.00	0.00	1.00				0.00					
Can users easily view a hotlist of recently performed searches and reuse them if desired?	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
USER DEFINED FEATURES	-												
	-												
Customizable Online Help:	-												
Is a customizable online Help facility offering an Index of Topics and searchable by keyword, available in the proposed software?	NS	0.00	0.00	1.00				0.00					
Can the online help provided by the proposed software be customized by an administrative user with appropriate security?	NS	0.00	0.00	1.00				0.00					
Can the online Help be modified by a user with proper clearance?	NS	0.00	0.00	1.00				0.00					
Does the proposed software provide context-sensitive help, i.e., help specific to individual data entry fields or related collections of fields?	NS	0.00	0.00	1.00				0.00					
If the proposed software provides for user-defined fields, can online help related to each individual field be created?	NS	0.00	0.00	1.00				0.00					
Are DETAILED error messages that enable the user to identify and correct the problem causing the error provided by the proposed software?	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
Customizable Screens:	-												
Does the proposed software provide the ability for an authorized user to customize screens?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If YES, please indicate which of the following can be customized by the user:	-												
Screen background	NS	0.00	0.00	1.00				0.00					
Field locations	NS	0.00	0.00	1.00				0.00					
Source menu	NS	0.00	0.00	1.00				0.00					
Please indicate which of the following can be customized by an authorized user:	-												
Field Labels:	NS	0.00	0.00	1.00				0.00					
Field Data Types:	NS	0.00	0.00	1.00				0.00					
Input Validations:	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
Field-Level Customizations:	-												
Does the proposed software offer a facility to easily customize the key field terminology used throughout the system without programming or scripting?	NS	0.00	0.00	1.00				0.00					
Can terminology appearing in on-screen Field Labels be customized? For example, can "staff" be changed to "technician" in all appropriate on-screen Field Labels?	NS	0.00	0.00	1.00				0.00					
Can terminology appearing in on-screen text boxes be customized? For example, can "staff" be changed to "technician" in all appropriate Text Boxes?	NS	0.00	0.00	1.00				0.00					
Can terminology appearing in on-screen Drop-Down Boxes be customized? For example, can "staff" be changed to "technician" in all appropriate Drop-Down Boxes?	NS	0.00	0.00	1.00				0.00					
Can terminology appearing in Screen Captions be customized? For example, can "staff" be changed to "technician" in all appropriate Screen Captions?	NS	0.00	0.00	1.00				0.00					
Can terminology appearing in Screen Displays be customized? For example, can "staff" be changed to "technician" in all appropriate Screen Displays?	NS	0.00	0.00	1.00				0.00					
If the proposed software provides user defined fields, does it allow a user with proper clearance to designate the input validation rules used to validate data entered into the field?	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
USER COMPATIBILITY	-												
	-												
User Defined Fields	-												
If the proposed software provides user defined fields, does it allow a user with proper clearance to designate the Field Label displayed onscreen to describe the field?	NS	0.00	0.00	1.00				0.00					
If the proposed software provides user defined fields, does it allow a user with proper clearance to designate the allowable Field Data Type (numeric, binary, etc.)?	NS	0.00	0.00	1.00				0.00					
If the proposed software provides user defined fields, does it allow a user with proper clearance to designate the input validation rules used to validate data entered into the field?	NS	0.00	0.00	1.00				0.00					

If the proposed software provides user defined fields, does it allow a user with proper clearance to designate Drop-Down Lists containing the entries valid for each field?	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
Online Help Issues	-												
Is an online Help Menu offering an Index of Topics and searchable by keyword, similar to that found in Windows, available in the proposed software?	NS	0.00	0.00	1.00				0.00					
Can the online Help be modified by a user with proper clearance?	NS	0.00	0.00	1.00				0.00					
Does the proposed software provide context-sensitive help, i.e., help specific to individual data entry fields or related collections of fields?	NS	0.00	0.00	1.00				0.00					
If the proposed software provides for user-defined fields, can online help related to each individual field be created?	NS	0.00	0.00	1.00				0.00					
Are DETAILED error messages that enable the user to identify and correct the problem causing the error provided by the proposed software?	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
Process Customization	-												
Does the proposed software enable an authorized user to specify the business process rules to be used?	NS	0.00	0.00	1.00				0.00					
Is a graphical flowcharting tool made available to the user for creation of business process rules and workflow using a "drag and drop" action?	NS	0.00	0.00	1.00				0.00					
Does the proposed software provide the ability to setup timers and alarms, within the workflow process being defined, to alert users of impending deadlines?	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
SYSTEM CONFIGURATION:	-												
	-												
OLE/DDE Support:	-												
Can the document management features be accessed via OLE?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Can the proposed system function as a DDE Server?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Can the proposed software function as a DDE Client?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Are discrete document resources such as graphic files, fonts, etc., tracked automatically?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Does the Notes integration support the following:	-												
What level of integration is provided, NONE, ONE WAY, or TWO WAY?													
Can Notes documents be searched, checked out, and used in workflow processes?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is integrated version control provided by both the EDMS and Notes for each document?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Can storage locations be defined based on user/document type?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
What amount of RAM is recommended for each workstation?													
	-												
Programming Interface:	-												
Is the Source Code for the proposed software available through an escrow agreement?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is the Source Code available for use by the customer?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Please indicate which of the programming languages listed below are supported by the proposed software's application integration & customization kit:	-												
• COBOL:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• VB:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Lisp:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• VBA:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Pascal:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• C:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Perl:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• C+:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• C#:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• C++:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Other:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If "OTHER" is indicated in the previous question, please list that information in the Response column:													
Please list the programming toolkits used (if any) during the development of the proposed software.	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is a collection of standard, published, and fully documented Application Programming Interface(s) provided with the proposed software?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Is a collection of standard, published, and fully documented XML Object(s) provided with the proposed software?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Can applications provided by others be easily integrated with the proposed software through a standard, documented Application Programming Interface (API) collection?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Do the standard APIs and XML Objects provided with the proposed software enable full integration with third party ERP systems?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Does the proposed software provide fully documented Application Programming Interfaces (APIs)?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is a C++ API provided by the proposed system?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is a Visual Basic API provided by the proposed system?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is an API for Java provided by the proposed system?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is a SOAP API provided by the proposed system?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is an XML API provided by the proposed system?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Please indicate which of the following 3rd Party ERP systems have been successfully integrated with the proposed software:	-														
• Fourth Shift for SAP:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• SYSPRO ERP:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Made2Manage:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Epicor Vista:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Epicor Vantage:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Macola ERP:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Bowen & Groves M1:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Cincom Systems:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Software 21 FlexGen 4:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• NEC FlexProcess:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• Other:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If "OTHER" is indicated in the previous question, please list that information in the Response column:															
Is the Web interface enabled through CGI programming, user-defined HTML templates, or a proprietary high-level scripting language?															
	-														
(Return to TOP)	-														
DOCUMENT CAPTURE	-														
	-														
General:	-														
Does the proposed software provide a variety of data capture methods?	NS			0.00	0.00	1.00				0.00					
Does the proposed software support a minimum resolution of 200 dpi?	NS			0.00	0.00	1.00				0.00					
Does the proposed software provide a maximum resolution of 1400 dpi?	NS			0.00	0.00	1.00				0.00					
Does the proposed software provide automated and easy to use tools for document profiling at the site where the document is created or received?	NS			0.00	0.00	1.00				0.00					
Does the proposed software retain original formatting of captured documents?	NS			0.00	0.00	1.00				0.00					
Does the proposed software provide document images that are compatible with other systems existing now and in the future?	NS			0.00	0.00	1.00				0.00					
Does the proposed software retain the colors used in specific document types?	NS			0.00	0.00	1.00				0.00					
Does the proposed software use non-proprietary file formats for both work-in-progress and long-term archival storage?	NS			0.00	0.00	1.00				0.00					
Does the proposed software replicate documents in a manner that is as faithful as possible to the appearance of the original, while minimizing storage requirements?	NS			0.00	0.00	1.00				0.00					
Does the proposed software provide render documents in multiple formats?	NS			0.00	0.00	1.00				0.00					
Does the proposed software support folders that contain various document formats?	NS			0.00	0.00	1.00				0.00					
Please indicate if the following are integrated with the proposed software:	-														
• Object categorization for records retention	NS			0.00	0.00	1.00				0.00					
• Object categorization for automated content	NS			0.00	0.00	1.00				0.00					
• Object compression and storage process:	NS			0.00	0.00	1.00				0.00					
• Object labeling and indexing.	NS			0.00	0.00	1.00				0.00					
• Object annotation (e.g., date stamping, workgroup ID)	NS			0.00	0.00	1.00				0.00					
• Other:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

If "OTHER" is indicated in the previous question, please list that information in the Response column:																					
Which of the following document entry (capture) sources are supported by the planned software?	-																				
Audio files and tapes?	NS			0.00	0.00		1.00				0.00										
CAD files?	NS			0.00	0.00		1.00				0.00										
Digital photographs?	NS			0.00	0.00		1.00				0.00										
Email?	NS			0.00	0.00		1.00				0.00										
Faxing?	NS			0.00	0.00		1.00				0.00										
Graphics software?	NS			0.00	0.00		1.00				0.00										
HTML?	NS			0.00	0.00		1.00				0.00										
Interactive Voice Response System (IVRS) records?	NS			0.00	0.00		1.00				0.00										
Photographs?	NS			0.00	0.00		1.00				0.00										
Scanning?	NS			0.00	0.00		1.00				0.00										
SML streams?	NS			0.00	0.00		1.00				0.00										
Spreadsheets?	NS			0.00	0.00		1.00				0.00										
Web Content?	NS			0.00	0.00		1.00				0.00										
Word Processors/Text editors?	NS			0.00	0.00		1.00				0.00										
Video frame grabbers?	NS			0.00	0.00		1.00				0.00										
Video Clips?	NS			0.00	0.00		1.00				0.00										
Voice Mail recordings?	NS			0.00	0.00		1.00				0.00										
XML?	NS			0.00	0.00		1.00				0.00										
Other:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
If "OTHER" is indicated in the previous question, please list that information in the Response column:																					
Please indicate which of the following software product specific DOCUMENT file types may be imported directly into the proposed system.	-																				
• Adobe PDF:	NS			0.00	0.00		1.00				0.00										
• Adobe Postscript:	NS			0.00	0.00		1.00				0.00										
• Lotus 123:	NS			0.00	0.00		1.00				0.00										
• Lotus WordPro:	NS			0.00	0.00		1.00				0.00										
• MacWrite:	NS			0.00	0.00		1.00				0.00										
• MS Excel:	NS			0.00	0.00		1.00				0.00										
• MS PowerPoint:	NS			0.00	0.00		1.00				0.00										
• MS Word:	NS			0.00	0.00		1.00				0.00										
• MS Works:	NS			0.00	0.00		1.00				0.00										
• MS Write:	NS			0.00	0.00		1.00				0.00										
• Rich Text Format (RTF):	NS			0.00	0.00		1.00				0.00										
• ShockWave Flash:	NS			0.00	0.00		1.00				0.00										
• Text:	NS			0.00	0.00		1.00				0.00										
• Other:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
If "OTHER" is indicated in the previous question, please list that information in the Response column:																					
Please list the IMAGE file formats types that may be imported directly into the proposed system.	-																				
• BMP Windows/OS-2 bit-mapped graphics:	NS			0.00	0.00		1.00				0.00										
• CGM Computer Graphics Metafile:	NS			0.00	0.00		1.00				0.00										
• GIF CompuServe Graphic Interchange Format:	NS			0.00	0.00		1.00				0.00										
• IMG GEM Paint:	NS			0.00	0.00		1.00				0.00										
• JPG (Joint Photographics Expert Group):	NS			0.00	0.00		1.00				0.00										
• JPEG (Joint Photographics Expert Group):	NS			0.00	0.00		1.00				0.00										
• Is CCITT Group 3 & 4 compression supported:	NS			0.00	0.00		1.00				0.00										
• MPG (Moving Pictures Experts Group):	NS			0.00	0.00		1.00				0.00										
• MPEG-1 (Moving Pictures Experts Group):	NS			0.00	0.00		1.00				0.00										
• MPEG-2 (Moving Pictures Experts Group):	NS			0.00	0.00		1.00				0.00										
• PCD Kodak Photo CD:	NS			0.00	0.00		1.00				0.00										
• TIF (Tagged Image File)	NS			0.00	0.00		1.00				0.00										
• TIFF (Tagged Image File Format)	NS			0.00	0.00		1.00				0.00										
TIF(F) file versions supported:	NS			0.00	0.00		1.00				0.00										
• Other:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
If "OTHER" is indicated in the previous question, please list that information in the Response column:																					
Is a separate & merge facility for Exporting/Importing documents and their associated INDEX data to/from other sites using the proposed system included?	NS			0.00	0.00		1.00				0.00										
	-																				
(Return to TOP)	-																				
Scanning Capabilities:	-																				
Please indicate if the proposed software supports a wide range of medium-speed scanners for low and medium volume imaging.	NS			0.00	0.00		1.00				0.00										
Can the proposed software scan a variety of documents that have been created on paper, linen and card stock?	NS			0.00	0.00		1.00				0.00										
Can the software scans documents as small as 3" x 5"?	NS			0.00	0.00		1.00				0.00										
Please indicate if the proposed software scans documents as large as E and O sizes.	NS			0.00	0.00		1.00				0.00										
Can the proposed system scans and creates images of documents on jacked and roll microfilm?	NS			0.00	0.00		1.00				0.00										
Does the proposed software support automatic imaging of single-sided, two-sided, and multiple page documents?	NS			0.00	0.00		1.00				0.00										

Does the proposed software support scanning by single sheet feeding and by automatic document feeder?	NS				0.00	0.00		1.00				0.00						
Supports distributed scan stations.	NS				0.00	0.00		1.00				0.00						
Supports remote distributed scan stations.	NS				0.00	0.00		1.00				0.00						
Does the software support concurrent use of data capture software on separate PCs?	NS				0.00	0.00		1.00				0.00						
Does the software allow documents to be scanned at a range of resolutions.	NS				0.00	0.00		1.00				0.00						
Does the proposed system provides grayscale scanning functionality?	NS				0.00	0.00		1.00				0.00						
What is the scanner's throughput?	NS				0.00	0.00		1.00				0.00						
Is duplex (one page, double sided) scanning supported?	NS				0.00	0.00		1.00				0.00						
Are multiple page documents supported by the proposed software?	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
If YES, is manual control required?																		
Does the proposed software support multiple page document scanning using "marker" pages or symbols?	NS				0.00	0.00		1.00				0.00						
Please indicate the scanner image types supported -	-																	
BMP Windows/OS-2 bit-mapped graphics:	NS				0.00	0.00		1.00				0.00						
CGM Computer Graphics Metafile:	NS				0.00	0.00		1.00				0.00						
GIF CompuServe Graphic Interchange Format:	NS				0.00	0.00		1.00				0.00						
IMG GEM Paint:	NS				0.00	0.00		1.00				0.00						
JPG (Joint Photographics Expert Group):	NS				0.00	0.00		1.00				0.00						
JPEG (Joint Photographics Expert Group):	NS				0.00	0.00		1.00				0.00						
Is CCITT Group 3 & 4 compression supported:	NS				0.00	0.00		1.00				0.00						
PCD Kodak Photo CD:	NS				0.00	0.00		1.00				0.00						
TIF (Tagged Image File)	NS				0.00	0.00		1.00				0.00						
TIFF (Tagged Image File Format)	NS				0.00	0.00		1.00				0.00						
TIF(F) file versions supported:	NS				0.00	0.00		1.00				0.00						
Other:	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
If "OTHER" is indicated in the previous question, please list that information in the Response column:																		
Is a "form removal" function available within the planned system?"	NS				0.00	0.00		1.00				0.00						
	-																	
(Return to TOP)	-																	
Batch Management:	-																	
Does the software allow users to set up document batch classes and identify specific types of documents and forms?	NS				0.00	0.00		1.00				0.00						
Please indicate if the software provide batch setup process that allows an operator to:	-																	
• Using a system defaulted batch identification code.	NS				0.00	0.00		1.00				0.00						
• Select document types from a drop-down list of document types or classes.	NS				0.00	0.00		1.00				0.00						
• Setup a batch of mixed document types &	NS				0.00	0.00		1.00				0.00						
• Enter comments/description about a batch.	NS				0.00	0.00		1.00				0.00						
• Define a priority for the batch.	NS				0.00	0.00		1.00				0.00						
Does the software provide an automatic identification feature that recognizes each document and form type as it is scanned?	NS				0.00	0.00		1.00				0.00						
Is the proposed software capable of simultaneous output of color and bitonal images?	NS				0.00	0.00		1.00				0.00						
Does the proposed software provide electronically selectable color drop out?	NS				0.00	0.00		1.00				0.00						
Does the proposed software enable the user to establishes different processing steps depending on the type of document and form?	NS				0.00	0.00		1.00				0.00						
Does the proposed system include the following options:	-																	
• type of recognition technology:	NS				0.00	0.00		1.00				0.00						
• rendering format(s):	NS				0.00	0.00		1.00				0.00						
• metadata schema:	NS				0.00	0.00		1.00				0.00						
• validation steps:	NS				0.00	0.00		1.00				0.00						
• quality control steps:	NS				0.00	0.00		1.00				0.00						
• release processing:	NS				0.00	0.00		1.00				0.00						
Does the proposed software sort the completed images into the proper queue for further processing?	NS				0.00	0.00		1.00				0.00						
Does the software provides completion status reports?	NS				0.00	0.00		1.00				0.00						

Does the proposed software allow users to monitor the time required to complete the Scanning-Quality Control-Metadata cycle for a specific batch, for all batches scanned on a specific day, or for batches that completed a particular queue on a specific day?	NS				0.00	0.00		1.00				0.00									
	-																				
(Return to TOP)	-																				
OCR Capabilities:	-																				
Is Optical Character Recognition (OCR) an integral part of the proposed software?	NS				0.00	0.00		1.00				0.00									
What is the average character recognition accuracy of the OCR in the proposed system?	NS				0.00	0.00		1.00				0.00									
Are all documents AUTOMATICALLY passed through the OCR during the entry or capture process, or must the user perform the OCR step discretely?	NS				0.00	0.00		1.00				0.00									
Can the OCR facility be made to process just specific portions of the image (sometimes called Point & Shoot" or "Zone Capture" OCR), to identify text data that always appears in the same spot, and then have this data placed in a certain database field?"	NS				0.00	0.00		1.00				0.00									
Can the proposed software automatically implement multiple OCR zone capture commands during document entry, so that the text data needed for multiple key (index) fields is obtained and stored in the applicable fields?	NS				0.00	0.00		1.00				0.00									
Is a Full Text Indexing facility available once the document has been processed by the OCR?	NS				0.00	0.00		1.00				0.00									
Describe any special preparation required to search for, retrieve, or view documents over the Web or in-house via a Web browser																					
	-																				
(Return to TOP)	-																				
DOCUMENT PROCESSING:	-																				
	-																				
Automated Indexing Capabilities:	-																				
Describe the backend third party databases supported:																					
Are transparent links to standard SQL databases provided?	NS				0.00	0.00		1.00				0.00									
Which of the following INDEXING methods are supported:	-																				
by Author?	NS				0.00	0.00		1.00				0.00									
by last activity date?	NS				0.00	0.00		1.00				0.00									
by Creation Date?	NS				0.00	0.00		1.00				0.00									
by Document Number?	NS				0.00	0.00		1.00				0.00									
by Category?	NS				0.00	0.00		1.00				0.00									
by Keywords?	NS				0.00	0.00		1.00				0.00									
Can the proposed software index an entire column and all of it's entries?	NS				0.00	0.00		1.00				0.00									
Does the proposed system support point & shoot" indexing, also known as "spot" or "zone" indexing?"	NS				0.00	0.00		1.00				0.00									
Is "trigger" oriented indexing supported by the proposed system?"	NS				0.00	0.00		1.00				0.00									
Is Indexing by Schedule supported by the proposed software?	NS				0.00	0.00		1.00				0.00									
Is Indexing by Subject supported by the proposed software?	NS				0.00	0.00		1.00				0.00									
Is Indexing by User-defined category supported by the proposed software?	NS				0.00	0.00		1.00				0.00									
How many index (key) fields may be defined by the user?																					
	-																				
(Return to TOP)	-																				
Metadata:	-																				
In the proposed software, is Metadata assigned based on user-defined business rules and security	NS				0.00	0.00		1.00				0.00									
Does the software provides conventional metadata tags?	NS				0.00	0.00		1.00				0.00									
Does the proposed system provide conventional taxonomy tags?	NS				0.00	0.00		1.00				0.00									
Please indicate if the Document coding supported by the proposed software includes:	-																				
• a date/time stamp when the metadata was	NS				0.00	0.00		1.00				0.00									
• a date/time stamp when the metadata was modified:	NS				0.00	0.00		1.00				0.00									
• geospatial references when appropriate:	NS				0.00	0.00		1.00				0.00									
• rules for managing document life-cycle:	NS				0.00	0.00		1.00				0.00									
• the document's retention schedule:	NS				0.00	0.00		1.00				0.00									
• Other:	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
If "OTHER" is indicated in the previous question, please list that information in the Response column:																					
Does the software provide the ability to delete and modify the taxonomy structure and metadata tags once they have been assigned to a document?	NS				0.00	0.00		1.00				0.00									
Does the proposed software provide the ability to delete and modify the taxonomy structure and metadata tags once they have been assigned to a document?	NS				0.00	0.00		1.00				0.00									

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Report Generation:	-												
Name or describe the Search Engine used in the proposed system.													
Name or describe the search method used to retrieve document Profile information?													
Name or describe the Full Text Engine or method used by the system:													
Can reports export information?	NS	0.00	0.00	1.00				0.00					
Does the proposed system allow user-definable report formats?	NS	0.00	0.00	1.00				0.00					
The following NOTES apply to the next question relating to Report availability	-												
Please indicate which of the basic report topics listed below are offered by the proposed system:	-												
Files Deletion activity reporting?	NS	0.00	0.00	1.00				0.00					
Files Archived reporting?	NS	0.00	0.00	1.00				0.00					
Files Accessed Reporting?	NS	0.00	0.00	1.00				0.00					
Document Entries by User?	NS	0.00	0.00	1.00				0.00					
System Configuration Reporting?	NS	0.00	0.00	1.00				0.00					
Document Storage Mapping?	NS	0.00	0.00	1.00				0.00					
User Configuration (if needed)	NS	0.00	0.00	1.00				0.00					
Configuration Changes Report?	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
Archiving Capabilities:	-												
The proposed software allows documents to be selected for archiving (backup) by:	-												
by Customer (client)?	NS	0.00	0.00	1.00				0.00					
by Creation Date?	NS	0.00	0.00	1.00				0.00					
by Document Number?	NS	0.00	0.00	1.00				0.00					
by Author?	NS	0.00	0.00	1.00				0.00					
by Last Edit Date?	NS	0.00	0.00	1.00				0.00					
by Keywords?	NS	0.00	0.00	1.00				0.00					
by Category?	NS	0.00	0.00	1.00				0.00					
by User-defined date range?	NS	0.00	0.00	1.00				0.00					
by User-defined Field or category?	NS	0.00	0.00	1.00				0.00					
by DOS filename?	NS	0.00	0.00	1.00				0.00					
Does the proposed software rely on the network for archiving functions or does the software include it's own?	NS	0.00	0.00	1.00				0.00					
Which of the following will the proposed software automatically archive documents to:	-												
to Other Servers?	NS	0.00	0.00	1.00				0.00					
to a Bernoulli Box?	NS	0.00	0.00	1.00				0.00					
to Tape?	NS	0.00	0.00	1.00				0.00					
to an Optical Disk?	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
Purging Capabilities:	-												
Please indicate which of the following document purging functions are provided by the proposed system:	-												
by Date Range or specific date?	NS	0.00	0.00	1.00				0.00					
by specific Customer (client)?	NS	0.00	0.00	1.00				0.00					
by specific Author?	NS	0.00	0.00	1.00				0.00					
by specifying a Subject code?	NS	0.00	0.00	1.00				0.00					
May more than one purge control topic be combined? An example would be to purge all documents written by X between two dates". "	NS	0.00	0.00	1.00				0.00					
	-												
(Return to TOP)	-												
WORK FLOW PROCESSING:	-												
	-												
General Features:	-												
Does the proposed workflow product require an application server?	NS	0.00	0.00	1.00				0.00					
Can the proposed system export to XML?	NS	0.00	0.00	1.00				0.00					
Is process data maintained internally as XML by the proposed system?	NS	0.00	0.00	1.00				0.00					
Can the proposed system act as a Web-enabled Services platform to request, broker, and deliver Web services?	NS	0.00	0.00	1.00				0.00					
Please use a YES answer to indicate which of the following standards are supported by the proposed software:	-												
Hypertext Markup Language (HTML):	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Document Type Definitions (DTDs):	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Extensible Markup Language (XML):	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Extensible Stylesheet Language Transformation (XSLT):	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
XML Schemas:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JavaServer Pages (JSP):	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Web Service Definition Language (WSDL)?	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use a YES response to indicate which of the following Business Process Management (BPM) standards the proposed software supports:	-												
WARIA:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WfMC:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BPMi:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WfXML:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UDDI:	N	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Does the proposed software provide a "point and click" wizards for management reporting function?	NS				0.00	0.00		1.00				0.00							
Is a rules editor to enhance or modify the rules engine provided by the proposed system?	NS				0.00	0.00		1.00				0.00							
Is full scripting support provided by the software being proposed?	NS				0.00	0.00		1.00				0.00							
Can the proposed system be customized via XML without any programming skills?	NS				0.00	0.00		1.00				0.00							
Does the proposed software enable the creation of multiple user interfaces to process information? For example, could each department manager set the user interface to display the information commonly accessed by his/her department?	NS				0.00	0.00		1.00				0.00							
Are pre-defined templates for industry standard processes included in the proposed system?	NS				0.00	0.00		1.00				0.00							
Does the proposed system provide automatic Web form generation?	NS				0.00	0.00		1.00				0.00							
Does the proposed software provide a pre-defined facility for routing work to those entities (people or systems) with the least amount of current work?	NS				0.00	0.00		1.00				0.00							
	-																		
(Return to TOP)	-																		
User Interface:	-																		
Does the proposed software utilize a single user interface (UI) across all process participant work areas such as process definition, management, process monitoring, and reporting?	NS				0.00	0.00		1.00				0.00							
If supported on multiple platforms, is the UI consistent regardless of the platform type, with only small, cosmetic variations?	NS				0.00	0.00		1.00				0.00							
Is the proposed system's user interface (UI) completely web-based?	NS				0.00	0.00		1.00				0.00							
Is the proposed system's user interface (UI) a combination of server-based or Web-based applications depending on the function being used?	NS				0.00	0.00		1.00				0.00							
Are advanced search functions for easily searching for and retrieving specific process and system related data provided by the proposed software?	NS				0.00	0.00		1.00				0.00							
Does the proposed software provide a single "control panel" type screen enabling properly authorized users to access, control, or perform many, if not all, key system functions?	NS				0.00	0.00		1.00				0.00							
Does the proposed system's "control panel" screen allow an authorized user to access operational areas such as:	-																		
Access new work to process	NS				0.00	0.00		1.00				0.00							
Start existing processes	NS				0.00	0.00		1.00				0.00							
Monitor process performance	NS				0.00	0.00		1.00				0.00							
View the status of existing processes:	NS				0.00	0.00		1.00				0.00							
Generate reports:	NS				0.00	0.00		1.00				0.00							
View reports:	NS				0.00	0.00		1.00				0.00							
Configure "out-of-office" dates:	NS				0.00	0.00		1.00				0.00							
Determine where work should be sent when the primary recipient is "out-of-office":	NS				0.00	0.00		1.00				0.00							
Does the proposed system's "control panel" screen allow an authorized user to access administrative areas such as:	-																		
Test new processes in simulated environments:	NS				0.00	0.00		1.00				0.00							
Deploy new processes:	NS				0.00	0.00		1.00				0.00							
Create supporting electronic forms for new or existing processes:	NS				0.00	0.00		1.00				0.00							
Manage user privileges:	NS				0.00	0.00		1.00				0.00							
Manage user roles:	NS				0.00	0.00		1.00				0.00							
Manage security:	NS				0.00	0.00		1.00				0.00							
	-																		
(Return to TOP)	-																		
Process Design Tools:	-																		
Does the proposed software enable an authorized user to specify the business process rules to be used?	NS				0.00	0.00		1.00				0.00							
Is a graphical flowcharting tool made available to the user for creation of business process rules and workflow using a "drag and drop" action?	NS				0.00	0.00		1.00				0.00							
Does the proposed software provide the ability to setup timers and alarms, within the workflow process being defined, to alert users of impending deadlines?	NS				0.00	0.00		1.00				0.00							
Is a graphical, drag & drop, point & click design workflow modeling environment provided by the proposed software?	NS				0.00	0.00		1.00				0.00							
Does the proposed software's process design facility use "check-in/check-out" rules to ensure workflow design integrity?	NS				0.00	0.00		1.00				0.00							

Does the proposed system provide built-in property editors to configure automatic activity information such as:	-																					
Business rules:	NS				0.00	0.00		1.00				0.00										
Routing logic:	NS				0.00	0.00		1.00				0.00										
Actors:	NS				0.00	0.00		1.00				0.00										
Actions:	NS				0.00	0.00		1.00				0.00										
Deadlines:	NS				0.00	0.00		1.00				0.00										
Escalation rules:	NS				0.00	0.00		1.00				0.00										
Priority levels:	NS																					
Does the proposed system provide built-in property editors to configure rules governing manual activity in the following areas:	-																					
Business Rules:	NS				0.00	0.00		1.00				0.00										
Routing logic:	NS				0.00	0.00		1.00				0.00										
Actors:	NS				0.00	0.00		1.00				0.00										
Actions:	NS				0.00	0.00		1.00				0.00										
Deadlines:	NS				0.00	0.00		1.00				0.00										
Escalation rules:	NS				0.00	0.00		1.00				0.00										
Priority levels:	NS				0.00	0.00		1.00				0.00										
	-																					
[Return to TOP]	-																					
Process Definition Capabilities:	-																					
Are pre-defined, built-in tasks provided by the proposed software for	-																					
Looping:	NS				0.00	0.00		1.00				0.00										
Branching:	NS				0.00	0.00		1.00				0.00										
Email:	NS				0.00	0.00		1.00				0.00										
Is full sub-workflow (sub-process) support provided by the system being proposed?	NS				0.00	0.00		1.00				0.00										
Can the workflow needed to address errors and omissions be modeled using the proposed software?	NS				0.00	0.00		1.00				0.00										
Does the proposed system provide the ability to embed exception handling processes into the workflow being defined?	NS				0.00	0.00		1.00				0.00										
Does the proposed system enable modeling multiple escalation workflows based on problem type?	NS				0.00	0.00		1.00				0.00										
Is parameterized email creation and use fully supported by the proposed software?	NS				0.00	0.00		1.00				0.00										
Is a full workflow simulation capability provided by the proposed software?	NS				0.00	0.00		1.00				0.00										
Does the proposed system utilize distinct process instances (or versioning) where each individual parent process invocation will have its own, full, dedicated process instances? (i.e., will a process definition change affect work in progress?)	NS				0.00	0.00		1.00				0.00										
Does the proposed software support Asynchronous Interaction with external third-party systems, i.e., can it initiate work in the external system then proceed onward without an acknowledgement or response from the other system?	NS				0.00	0.00		1.00				0.00										
Does the proposed software support Synchronous Interaction with external third-party systems, i.e., can it suspend a process until the external system responds?	NS				0.00	0.00		1.00				0.00										
	NS				0.00	0.00		1.00				0.00										
Is the ability to capture the transaction status codes needed to ensure workflow system integrity provided by the proposed system?	NS																					
If YES, please explain:	NS																					
Can "timeout" code from third-party systems in the workflow be received and logged by the proposed software?	NS				0.00	0.00		1.00				0.00										
Can failure code from third-party systems in the workflow be received and logged by the proposed software?	NS				0.00	0.00		1.00				0.00										
Is the ability to use third-party system timeout and failure codes as the "trigger" codes of other process within a given workflow system provided by the proposed software?	NS				0.00	0.00		1.00				0.00										
Indicate which of the following actions can be triggered by another system's timeout/failure codes:	-																					
Failover processes:	NS				0.00	0.00		1.00				0.00										
Alerts:	NS				0.00	0.00		1.00				0.00										
Rules-based events:	NS				0.00	0.00		1.00				0.00										
Retransmissions:	NS				0.00	0.00		1.00				0.00										
Queries:	NS				0.00	0.00		1.00				0.00										
Escalations:	NS				0.00	0.00		1.00				0.00										
Can third-party timeout and failure codes by used by the proposed software in	-																					
Configurable user interfaces:	NS				0.00	0.00		1.00				0.00										
Reports:	NS				0.00	0.00		1.00				0.00										
Graphical process maps:	NS				0.00	0.00		1.00				0.00										
Search lists:	NS				0.00	0.00		1.00				0.00										
Does the proposed system support dynamic process variables that provide real-time stat change as the workflow progresses?	NS				0.00	0.00		1.00				0.00										
Does the proposed software support multiple variable types?	NS				0.00	0.00		1.00				0.00										
Please indicate which variable types are supported by the proposed software	-																					
Number:	NS				0.00	0.00		1.00				0.00										
Date:	NS				0.00	0.00		1.00				0.00										
Number:	NS				0.00	0.00		1.00				0.00										
String:	NS				0.00	0.00		1.00				0.00										

Does the proposed software provide a way to cross-reference one variable name to another when two different processes reference the same variable under different names?	NS				0.00	0.00		1.00				0.00						
Has the proposed software ever been tested and approved (certified) for deployment to large numbers of users?	NS				0.00	0.00		1.00				0.00						
Who was the testing company?																		
How large a deployment was the software tested for?																		
	-																	
(Return to TOP)	-																	
Electronic Forms Support:	-																	
Can the proposed software utilize electronic forms created by third-party applications?	NS				0.00	0.00		1.00				0.00						
Please indicate which of the following can create forms compatible and usable by the proposed system:	-																	
Word	NS				0.00	0.00		1.00				0.00						
Excel	NS				0.00	0.00		1.00				0.00						
Adobe	NS				0.00	0.00		1.00				0.00						
Please describe the extent to which forms created in these third-party applications can be utilized.																		
Is a forms design function for creating interactive electronic forms, to be accessed by workflow participants, provided by the proposed system?	NS				0.00	0.00		1.00				0.00						
Can the forms designer create new forms?	NS				0.00	0.00		1.00				0.00						
Can the forms designer utilize forms created by a third-party application?	NS				0.00	0.00		1.00				0.00						
Can the forms designer add intelligent functionality for data pre-population to new or existing forms?	NS				0.00	0.00		1.00				0.00						
Can the forms designer add electronic signature functionality to new or existing forms?	NS				0.00	0.00		1.00				0.00						
Can the forms designer add math calculation functionality to new or existing forms?	NS				0.00	0.00		1.00				0.00						
Can the forms designer add drop-down list functionality to new or existing forms?	NS				0.00	0.00		1.00				0.00						
Can the forms designer add check box functionality to new or existing forms?	NS				0.00	0.00		1.00				0.00						
	-																	
(Return to TOP)	-																	
Routing Rules:	-																	
Does the proposed software provide the ability to define rules that split the execution path of a process into two or more parallel paths?	NS				0.00	0.00		1.00				0.00						
Can the separate paths of a specific process be joined at a specific point?	NS				0.00	0.00		1.00				0.00						
Can data from each path be merged together (consolidated into a single document)?	NS				0.00	0.00		1.00				0.00						
Can a process with multiple starting and ending points be defined using the proposed software?	NS				0.00	0.00		1.00				0.00						
A process can be triggered in the proposed system by which of the following:	-																	
A event in an external system?	NS				0.00	0.00		1.00				0.00						
File transfer?	NS				0.00	0.00		1.00				0.00						
Application launch?	NS				0.00	0.00		1.00				0.00						
Database event?	NS				0.00	0.00		1.00				0.00						
HTTP post?	NS				0.00	0.00		1.00				0.00						
If other events can be detected, please list:	NS				0.00	0.00		1.00				0.00						
Can the same process be ended in multiple ways, using different sub-processes based on a given value?	NS				0.00	0.00		1.00				0.00						
Does the proposed software provide facilities for ad-hoc routing?	NS				0.00	0.00		1.00				0.00						
Does the software provide the ability to select desired information recipient(s) from a pre-defined drop-down list?	NS				0.00	0.00		1.00				0.00						
Please indicate with a YES response if the following can be used as a recipient in an ad-hoc routing situation:	-																	
Users:	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Departments:	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Positions (roles):	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Groups:	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	-																	
(Return to TOP)	-																	
Event Response Functions:	-																	
Can the proposed software detect external events and then initiate and/or complete a specified process?	NS																	
Can the proposed system detect and respond to events such as a:	-					0.00												
File transfer?	NS				0.00	0.00		1.00				0.00						
Application launch?	NS				0.00	0.00		1.00				0.00						
Database event?	NS				0.00	0.00		1.00				0.00						
HTTP Post?	NS				0.00	0.00		1.00				0.00						
If other events can be detected please list:	NS				0.00	0.00		1.00				0.00						
Can the proposed software launch another application in reaction to a specified event?	NS				0.00	0.00		1.00				0.00						
	-																	
(Return to TOP)	-																	

Manual Activity Interface:	-																			
Does the proposed software provide pre-defined process modeling tools for including manual activities such as decision making, data entry, information review, and other activities requiring human intervention?	NS				0.00	0.00		1.00				0.00								
Can manual activities be assigned an icon of their own for use in a graphical process design process?	NS				0.00	0.00		1.00				0.00								
Can manual activities be assigned to a job position, or employee group, rather than a specific person if needed?	NS				0.00	0.00		1.00				0.00								
Can an electronic form(s) be setup to appear at each manual activity in the workflow process definition?	NS				0.00	0.00		1.00				0.00								
Can a specific application be setup to be launched (executed) at each manual activity in the workflow process definition?	NS				0.00	0.00		1.00				0.00								
Are applications such as Word, MS Outlook, and Adobe supported by the proposed software?	NS				0.00	0.00		1.00				0.00								
Can a priority be assigned to a manual activity within a specific workflow?	NS				0.00	0.00		1.00				0.00								
Can a priority be assigned specific relative deadline (cycle time) within a specific workflow?	NS				0.00	0.00		1.00				0.00								
Can a priority be assigned an expiration deadline within a specific workflow?	NS				0.00	0.00		1.00				0.00								
Can a manual activity reminder be setup within a specific workflow?	NS				0.00	0.00		1.00				0.00								
Can a priority be assigned a specific escalation action after a deadline or expiration date has passed, within a specific workflow?	NS				0.00	0.00		1.00				0.00								
Are nested processes fully supported by the proposed software?	NS				0.00	0.00		1.00				0.00								
Can department-level processes be embedded into larger, entity-wide processes?	NS				0.00	0.00		1.00				0.00								
Can a higher-level (parent) process pass its variables to its embedded sub-processes?	NS				0.00	0.00		1.00				0.00								
Can a parent process pass its attachments to its embedded sub-processes?	NS				0.00	0.00		1.00				0.00								
Can a higher-level (parent) process pass its comments to its embedded sub-processes?	NS				0.00	0.00		1.00				0.00								
Does the proposed software support nested procedures even across multiple server clusters?	NS				0.00	0.00		1.00				0.00								
	-																			
(Return to TOP)	-																			
Enterprise Integration:	-																			
Can the proposed software access and utilize information from LDAP compliant systems?	NS				0.00	0.00		1.00				0.00								
Can Microsoft Project plans be imported into, and utilized by, the proposed software system?	NS				0.00	0.00		1.00				0.00								
Can Visio shapes and diagrams be imported into the proposed system?	NS				0.00	0.00		1.00				0.00								
Can the proposed system provide functionality that can be easily embedded in a Web or intranet portal?	NS				0.00	0.00		1.00				0.00								
Can the proposed system be deployed through the ADO.Net framework?	NS				0.00	0.00		1.00				0.00								
Does the proposed software fully support the integration and use of applications built within the .Net environment?	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
If YES, please explain in more detail in the																				
is XML supported by the proposed system?	NS				0.00	0.00		1.00				0.00								
Is WSDL supported by the proposed software?	NS				0.00	0.00		1.00				0.00								
Is UDDI supported by the proposed system?	NS				0.00	0.00		1.00				0.00								
	-																			
ENTERPRISE SYSTEM SUPPORT	-																			
For the purpose of the next several questions, the meaning of the term "integration" is the ability to actually invoke work processes in the outside system AND to perform updates to the outside system's database, i.e., actual process control integration.	-																			
Can the proposed system fully support and enable integration with SAP systems?	NS				0.00	0.00		1.00				0.00								
Version Restrictions:																				
Can the proposed system fully support and enable integration with Siebel systems?	NS				0.00	0.00		1.00				0.00								
Version Restrictions:																				
Can the proposed system fully support and enable integration with PeopleSoft systems?	NS				0.00	0.00		1.00				0.00								
Version Restrictions:																				
List any other systems the proposed system fully supports and enables integration with.																				

Does the proposed system provide an API or agent or other method for integrating with other third-party systems by parties other than the vendor?	N																			
If YES, please explain in more detail in the Response column.																				
	-																			
DATABASE INTEGRATION	-																			
Does the proposed system fully support Oracle database products?	NS			0.00	0.00		1.00				0.00									
Version Restrictions:																				
Does the proposed system fully support the DB2 database?	NS			0.00	0.00		1.00				0.00									
Version Restrictions:																				
Does the proposed system fully support the SQL Server database?	NS			0.00	0.00		1.00				0.00									
Version Restrictions:																				
Does the proposed software fully support MySQL?	NS			0.00	0.00		1.00				0.00									
Version Restrictions:																				
Does the proposed software fully support the Sybase database?	NS			0.00	0.00		1.00				0.00									
Version Restrictions:																				
Please list any other databases that are fully supported by the proposed system.																				
	-																			
DOCUMENT MANAGEMENT SYSTEMS	-																			
Can the proposed system fully support and enable integration with the Hummingbird EDMS product?	NS			0.00	0.00		1.00				0.00									
Version Restrictions:																				
Can the proposed system fully support and enable integration with Documentum?	NS			0.00	0.00		1.00				0.00									
Version Restrictions:																				
Can the proposed system fully support and enable integration with Formtek systems?	NS			0.00	0.00		1.00				0.00									
Version Restrictions:																				
Please list any other document management systems that are compatible with and fully supported by the proposed software:																				
	-																			
EAI SPECIFIC PRODUCTS	-																			
Is a standard interface for BizTalk provided by the proposed software?	NS			0.00	0.00		1.00				0.00									
Is a standard interface for Vitria provided by the proposed software?	NS			0.00	0.00		1.00				0.00									
Does the proposed system provide an API or agent or other method for integrating with other third-party EAI systems by parties other than the vendor?	NS			0.00	0.00		1.00				0.00									
If YES, please explain in more detail in the Response column.																				
	-																			
SUPPORTED MESSAGING PRODUCTS	-																			
Does the proposed software provide adapters for the IBM MQ Series messaging product?	NS			0.00	0.00		1.00				0.00									
Does the proposed software provide adapters for the MS MQ Series messaging product?	NS			0.00	0.00		1.00				0.00									
	-																			
[Return to TOP]	-																			
Process Monitoring & Status Reporting:	-																			
Using the proposed system, can authorized users take advantage of graphical process monitoring to view the status of work in progress?	NS			0.00	0.00		1.00				0.00									
Are graphical icons used to show the status and execution path of a workflow process at any time?	NS			0.00	0.00		1.00				0.00									
Please indicate with a YES answer if the following process information detail is provided:	-																			
Date & Time Received:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Status:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Urgency:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Priority:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Date & Time Due:	N			0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Does the proposed software make the following information available to duly authorized users about current work:	-																			
Current status:	NS			0.00	0.00		1.00				0.00									
Who is working on it currently:	NS			0.00	0.00		1.00				0.00									
Who has worked on it:	NS			0.00	0.00		1.00				0.00									
Execution path:	NS			0.00	0.00		1.00				0.00									
Processing time for each step:	NS			0.00	0.00		1.00				0.00									
	-				0.00															
STANDARD STATUS REPORTS	-				0.00															
Please indicate with a YES response which of the following types of reports are provided ready-to-use with the proposed software:	-																			
Benchmarking:	NS			0.00	0.00		1.00				0.00									
Workload:	NS			0.00	0.00		1.00				0.00									
Status:	NS			0.00	0.00		1.00				0.00									
Throughput Analysis:	NS			0.00	0.00		1.00				0.00									

Ad-hoc Search Analysis:	NS				0.00	0.00		1.00				0.00							
Does the proposed software enable users to "drill down" from a high-level process view to the individual activity detail level?	NS				0.00	0.00		1.00				0.00							
	-																		
REPORTING TOOL INTEGRATION	-																		
Can the proposed software interface with and utilize Crystal Reports at specified points within a given workflow process?	NS				0.00	0.00		1.00				0.00							
Can the proposed software export process data to Crystal Reports?	NS				0.00	0.00		1.00				0.00							
Can the proposed software interface with and utilize Excel spreadsheets at specified points within a given workflow process?	NS				0.00	0.00		1.00				0.00							
Can the proposed software export process data to Excel?	NS				0.00	0.00		1.00				0.00							
Can the proposed software interface with and utilize any OLAP tool at specified points within a given workflow process?	NS				0.00	0.00		1.00				0.00							
Can the proposed software export process data to OLAP tools?	NS				0.00	0.00		1.00				0.00							
	-																		
(Return to TOP)	-																		
Testing and Validation:	-																		
Can a new workflow process be published in "test" mode	NS				0.00	0.00		1.00				0.00							
	-																		
(Return to TOP)	-																		
Archiving:	-																		
Does the proposed software archive each instance of a process upon completion?	NS				0.00	0.00		1.00				0.00							
Are all process data elements, comments, and attached documents archived and made accessible for use in the future?	NS				0.00	0.00		1.00				0.00							
	-																		
(Return to TOP)	-																		
DOCUMENT RETRIEVAL:	-																		
	-																		
Is a database management approach using key fields the foundation of the proposed system's document retrieval process?	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Is the database pre-defined?	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
If the proposed system's database is pre-defined, how many KEY fields are provided for conducting various document searches with?																			
	-																		
(Return to TOP)	-																		
Search Functions:	-																		
Does the proposed system offer a full text search function to retrieve documents with?	NS				0.00	0.00		1.00				0.00							
Can the user fully define the field names, field types, field lengths, and whether or not the field is an index field used in document retrieval queries, in the database needed for each application?	NS				0.00	0.00		1.00				0.00							
Are descriptive filenames of an extended length used to convey extra information about the contents of each document file?	NS				0.00	0.00		1.00				0.00							
Can non-text content be queried?	NS				0.00	0.00		1.00				0.00							
Can the proposed system support searches across multiple networks?	NS				0.00	0.00		1.00				0.00							
Does the proposed software allow one search to be nested" within another search?"	NS				0.00	0.00		1.00				0.00							
Does the proposed software include a sophisticated retrieval query engine that offers Boolean operators?	NS				0.00	0.00		1.00				0.00							
Does the proposed software include a sophisticated retrieval query engine allowing user defined search variables?	NS				0.00	0.00		1.00				0.00							
Can documents be searched for by author?	NS				0.00	0.00		1.00				0.00							
May a document search extend across multiple system volumes?	NS				0.00	0.00		1.00				0.00							
May documents be retrieved using a specific or a range of document creation dates?	NS				0.00	0.00		1.00				0.00							
Are wildcard searches offered by the proposed system?	NS				0.00	0.00		1.00				0.00							
Can a search be performed using a pre-defined subject code?	NS				0.00	0.00		1.00				0.00							
Does the proposed system offer a phonetic search capability?	NS				0.00	0.00		1.00				0.00							
Does the proposed system allow searches by user-defined category?	NS				0.00	0.00		1.00				0.00							

Is pattern matching a supported search method offered by the system?	NS				0.00	0.00		1.00				0.00						
Can documents be searched for by KEYWORDS?	NS				0.00	0.00		1.00				0.00						
Can documents be searched for by document number?	NS				0.00	0.00		1.00				0.00						
Can documents be searched for using FUZZY logic?	NS				0.00	0.00		1.00				0.00						
Can documents be searched for by client (customer)?	NS				0.00	0.00		1.00				0.00						
Are CONCEPTUAL searches offered by the proposed system?	NS				0.00	0.00		1.00				0.00						
Does the proposed software support document searches employing a RANGE of dates?	NS				0.00	0.00		1.00				0.00						
Can documents be searched for using a combination of document profile variables such as AUTHOR, CREATION DATE, etc., and keyword or phrase variables?	NS				0.00	0.00		1.00				0.00						
What is the maximum number of Boolean operators allowed in any one search formula?																		
Can more than one user search for and retrieve the same document at the same time?	NS				0.00	0.00		1.00				0.00						
Can documents located at remote sites be retrieved?	NS				0.00	0.00		1.00				0.00						
Are query agents" available to automatically detect when new documents meeting query criteria are available?"	NS				0.00	0.00		1.00				0.00						
Can document retrieval queries be made from portable computers?	NS				0.00	0.00		1.00				0.00						
Can both INTER and INTRA company boundaries be spanned for or by retrieval requests from 1 application?	NS				0.00	0.00		1.00				0.00						
Can the documents listed in response to a specific query be browsed and verified as to their relevance?	NS				0.00	0.00		1.00				0.00						
Is a facility provided for VIEWING a document without the application software that created it on-line?	NS				0.00	0.00		1.00				0.00						
Can query response lists be filtered by user permission level - only show results the user is authorized to see?	NS				0.00	0.00		1.00				0.00						
Are personal folders containing checked out documents available on the desktop?	NS				0.00	0.00		1.00				0.00						
Is a Form Overlay" function provided by the proposed software?"	NS				0.00	0.00		1.00				0.00						
Can the document search and retrieval queries be saved and re-used at a later time?	NS				0.00	0.00		1.00				0.00						
Support for integration of universal servers from RDMS vendors ((cartridges or data blades)?	NS				0.00	0.00		1.00				0.00						
Can multiple users access the SAME document at the SAME time?	NS				0.00	0.00		1.00				0.00						
Do the queries return the goodness" of fit for each item offered in response to a query?"	NS				0.00	0.00		1.00				0.00						
Is the capability for converting one text format to another provided by the proposed system?	NS				0.00	0.00		1.00				0.00						
Are document viewing capabilities provided for the following:	-																	
Amipro, the Windows version only	NS				0.00	0.00		1.00				0.00						
Amipro, the DOS version only	NS				0.00	0.00		1.00				0.00						
DOS WordPerfect only	NS				0.00	0.00		1.00				0.00						
WordPerfect for Windows	NS				0.00	0.00		1.00				0.00						
Quattro Pro:	NS				0.00	0.00		1.00				0.00						
Microsoft Word for Windows	NS				0.00	0.00		1.00				0.00						
Lotus 1-2-3 for Windows only	NS				0.00	0.00		1.00				0.00						
Lotus 1-2-3 for DOS only	NS				0.00	0.00		1.00				0.00						
Microsoft Excel	NS				0.00	0.00		1.00				0.00						
ASCII files?	NS				0.00	0.00		1.00				0.00						
Is a viewer for vector graphics files available within the proposed system or from third parties?	NS				0.00	0.00		1.00				0.00						
Is a viewer for bitmapped graphics files available within the proposed system or from third parties?	NS				0.00	0.00		1.00				0.00						
Please indicate which of the third-party file viewers listed below are supported by the proposed software:	-																	
• MS Access Viewer:	NS				0.00	0.00		1.00				0.00						
• MS Excel Viewer:	NS				0.00	0.00		1.00				0.00						
• MS Outlook Viewer:	NS				0.00	0.00		1.00				0.00						
• MS PowerPoint Viewer	NS				0.00	0.00		1.00				0.00						
• MS Visio Viewer:	NS				0.00	0.00		1.00				0.00						
• MS Word Viewer:	NS				0.00	0.00		1.00				0.00						
• Adobe Viewer:	NS				0.00	0.00		1.00				0.00						
• Autovue:	NS				0.00	0.00		1.00				0.00						
• Cadlock:	NS				0.00	0.00		1.00				0.00						
• ClikView:	NS				0.00	0.00		1.00				0.00						
• CSView:	NS				0.00	0.00		1.00				0.00						

• DBView:	NS				0.00	0.00		1.00				0.00										
• Fastlook:	NS				0.00	0.00		1.00				0.00										
• GSview:	NS				0.00	0.00		1.00				0.00										
• IrfanView32	NS				0.00	0.00		1.00				0.00										
• Volo View:	NS				0.00	0.00		1.00				0.00										
• Whip!:	NS				0.00	0.00		1.00				0.00										
• Other:	N				0.00	0.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
If "OTHER" is indicated in the previous question, please list that information in the Response column:																						
Does the proposed system offer Application Programming Interfaces (APIs) for utilizing the document repositories of other vendor's systems?	NS				0.00	0.00		1.00				0.00										
Does the proposed system offer gateways to the document repositories of competing systems?	NS				0.00	0.00		1.00				0.00										
Can more than one library (repository) be queried simultaneously?	NS				0.00	0.00		1.00				0.00										
Can libraries originally installed separately be merged into one?	NS				0.00	0.00		1.00				0.00										
Is the location of a document transparent to the user?	NS				0.00	0.00		1.00				0.00										
Please list the Web-enabled document search and retrieval functions that are supported?																						
Can a document be retrieved using a Web browser-based interface?	NS				0.00	0.00		1.00				0.00										
Please indicate which of the Web Browsers listed below are supported by the proposed software:	-																					
• AOL (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• CrystalPort (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Emacs@ (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Konqueror (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Icab (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Internet Explorer (current version):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Lynx (current version):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Mosaic (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Mozilla (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Neoplanet (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Netscape (current version):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Net-Tamer (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• OmniWeb (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Opera (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Phoenix (current versions):	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Safari:	NS				0.00	0.00		1.00				0.00										
- Oldest version supported (respond in Col C:)																						
• Other:	NS				0.00	0.00		1.00				0.00										
If "OTHER" is indicated in the previous question, please list that information in Column C:																						
Are searchable user-defined document profile fields displayed via the Web browser interface?	NS				0.00	0.00		1.00				0.00										
Are selected documents converted to HTML for real-time viewing, transmitted as images only for real-time viewing, or simply downloaded for viewing using a 3rd-party application at a later time?	NS																					
Can a full-text search be launched via a Web browser?	NS				0.00	0.00		1.00				0.00										
Describe how security is provided, encryption, etc..																						
	-																					
(Return to TOP)	-																					
ENTERPRISE REPORTING	-																					
	-																					
Does the proposed software support the capture of reports produced by popular legacy systems?	NS				0.00	0.00		1.00				0.00										
Can the proposed software automatically extract metadata from the captured reports?	NS				0.00	0.00		1.00				0.00										
Does the system support the bursting of pages and cross-referencing of those pages into specific folders?	NS				0.00	0.00		1.00				0.00										

Does the software provide the ability to search for specific values within the pages of a particular report?	NS				0.00	0.00		1.00				0.00							
Does the proposed software creates "exact replica" images of stored documents?	NS				0.00	0.00		1.00				0.00							
Does the proposed system allow for the inclusion of custom graphical elements suitable for internal or external reporting?	NS				0.00	0.00		1.00				0.00							
Does the proposed software provide user-defined templates to parse and deliver the data as finished documents?	NS				0.00	0.00		1.00				0.00							
Does the software allow users to define specific views of reports, based on criteria established in the set up of the proposed system and report-specific indices.	NS				0.00	0.00		1.00				0.00							
Can users specify automatic application hyperlinks within a specific report?	NS				0.00	0.00		1.00				0.00							
Does the software enable users to link specific information in other reports and documents by using some form of common indices or hyperlink?	NS				0.00	0.00		1.00				0.00							
	-																		
(Return to TOP)	-																		
SECURITY	-																		
	-																		
GLOBAL FUNCTIONS	-																		
	-																		
Is a multilevel password based security scheme provided by the proposed system?	NS				0.00	0.00		1.00				0.00							
Are passwords for each employee possible?	NS				0.00	0.00		1.00				0.00							
Are passwords for each document possible?	NS				0.00	0.00		1.00				0.00							
Are passwords for each department possible?	NS				0.00	0.00		1.00				0.00							
Are passwords for each corporation possible, assuming multiple corporations may be defined in the proposed software??	NS				0.00	0.00		1.00				0.00							
Does the proposed system automatically keep a system access log?	NS				0.00	0.00		1.00				0.00							
Is a log of FAILED password and other access attempts kept by the system?	NS				0.00	0.00		1.00				0.00							
	-																		
(Return to TOP)	-																		
FILE ACCESS RIGHTS	-																		
	-																		
The proposed system allows document access rights to be assigned by:	-																		
by Directory?	NS				0.00	0.00		1.00				0.00							
by Group?	NS				0.00	0.00		1.00				0.00							
by User?	NS				0.00	0.00		1.00				0.00							
by Document Category?	NS				0.00	0.00		1.00				0.00							
Does the proposed system's security function provide the following GROUP restrictions?	-																		
No Access rights?	NS				0.00	0.00		1.00				0.00							
Read Only rights?	NS				0.00	0.00		1.00				0.00							
Edit rights?	NS				0.00	0.00		1.00				0.00							
See Filename Only?	NS				0.00	0.00		1.00				0.00							
Does the proposed system's security function place the following restrictions on USERS?	-																		
No Access rights?	NS				0.00	0.00		1.00				0.00							
Read Only rights?	NS				0.00	0.00		1.00				0.00							
Edit rights?	NS				0.00	0.00		1.00				0.00							
See Filenames Only rights?	NS				0.00	0.00		1.00				0.00							
Does the proposed system provide it's OWN security function?	NS				0.00	0.00		1.00				0.00							
Does the proposed system rely solely on the host network's security system?	NS				0.00	0.00		1.00				0.00							
Is document encryption provided by the proposed system's security function?	NS				0.00	0.00		1.00				0.00							
Can multiple user security profiles be created to control the access to all of the proposed system's features and functions enjoyed by different groups of users?	NS				0.00	0.00		1.00				0.00							
Can a security profile controlling the ability of multiple users to access specific features and functions of the proposed system be created?	NS				0.00	0.00		1.00				0.00							
Please indicate if the proposed system enables the creation of a security profile controlling a user's ability to:	-																		
View ALL documents:	NS				0.00	0.00		1.00				0.00							
View only specific document groups:	NS				0.00	0.00		1.00				0.00							
View only departmental documents:	NS				0.00	0.00		1.00				0.00							
Does the proposed software provide the ability to view all user-defined security profile codes, and select the one desired, via a drop-down list box when maintaining help desk staff members?	NS				0.00	0.00		1.00				0.00							
Please indicate the levels at which access privileges are established by the proposed software:	-																		
Individual level:	NS				0.00	0.00		1.00				0.00							

Role (position):	NS			0.00	0.00	1.00				0.00					
Group level:	NS			0.00	0.00	1.00				0.00					
Does the proposed system provide default user group settings to help speed up initial system implementation?	NS			0.00	0.00	1.00				0.00					
Is Object level security provided by the proposed system?	NS			0.00	0.00	1.00				0.00					
When using the proposed system, are process participants able to see only what their security privileges enable them to see (participants see only what they need to perform their activities)?	NS			0.00	0.00	1.00				0.00					
Does the proposed system provide the ability to lock and hide specific data fields?	NS			0.00	0.00	1.00				0.00					
Does the proposed software utilize the Check-In/Check-Out function to monitor and verify the integrity of all security settings?	NS			0.00	0.00	1.00				0.00					
Is Public Key Infrastructure (PKI) support offered by the proposed software?	NS			0.00	0.00	1.00				0.00					
Are digital signatures supported by the proposed software?	NS			0.00	0.00	1.00				0.00					
Are digital certificates supported by the proposed software?	NS			0.00	0.00	1.00				0.00					
Does the proposed software provide any features or functions designed to minimum the risk of collaboration beyond the firewall?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
If YES, please explain in more detail in the Response column.															
	-														
(Return to TOP)	-														
SYSTEM SUPPORT	-														
	-														
Is a local source of software support available for the vendor's product?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Are the local support technicians employee's of the vendor or are they employees of a third party support group?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Does the vendor company fully support customized software?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	-														
HelpDesk Availability:	-														
Will a Help Desk offering live telephone support be available during normal business hours for this system when live usage starts?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is live HelpDesk support available 24/7?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is a Web site dedicated to interactive HelpDesk functions available?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Will a web site dedicated to ongoing support of the system be provided by the vendor?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	-														
On-Site Support:	-														
When on-site support is needed, what is the guaranteed response time?	-														
Same day as initial call:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Next business day:	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
As soon as possible (not defined):	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is a staff member dedicated to software support available during normal business hours?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is support available 24 hours/day, 7 days/week?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is on-site training available during the installation of the software?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is on-site training available on an on-going basis?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Can the training be customized to meet the needs of this specific client?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Are training manuals, i.e., software procedure manuals, provided during the training?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is on-line HELP available at the screen level?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is field level on-line help available at all times?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Is the on-line help customizable by the user without re-compiling?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Does the system provide dynamic listings of valid codes or text choices at each point where they are used?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	-														
(Return to Top)	-														
SYSTEM PRICING	-														
	-														
How many users will the proposed system support concurrently?	1														
Is the proposed software licensed by:															
- concurrent user?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- user seat?	N			0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	-														

INITIAL ONE-TIME COSTS	-		
	-		
	-		
Initial TOTAL License Cost:			
What is the TOTAL, all-inclusive license cost for EACH software needed to build the proposed system? Please enter in the "RESPONSE" column.	-		
Package A:	$0.00		
Package B:	$0.00		
Package C:	$0.00		
TOTAL License Cost:	$0.00		
	-		
	-		
Requirements Analysis:			
If needed, enter the TOTAL cost of performing an "AS-IS" System Evaluation in the Response column:	$0.00		
If needed, enter the cost of identifying new BPO Opportunities:	$0.00		
Enter the cost of performing all needed Business Process Reengineering:	$0.00		
TOTAL Requirements Analysis Cost:	$0.00		
	-		
	-		
Installation:			
Enter the TOTAL, all-inclusive cost of all software custom programming tasks required before **ALL software** needed for the proposed system can be 100% available and ready to use by the customer in all its operations:	$0.00		
Enter the TOTAL, all-inclusive cost of all software installation parameter setup or configuration scripting tasks required before any and ALL software needed for the proposed system can be 100% available and ready to use by the customer in all its operations:	$0.00		
Enter the TOTAL, all-inclusive cost of all software installation tasks required before any and ALL software needed for the proposed system can be 100% available and ready to use by the customer in all its operations:	$0.00		
TOTAL Installation Cost:	$0.00		
	-		
	-		
Data Conversion:			
What is the cost to convert the customer's existing data in **Data file A**:	$0.00		
What is the cost to convert the customer's existing data in **Data file B:**	$0.00		
What is the cost to convert the customer's existing data in **Data file C:**	$0.00		
TOTAL Data Conversion Cost:	$0.00		
	-		
	-		
Test and System Validation:			
Enter the TOTAL cost of all Testing & Validation required to implement the system:	$0.00		
	-		
	-		
Initial Training:			
What is the TOTAL, all-inclusive user training cost for ALL software being proposed in the proposed system?	$0.00		
	-		
TOTAL INITIAL ONE-TIME COSTS:	$0.00		
	-		
Expansion Increment:			
What is the next incremental increase in the number of users in the proposed software license agreement? Please enter in the "X" number of users format shown in the response column.	X Users		
What is the incremental cost increase required to expand the number of users to the next highest level? Enter this in the $Y Dollars / X number of users format shown in the Response column.	$0.00/X Users		
	-		
ON-GOING COSTS	-		
	-		
	-		
Per Transaction or Per Occurrence Costs:			
Please identify those offerings provided at a flat rate per each transaction or occurrence:	-		
- Transaction or Occurrence Offering A	$0.00		
- Transaction or Occurrence Offering B	$0.00		
- Transaction or Occurrence Offering C	$0.00		
	-		
	-		
On-going Monthly Costs:			
Please identify those services, other than support or maintenance, provided at a flat, fixed amount per MONTH:	-		
- Service Offering A	$0.00		
- Service Offering B	$0.00		

- Service Offering C	$0.00		
TOTAL Ongoing Monthly Cost:	$0.00		
	-		
On-going Yearly Costs:	-		
Please identify those services, other than support or maintenance, provided at a flat, fixed amount per YEAR:	-		
- Service Offering A	$0.00		
- Service Offering B	$0.00		
- Service Offering C	$0.00		
TOTAL Ongoing Yearly Cost:	$0.00		
	-		
Annual Software Support:	-		
What is the ANNUAL cost for software support on a normal business day basis for any required software?	$0.00		
	-		
Annual Software Maintenance:	-		
What is the TOTAL ANNUAL cost for software maintenance, including all version upgrades, for any required software?	$0.00		
	-		
Additional Training	-		
What is the TOTAL, all-inclusive user training **cost per day** for additional on-site training required to use the proposed system?	$0.00		
(Return to TOP)	-		
TOTAL INITIAL PRICE:	**$0.00**		
The Total Price includes all INITIAL costs **and the first year's Annual Support and Maintenance fees**.	-		
Cost for Additional Training, **and Annual Support / Annual Maintenance fees for year two and up are NOT included in the Total Price above.**	-		
WEIGHTED SCORE:	0.00	The TOTAL of all Weighted Grade Scores calculated for each individual response in this RFP, other than those in the Vendor Global Issues and Pricing sections.	**TOTAL:** 0.00 0.00
SUPPORTABILITY INDEX:	0.00	A measure of the **potential** support effort required to maintain the system over its projected lifespan.	
ENHANCEMENT COST:	$0.00	The total of all Paid Enhancement Costs entered when the response was PE.	
	-		
	-		
(Return to TOP)	-		
	-		
	-		
	-		
	-		
	-		
	-		
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	-		

RFP Usage Overview

This document explains how each Request for Proposal (RFP) is organized, and illustrates how easy it is to use basic Excel commands to modify the RFP to suit a specific organization's needs.

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Activate a menu selection by placing the text cursor over the desired selection, (left click on it if still an arrow cursor), then hold the "Ctrl" key down while clicking the Left mouse button.

RFP Usage Overview

PURPOSE:

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The purpose of this document is to identify the key components of the RFP Master™ spreadsheet shipped in your order. Each RFP Master™ utilizes just basic MS Excel™ technology to ensure that all users can work with them freely.

All vendor response input validation and weighted grade point scoring formula are componentized at the ROW level. This ensures that basic Excel "copy" and "paste special" commands can be used to quickly and easily add new RFP questions, or modify or delete questions, as warranted by a given business situation.

A detailed breakout of RFP MASTER™ spreadsheet column and row usage is below. Instructions for ADDING / MODIFYING / DELETING questions and SECURITY functions follow after that.

IMPORTANT NOTICE:

There are areas of this RFP which may need your attention for specific Date, Time, and Preference Options. These are all highlighted in RED TYPE, and are found (for the most part) in the INTRODUCTION, SUPPORT, and PRICING sections of the RFP but can, and do, occur throughout. Please be on the lookout for these, and change as required to fit your needs.

COLUMN USAGE:

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Column A – Unused by the RFP Master™. This column is used most often to cross-reference each RFP question to parts of another, third party document.

Column B – contains all RFP statements, questions, or section headings. The validation Wizard will display detailed online HELP for many of these. In special cases, a red upper right corner in one of these cells indicates the availability of special

RFP Usage Overview

instructions for that cell or row.

Column C – the Response column, used to collect vendor responses. In most cases the vendor must choose from a drop-down list of pre-designated responses.

Column D – the Enhancement Cost column, used to receive vendor quotes regarding the amount needed to enhance (modify) the proposed software.

Column E – the Vendor Explanation column, used to receive all variable, free form vendor explanations and expansions regarding the responses entered in the Response column (C).

Columns A through E are the only ones that need to be used by a vendor when preparing a response. Columns F through Q are for the weighted grade score computation and should be protected BEFORE sending this RFP out to vendors, as appropriate. See the SECURITY section for instructions.

The following columns are NOT REQUIRED for use by vendors, and should be protected (and hidden) using standard Excel security techniques.

Column F – Unused

Column G – the SCORE column, used to contain the final Weighted Grade Point Score (WGPS) calculated for the vendor response for each question or selection.

Column H – Unused

Column I – Unused

Column J – WEIGHT, contains the weight assigned to each RFx question criteria. This is multiplied by the Score assigned to each vendor response choice.

Columns K to Q – contain the vendor response chosen in response to each question, by type.

RFP Usage Overview

ROW MAINTENANCE:

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Rows are independent of each other, and can be added, changed, or deleted at will. The standard Excel commands COPY, DELETE, INSERT ROW, and PASTE SPECIAL are all that is needed to modify an RFP Master. This is true because the weighted grade score formula and vendor response validation are componentized at the row level.

In cases where a row contains a question designed to receive a vendor response, the row also contains the formula needed to calculate the weighted score. To modify this RFP, use the following modification instructions.

DELETING A ROW:

To DELETE a row, simply place the mouse cursor in the far left column of that row, (the column containing the row number), then doing a single LEFT button click to select (highlight) that row. Once the row is highlighted, click the RIGHT mouse button to display an Options box, and selecting the DELETE option.

CHANGING A QUESTION:

To make a simple change to the question or statement showing on a certain row in column B, just position the mouse cursor over that cell and then double-click to place the cursor in that cell. Make the desired change using standard text editing techniques.

NOTE: The formatting used is critical. All cells containing lengthy text, and column E - Vendor Explanations, must have the correct formatting specification. Use the Format Cells --> Number --> Category command to set the Format "General". This forces all questions and vendor entries to read correctly and show the actual text entry instead of #######. To set the format, just position your mouse cursor at the very top of column E and left click your mouse to highlight the entire column. Once highlighted, just right click to display an options list box. Select "Format Cells" to display

RFP Usage Overview

the "Format Cells" dialog box. Select the Number Category "General" then click OK.

To change the required vendor response type and associated validation and weighted scoring routines, all that must be done is to locate a row with the desired response characteristics and then copy its columns C through Q. Then select columns C through Q on the row you wish to change, then use the PASTE SPECIAL – ALL command to place the desired results list validation and formulas in that row.

ADDING A NEW QUESTION or STATEMENT:

To add a totally new question that uses a specific vendor response type and associated validation and weighted scoring routines, all that must be done is to locate a row with the desired characteristics. Once located, place the mouse cursor in the far left column, right-click to display a menu, and select COPY. Once the row is copied, position the cursor in the far left column of the row just below where you want to create the new row, then right-click to display a menu. Select INSERT COPIED CELLS to insert the row just copied. Then just change the wording in column B to suit.

SECURITY:

(return to TOC)

Standard Excel protection rules apply to all columns and rows. At minimum, the SCORE and all the Weighted Grade calculation columns should be protected from tampering. The vendor should only have access to, and be able to change, columns C, D, and E as appropriate. Be sure to send each RFP Master with these cells "unlocked" and all others "locked".

To "lock" or "unlock" a cell, just select the cell(s) you wish to lock or unlock, then do a single Right mouse click on that cell group to display a Select Options box. Choose the "Format Cells" option to display the "Format Cells" dialog box, then choose the "Protection" tab to display a dialog showing "Locked" and "Hidden" check boxes. Check the "Locked" box to "Lock" the cell(s), and check the "Hidden" box to hide them.

To "Hide" or "unHide" one or a group of Cell(s), Row(s), or Column(s), just select the cell(s) you wish to work with, then do a single Right mouse click on that cell group to display a Select Options box. Choose the

RFP Usage Overview

"Format Cells" option to display the "Format Cells" dialog box, then choose the "Protection" tab to display a dialog showing "Locked" and "Hidden" check boxes. Check the "Hidden" box to hide them.

The Excel PROTECTION is turned OFF so you can make changes as needed.

NOTE: To turn the PROTECTION "ON" just prior to emailing to vendors, be sure to click the "TOOLS" menu, then select PROTECTION → PROTECT SHEET. Be sure to write the password selected!

WEIGHTED GRADE POINT SCORING:

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Weighted Grade Point Scoring, referred to as WGPS, is a technique for quantitatively evaluating software functionality based on HOW WELL it fits a specific requirement and also HOW IMPORTANT that requirement is to the organization.

The vendor response given to each requirement determines HOW WELL the proposed software fits a certain requirement. For example, a response of Y (Yes) is assigned a value of one (1), and a response of N (No) is assigned a value of zero (0), in most cases. The values assigned when using the Feature Support Matrix are:

- FS (Full Support) = 1
- CO (Configuration Option) = .8
- RT (Reporting Tool) = .7
- 3P (Third Party product) = .4
- NS (No Support) = 0 (zero)
- PE (Paid Enhancement) = .3
- FE (FREE Enhancement) = .5

The level of importance, i.e., how important the requirement is to the organization, is assigned through the values found in the WEIGHT column (J). We suggest using a range of 0 – 1, or 0 – 10, as your Weight set range. In these examples, 0 represents a No Importance level, and the high score the Most Important level. We recommend these since this keeps the final totals at a manageable level.

RFP Usage Overview

The WGPS of a vendor response, to a given requirement, is calculated by multiplying the WEIGHT of that requirement by the VALUE assigned to that vendor response. The Total WGPS is found by totaling all the WGPS assigned to each requirement. The WGPS for each requirement is shown in Column G, the WEIGHTED SCORE column, found in each RFP.

SUPPORTABILITY INDEX (SI):

(return to TOC)

The SI of a vendor response is a measure of how much effort and money will be required to fully support and maintain the proposed system over its expected lifespan. Potentially, more ongoing support effort will be required as this score increases. This score is calculated by adding the raw score currently assigned to the vendor response if it is one of the following:

- **PE (Paid Enhancement)**
- **FE (Free Enhancement)**
- **NS (Not Supported)**
- **CO (Configuration Option)**
- **RT (Reporting Tool)**
- **3P (a Third Party product)**

The above are added to the SI because they have historically required more support, and have been less reliable, than a standard Fully Supported and tested feature provided as part pf the standard product.

100 Year Archive Task Force

100 Year Archive Requirements Survey

January 2007

100 Year Archive Requirements Survey

January 2007

Authors:

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The 100 Year Archive Task Force is a program sponsored by the SNIA's Data Management Forum. The Task Force operates an online portal at www.snia-dmf.org/100year

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EXECUTIVE SUMMARY

The Digital Crisis

Large organizations faced with retaining and preserving huge amounts of digital information for very long periods of time are at the front edge of a troubling crisis. Digital information[1] is actually easier to lose than if it were on paper or film. It is one thing to manage a domain of digital records that an archivist can personally guard and shepherd. It is quite another to meet the archival challenges of today's enterprise data center. These data centers can be characterized as environments with petabytes of distributed information, high data growth rates, many facilities and many departments with uncoordinated responsibilities and requirements, and lack of business-level budget, interest, and focus on its archives. All these operating challenges are now compounded by high risk. Yes, risk – risk of failure and fines from legal discovery, compliance requirements, or security threats. Add to this, the risk of losing information that may be of great value to the organization and the picture looks pretty daunting.

Top Four Ways of Losing Digital Information

- Can not read it
- Can not interpret it correctly
- Can not validate its authenticity
- Can not find it

The digital crisis is exacerbated by time. In 10 years, 50 years, 200 years, which applications will still be around? What computer and storage system will be able to read old information, providing that it is not corrupted by then? Even finding a single piece of content and all the linked-objects that contain associated content amid trillions of distributed information objects is at best, a costly adventure. The problems are huge and here is the dilemma. Many standards and best practices exist today documenting the practices of preserving digital information. Yet, none of them address the core problems caused by inadequacies and inefficiencies in the supporting storage infrastructure.

The **'two grand technical challenges'** of long term digital information retention are logical and physical migration. Logical migration is the practice of updating the format of the information into a newer format that can be read and properly interpreted by future applications or readers without losing the authenticity of the original. Physical migration means to copy the information to newer storage media to preserve the ability to access it and to protect it from media corruption. Best practices today require logical and physical migration every 3-5 years. Based on these practice standards, the real underlying challenge is how to scale migration capabilities while controlling cost. An organization that has 1,000 TB (a petabyte, PB) in its digital archive repository will have 50% more next year. In three years, they will need to migrate that first petabyte. In five years they will need to migrate 2.25 PB. How do organizations expect to do that and keep up with the growth, the cost, and the complexity? The answer is they can not. They will not[2]. It is the contention of the 100 Year Archive Task Force that migration as a discrete long-term preservation methodology is broken in the data center. Today's migration practices do not scale cost-effectively and won't be done until a crisis erupts. This means that today's reliance on migration is taking us down a 'dead-end path'. Hear this clearly. Under these practice guidelines, the world's digital information is at great risk! New technological approaches are required that meet the legal, business, cost, and scalability requirements of the 'digital age' for long-term digital information retention.

The Digital Crisis

- Risk of losing digital information over time
- Growing cost and complexity of physical and logical migration
- Overwhelming volume of digital information to preserve long-term
- Increased legal, business, and security risk

The Grand Challenges

Solve Logical and Physical Migration

The Petabyte Problem

Migration is broken. Migration practices do not scale to meet the digital preservation requirements of the data center.

The Research Goal

Determine requirements for the definition of best practices and solutions for the long-term digital information retention problems of the data center.

The Requirements Survey

In September 2006, the SNIA's 100 Year Archive Task Force decided it needed a clear statement of business requirements to frame and bound potential technology solutions to the long-term digital information retention challenges of the data center. The plan was to design and conduct an online survey inviting a broad range of information owning and administrating professionals world-wide to participate and provide guidance. Knowing that many of these practitioners did not have large-scale data center experience, the research plan's primary goal and chief assumption were these:

- **Goal**: Determine requirements for the definition of best practices and solutions to the long-term digital information retention problems of the data center.
- **Research Hypothesis**: Current archive practitioner's experiences with multi-terabyte-size archival systems are adequate to define the business and operating requirements for petabyte-size information repositories in the data center.

This report summarizes the findings of the requirements survey. It was conducted online and respondents were solicited worldwide

[1] Now also being called by the legal & compliance community "electronically stored information" (ESI),

[2] Only 30% of the 276 respondents to this survey claimed they do migration today.

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through SNIA's many alliances. Respondents self-selected (meaning they decided if they could answer the questions properly) and there were no incentives other than personal motivation to help. It was a passionate subject as individuals from 276 organizations responded and completed the survey over the three month period of November 2006 to January 2007. Respondents came from three principal disciplines: Information Technology (IT), Records and Information Managers (RIM), and Archivists. Additional participants represented Legal, Security, and business groups.

The Survey

- Online, Quantitative Survey
- 276 Organizations
- IT, RIM, Archivists, Legal, Security, and Business Respondents
- World-wide participation

Survey Highlights

First, the research hypothesis was validated. The respondents were very insightful and provided opinionated and experienced advice. The survey was also very successful because it derived a clear set of requirements that the Task Force can use to guide its work. Here are some of the important highlights.

- The survey establishes clear validation that long-term retention needs are real and that many organizations have long-term requirements.
  - 80% of respondents declared they have information they must keep over 50 years and 68% of respondents said they must keep it over 100 years. (See page 33)
- Long-term generally means greater than 10 to 15 years – the period beyond which multiple migrations take place and information is at risk. (See page 23)
- Database information (structured data) was considered to be most at risk of loss. (See page 34)
- Over 40% of respondents are keeping e-Mail records over 10 years. E-Mail is not just a short-term problem. (See page 35)
- Physical migration is a big problem. Only 30% declared they were doing it correctly at 3-5 year intervals. The rest of the sample group is placing their digital information at risk. (See page 38)
- 60% of respondents say they are 'highly dissatisfied' that they will be able to read their retained information in 50 years. (See page 46)
- Help is needed – current practices are too manual, too prone to error, too costly and lack adequate coordination across the organization. (See page 40-46)
- Collaboration and classification were recognized as very important practices to get the organization working together setting requirements for the management of their information. This recognition reinforces the messages of the SNIA's Data Management Forum (DMF) in its market educational efforts for Information Lifecycle Management (ILM)-based practices. (See page 53)

  - Reinforcing this point, only 35% of respondents agreed with the statement that their IT and RIM departments coordinate requirements for retention and preservation of the information they protect. (See page 44)

The Four-Faces of Requirements

- Business Drivers
- Barriers to Adoption
- Operating Practices
- Technology Challenges

Requirements:

The goal of this research was to define requirements from the practitioner's viewpoint for long-term retention solutions. It succeeded. The respondent's requirement feedback was summarized into four categories corresponding to the classes of needs that solutions or best practices must address. This list now defines the 'market requirements' that will guide the work of the Task Force.

- **Accommodate the requirements of the critical business drivers** behind long-term retention by mitigating legal, compliance, business, and security risk as well as preserving the history of the organization forever.
- **Overcome the barriers inhibiting adoption** of best practices that range from the cost-effectiveness of solutions to stimulating collaborative efforts within the organization. Many of these requirements are organizational issues and fit the profile of best practices.
  - The most alarming barriers were the warnings that executive management does not really care and that there is no prestige in archive practices within the IT organization.
- **Improve operating practices** by providing better management tools, best-practices, job visibility, and education.
- **Solve the technology challenges** by:
  - Solving logical and physical migration
  - Solving the ability to scale the volume of information
  - Incorporating metadata into the archival repository
  - Including databases, email, and legacy information
  - Providing a full spectrum of information and data services core to the digital information repository that provide for classification, control, discovery, availability, protection, security, integrity, audit, forensics, non-repudiation, preservation, and permanent deletion

Follow On Work By The Task Force

The 100 Year Archive Task Force has big goals. Foremost on the list is to solve the technical challenges. Using the requirements developed from this survey, work is progressing on several fronts:

- Produce a 'Reference Model' for long-term digital information retention

- The Task Force is developing a reference model similar in format to the OAIS[3] document, covering the storage domain portion of long-term retention. Building off OAIS, it will define storage architectures and services that provide a robust, scalable, long-term digital information repository. The plan is through technology to completely change the concept of physical migration.

- Solving logical migration requires new format standards and a means to motivate application developers to implement those standards. The 100 Year Archive Task Force plans to leverage the OAIS architectural model's concept of an "archival information package" in creating a storage container being called Self-Describing, Self-Contained Data Format, (SD-SCDF). It is planned that implementation of SD-SCDF will be enabled by integration with the XAM[4] application-to-storage interface standard currently in development by SNIA.
- Market Education – the Task Force operates a web-site and a speaker's bureau and is presenting at events world-wide. This report will be showcased and broadly distributed to assist in elevating the importance of organizations paying attention to their digital assets.

Based on the findings of this research, information professionals can be hard at work today creating a collaborative relationship between all departments in the organization with the goal of setting requirements for information. In Information Lifecycle Management (ILM) terms, these are the first steps in implementing a comprehensive ILM-based practice; collaborate then identify, classify, and set requirements for information. The problems and the requirements have been clearly articulated in this report. It is your responsibility to convince your organization of the importance of protecting your information assets and to put into place collaborative practices to identify and classify your information and then set requirements so that IT knows the business requirements.[5]

100 Year Archive Task Force Projects

- Reference Model including glossary and physical migration
- Logical Format Standard
- Integration with ILM and XAM
- Market Education

[3] OAIS: Open Archival Information System, ISO Standard 14721:2002

[4] XAM: eXtensible Access Method – a new standard in development by SNIA that will potentially provide a platform for application adoption of SD-SCDF. http://www.snia.org/xam/home

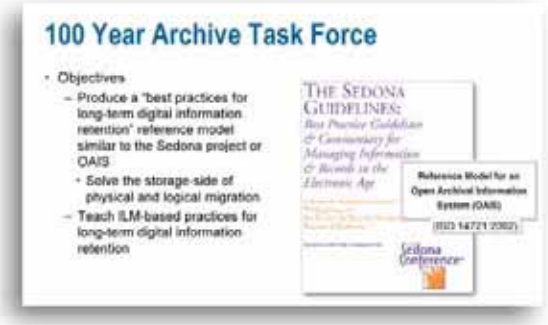
[5] For more insights on collaboration, see the ARMA-SNIA paper, *"Collaboration-New-Std-of-Excellence"* October 2006 at www.snia-dmf.org

Respondent Recommendation

Remember that IT doesn't own the information. RIM, Legal, Business units and IT all have a part to play in the decisions applied to business records and should be sitting down at the table together.

If you want to contribute to this project, participate in the 100 Year Archive Task Force which is part of the SNIA's Data Management Forum. You can help guide this work and elevate its effectiveness. Solving the long-term digital information retention and preservation challenge is very important and the Task Force needs experienced participants from many disciplines because of the complexity of these problems. You can learn more including how to get involved at www.snia-dmf.org/100year.

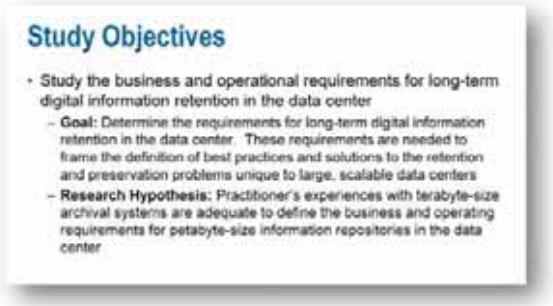
Figure 1



INTRODUCTION

In September of 2006, the SNIA's 100 Year Archive Task Force began developing this survey. Its purpose is twofold. First, to define market requirements to assure that the work the Task Force has underway properly supports those needs. This study focuses on the challenges faced by information owners and administrators, and maps those challenges to the technology needs of the data center. And second, to use the results of the survey to promote the importance of this project and conduct market education. Market education is one of the core charters of the SNIA's Data Management Forum.

Figure 2



Upon launching the survey, many objections from RIM and Archivist participants were received, complaining that the survey was not in touch with their needs. Once it was explained that the problems the survey is studying deal with the huge and exponentially growing problem of long-term retention in the data center, the response became supportive. This study is unique in that respect. It takes the problems and needs that many information technology and information management professionals have in their current organizations and practices and maps them to the data center problem.

What is that problem? How do you cost-effectively manage, and automate the preservation of petabytes[6] of information forever. How do you keep up with an overwhelming volume of information that is growing at 50% to 100% per year? How do you migrate multiple petabytes (PBs) per year logically and physically? The answer is you cannot do it economically. The data center archive process and storage system is technologically broken. It doesn't

The Migration Challenge

An organization that has 1 petabyte, (PB) in its digital archive repository will have 50% more next year. In three years, they will need to migrate that first petabyte. In five years they will need to migrate 2.25 PB.

[6] A petabyte (PB) is one-thousand terabytes or a million gigabytes

scale. This is the frame of reference of the study and it is essential that you read it from that context.

Another objective of the study was to look at the problems of the data center from multiple perspectives. Participants from RIM, IT, Archivist, Security, Legal, and business groups were solicited through the SNIA's many members, regional affiliates, and association partners. The outreach efforts promoting participation in the survey emphasized the need for feedback from people responsible and experienced in retaining digital records for long-term periods of time.

Capturing feedback from these different viewpoints was important and added to defining a rich and complementary set of requirements. Perhaps the most important message that came from the variety of respondents was the urgent cry for collaboration between the different disciplines. No single functional group can solve a cross-organizational problem. This finding is supportive of the SNIA-ARMA Task Force[7] work, and the programs the DMF and ARMA are progressing to encourage collaboration between information owners and administrators.

The Survey

- Online, Quantitative Survey
- 276 Organizations
- IT, RIM, Archivists, Legal, Security, and Business Respondents
- World-wide participation

The task of developing and conducting the online survey, conducting the marketing program to obtain respondents, analyzing the survey responses, and writing the survey report was led by Michael Peterson, President of Strategic Research Corp. and currently the Chief Strategy Advocate for the SNIA's Data Management Forum. Members and leaders of the 100 Year Archive Task Force and the SNIA Data Management Forum contributed to the effort. The survey was run as an open, online survey with self-selecting respondents from the IT, RIM, Business, and Archivist communities over the three month period of November 2006 to January 2007. A total of 276 individuals from a wide variety of organizations responded and took the 63 question survey.

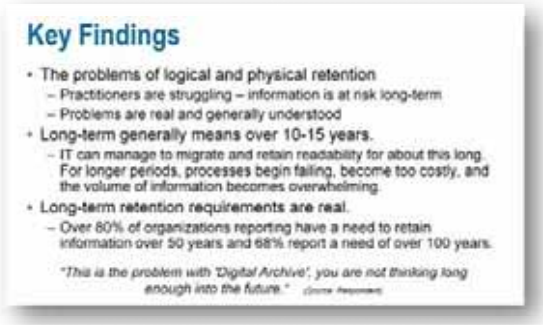
[7] See the paper , *"Collaboration-New-Std-of-Excellence"* October 2006 at www.snia-dmf.org produced by the SNIA-ARMA Task Force

KEY FINDINGS

Highlights

All of the questions asked in this survey produced important, usable findings applicable to better understanding the operating practices and requirements in this field. But, some are more pertinent than others and need emphasizing. This section of the report highlights those results.

Figure 3



As indicated by the list of findings presented in Figures 3 and 4, respondents are struggling with many problems in long-term retention. The needs are great and the problems are real. There are many expert practitioners in the respondent pool who will hopefully help guide this Task Force as it progresses its work.

Throughout the survey, important background questions were asked such as "what information-types are you retaining", "how much data are you storing", and "what does long–term mean to you?" The answers are profound. Long-term, by consensus, came out to be anything beyond 10-15 years because that is the time-frame beyond which they begin to lose control of logical and physical migration.

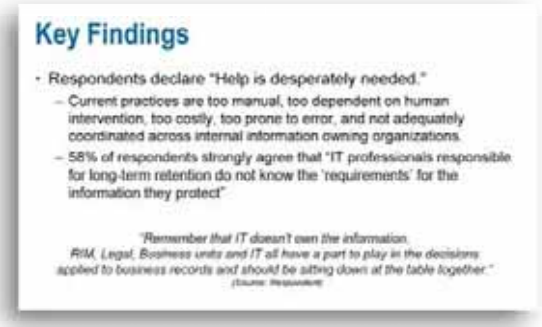
In addition, respondents identified that legal, compliance, business, and security risk, along with the fear of losing critical and historical records are driving the long-term retention of ever increasing amounts of digital information. They also verified that they have many real problems and are not confident in the "art" of preserving digital information for the long-term.

Long-term digital information retention is hard, complex, and affects the entire organization. Some of the more important and revealing results were these:

- Many more organizations than expected have a long-term problem. 80% of the 276 organizations reported a need in excess of 50 years.
- Database information was considered most at risk. (This problem is not limited to unstructured information or email.)

- Over 40% of respondents are keeping email records over 10 years.
- Physical migration is a big problem. Only 30% declared they were doing it correctly at 3-5 year intervals. The rest of the group is placing their digital information at risk.
- 60% of respondents say they are highly dissatisfied that they will be able to read their retained information in 50 years.
- Help is needed – current practices are too manual, too prone to error, too costly and lack adequate coordination across the organization.
- Collaboration and classification were recognized as very important practices to get the organization working together setting requirements for the management of their information. This recognition reinforces the messages of the SNIA's Data Management Forum (DMF) in its market educational efforts for Information Lifecycle Management (ILM)-based practices.

Figure 4



"The driving force for a true Archive is the preservation of the history of the organization for hundreds of years. Your survey does not address the historic needs. It is a matter of preserving for future generations the important facts (records) of an organization. This is the problem with 'Digital Archive', you are not thinking long enough into the future." (Source: Survey Respondent)

The study concluded by asking some important summary questions about the respondent's organizational attitudes. The results illustrate two important points and potential barriers. First, the need for help is recognized. Most respondents talk about the constant investigation they are doing to try to stay abreast of technology developments. In addition, there is recognition of the complexity and cost of long-term retention practices. Second, the desire to collaborate is strong, as well as the recognition that senior management must be committed to solving the problem. The common paradox here is that archive information is important to an organization, but recognition for managing the archives is often low on the professional 'totem-pole'. (This

complaint tied for the second highest "pain-point" in the survey.) Support, commitment, and professional recognition are issues that must be addressed.

Recommendations? Get RIM and IT at the same table. Create a relationship. Both need to be included up front to develop solutions that will work on both sides. Involve senior management early in the process and be sure there is a common goal outside the influence of technology enthusiasts. Collaborate and rely on standards and good practice. Communication and visibility about the issues of compliance with the agency's RIM policies and practices and enforcement of those policies (are needed). Upper management advocacy (is essential). (Source: Survey Respondent)

Respondent Recommendation

Collaborate: rely on standards and good practices and get management commitment

These points are amplified by the following list of "Top Pain Points", and the following list of requirements. These illustrate the broad nature of the problems encountered by the functional groups represented in this study, as well as their view of the relative importance of each pain point. Long-term digital information retention is a complex problem that requires humans interface with numerous technology practices.

Table 1
What are your top pain points in long-term digital information retention?
(Percent of Responses, Multiple Responses Allowed, n=276)

Media Migration	12%	Classification	8%
Maintain Readability	10%	Lack of Collaboration	7%
Technology Obsolescence/Upgrades	10%	Discovery & Deletion Difficult	6%
Lack of Business Support/Commitment	10%	Too Many/Legacy Formats	6%
Cost	9%	Lack of Expertise/Discipline	5%

Requirements for Long-Term Retention

The principal goal of this research is to define requirements from the practitioner's viewpoint for long-term retention solutions. A lot of valuable feedback was received. In tabulating and organizing it, four categories stood out: business drivers, inhibitors, operating practices, and technology problems. The principle is that all solutions and best practices that the Task Force defines need to satisfy the market requirements. Looking at them by category helps understand which approaches to take.

Figure 5

ACCOMODATE DRIVERS: Meeting the needs of business drivers requires control over many important services throughout the lifecycle of millions of information objects. Control implies management of services and practices, including[8] services such as these: classification, eDiscovery, protection, privacy, availability, integrity, auditing, preservation, and permanent deletion. The concept is to instrument, automate, measure, and mitigate risk of violating the requirements.

INHIBITORS AND BARRIERS: This category addresses needs practitioners have to overcome inhibitors or barriers to adoption. As highlighted in Table 1, lack of commitment and collaboration are very highly rated pain points. Lack of senior management commitment is a common organizational barrier which inhibits support and budget and leads to failure. Similarly, collaboration between the various functional groups is critically important and has to be encouraged through ongoing educational activities. Other items on the list include parameters that overlap other requirement categories because in the respondent's mind, unless they get solved, they are barriers. The success of practices and technology solutions for long-term retention will be gated by how well those solutions help the practitioners in the field overcome these barriers and are easy to adopt.

[8] This list of services is not all-inclusive. eDiscovery means 'electronic discovery', a service analogous to content search of digital objects.

Lack of management commitment is a major concern. Consider this respondent's perspective:

> *As we complete the move to Electronic Medical Records, clinical files are being automatically generated. This initiative is driven by federal and health care mandates and is progressing pretty well for our field. The business side of the operations is very far behind the curve. We're a 100-year-old institution with NO records management structure. It's very scary to me that the administration is so cavalier about business records.* (Source: Survey Respondent)

Respondent Concern
Management Commitment

OPERATING PRACTICES: The third category addresses requirements that affect practitioner's ability to perform their jobs. The responses range from organizational to technology. A number of the top pains keep showing up such as migration, collaboration, and commitment. Unique to this list are criteria like reducing operating costs and better management tools. Across a number of questions, study respondents expressed their needs, satisfactions and dissatisfactions with long-term digital information retention. In doing so they articulated the observation that there are no 'silver bullets' available. Long-term retention is hard work as further illustrated by the examples listed in Table 2.

Figure 6

> *The distribution of (what is being stored) on disk must match the ongoing business value of the data – automatically. If (this does) not (happen), management is an unsolvable problem, since humans cannot keep up with the data onslaught.* (Source: Respondent)

TECHNOLOGY ISSUES: The technology issues that respondents listed range from migration, to better tools, to better practices. Respondents included important requirements such as "including all information types", "including new and old legacy information", and "adding metadata to existing information". Here is a good checklist to measure potential solutions.

Table 2

Top Pain Point Examples

- IT reluctance to destroy data
- Risk of degradation
- Migration issues
- Conversion and migration costs and effort
- No good long-term solutions
- Unwillingness of top management to recognize problem
- Business units & IT are unaware of the real retention requirements
- Metadata capture
- Risk of obsolescence
- Poor/inconsistent metadata
- Fluid technology
- Organizational structure and leadership
- Lack of coordination between IT & RIM
- Technological obsolescence
- Lack of Standards
- Proprietary formats

Peer Recommendations

The last question of the survey asked respondents to summarize their experiences and make their own best practice recommendations to their peers. The feedback was insightful as it added a human element to the discussion. While all the feedback is valid and important, with few exceptions these recommendations only address the organizational and human-factors side of the problem. It is now up to the storage and application providers to address the technology problems, while remaining sensitive to the expert practitioner's requirements. This quote sums it up quite well.

Figure 7

> *"When using a digital archive, understand you will have a long hard expensive road to keep the records. You have to think about the ability of your great, great, great, great … grandchildren being able to read and logically interpret what your history was…"* (Source: Respondent)

Task Force Recommendations

By combining the respondent's feedback, the 100 Year Archive Task Force now has a set of requirements that bound the approaches to finding and adapting technology solutions. These requirements incorporate elements from all four categories of needs.

Figure 8

Storage Best Practices Requirements

- Assure digital information is being preserved for its retention period
  - Know and set clear business, legal, and compliance requirements and only retain long-term what is needed
  - Assure information is available, accessible, findable, private, secure, protected, and readable
  - Manage duplicates and versions
  - Provide for permanent deletion at the end of the retention period
  - Provide auditing capabilities and a periodic review process of what is being retained and its requirements
- Assure originals are authenticated and preserved
  - Store in an 'archive' format
  - Include metadata, provenance, and finding aids
- Put in place controls to handle
  - Hardware and software obsolescence
  - The ability to read and interpret information over its lifecycle
- Plan for logical and physical migration and automate management of the repository

Another dimension of the core findings of this study is that the storage industry cannot develop solutions to long-term retention in a vacuum. It is the Task Forces' opinion that effective solutions and practices must be multi-disciplinary and integrative with existing best practices and standards including:

Requirements Guidance

Multidisciplinary and integrative with existing standards and practices

- The RIM, Archivist, and IT practitioners, who will guide the approach and evaluate the solutions in each organization
- The application providers, who need to generate the correct metadata upon creation and package long-term formatted information objects into containers.
- Utilizing existing standards such as OAIS and best practices established by the Sedona Conference
- Integrate with existing and emerging storage standards such as SMI-S and XAM to enable automation and ILM-based practices
- Provide for consistency with established operating methodologies such as IT Service Management and Information Lifecycle Management.

In reviewing the survey from a solutions perspective, it is quite fascinating that no one talked about using solutions based on existing standards such as OAIS. No one offered a comprehensive solution to the many challenges they face. Instead, all based their current operating practices on the foundation of a continual search for better practices and complained about the magnitude of the problems they face. In essence, simply stating "We have all these problems and don't have good solutions."

This study confirms that the digital information storage industry has a crisis looming ahead. If it is not solved soon through innovative standards-based technology solutions, it will only get worse. As a classic example, the film industry's Science and Technology Council recently endorsed an archival solution based on recording digital masters back to film as the only reliable preservation method available today.[9] The question at hand is not if this trend will migrate to the data center. Many digital information objects now contain relationships, content, and links that can not be captured or portrayed by analog media anymore. It is no longer as simple as one respondent quipped, *"If you want to save it long-term, copy it to paper!"* We have only one viable option, solve the problems or prepare to lose the data.

[9] "…Earlier this year, three companies received Science & Technology Awards for their work on archiving. Feiner and his Pacific Title team were among the winners. Their solution takes the data from a digital intermediate and turns it into three-color separation negatives. In other words, they take the digital movie and turn it into good old-fashioned film." (Source: Variety International, "Digital proves problematic" David S. Cohen, April 20, 2007.)

RESEARCH PROCESS AND RESPONDENT PROFILE

Survey Methodology

The survey was online, collecting data from November 2006 to January 2007 drawing from an open, self-selecting audience. The survey was promoted world-wide through SNIA, ARMA International, and Society of American Archivists (SAA) association web-sites and newsletters. It was picked up by some additional friendly web-sites and discussed vociferously in several RIM and archivist bulletin boards. Interest was high and the debate stimulating.

Here was the introductory text used to help potential respondents, self-select.

"This survey is designed to capture business requirements for long-term digital information retention within the data center. Questions are asked about details of your operating practices and needs. This survey is anonymous to protect your ability to share information. However, we do need some basic profile information on you to be able to understand your responses in context with your responsibilities and to be able to 'cross-tabulate' the data. Please fill this section out completely. Please also note that it is better if you skip questions that you don't have accurate information about or don't apply to your situation - rather than guessing and potentially biasing results.

The 100 Year Archive Task Force operates from within the SNIA's Data Management Forum as a multi-agency committee working to define the storage requirements and best practices for long-term digital information retention. Storage systems are integral to long-term retention and new standards and best practices are needed to keep up with changing requirements and technologies."

The survey consisted of 63 questions in many formats including open-ended "fill in the blank" questions so that unbiased results and respondent comments could be captured. The survey took about 30 minutes to complete. Not all respondents were able to answer all questions. This was an expected result considering the variety of backgrounds and range of experience. The survey questions ranged from operating practices, to in-depth details about application and capacity profiles, to questions about each functional group's responsibilities and needs.

100 Year Archive Task Force Research Team:

- Michael Peterson, Chief Strategy Advocate for the Data Management Forum
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Respondent Demographics

This section presents profile and demographic information on the 276 survey respondents and their organizations. Use it to understand the profile of the respondents and to assess the success of the survey in drawing in a large, diverse set of respondents.

Figure 9

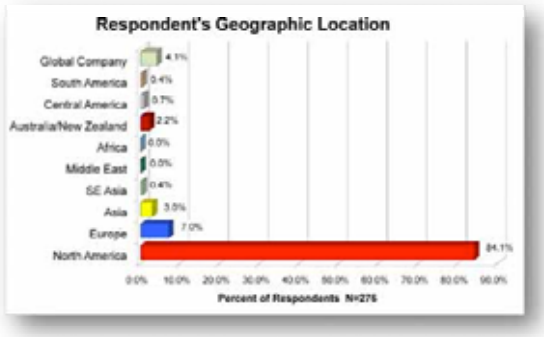
ORGANIZATION TYPE: The mix of respondents was in line with where long-term retention pain exists, governmental agencies, non-governmental organizations such as universities, libraries, and museums, and IT companies. The individuals representing the few vendors in the respondent mix were in professional services or IT outsourcing dealing with long-term retention and preservation problems for their clients.

Figure 10

INDUSTRY VERTICALS: With RIM, IT, and Archivists as the dominant respondent it is no surprise that the leading verticals represented by their organizations are education, government, IT services, and places where archivists work, including Libraries, Museums, and Churches. 65% of the respondents represented a very broad spectrum of organizations which further validates the importance and relevance of solving the long-term retention issues.

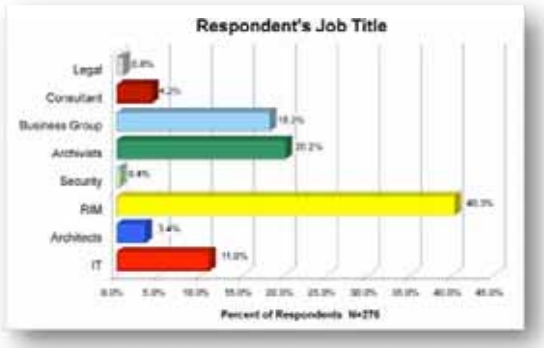
GEOGRAPHIC LOCATION: Most respondents were based in North America and Europe (91%) with a small percent from Asia and Australia/New Zealand and just a few from other geographies. This response provides more evidence of universal concern with the long-term retention problem as the survey was marketed actively in North America and Europe and very lightly in Asia and Australia.

Figure 11



JOB TITLES: The mix of respondent job titles was very broad. The majority of respondents (40%) carried a RIM title. Adding balance to the survey, were a number respondents belonging to a business group with titles like application specialist, business analyst, researcher, and even seven (7)-'C-level' individuals. Overall, a broad mix of respondents participated, including some from legal and security.

Figure 12



OPERATING ORGANIZATION YOU REPRESENT: In contrast to job title, this listing of actual responsibilities allowed multiple responses per person since many people have jobs that overlap multiple disciplines. This is an important perspective, "What organizational groups are represented in the survey?" RIM, business, IT, and Archivists dominate. The understanding of responsibility becomes clearer in the next question, 'What are your job responsibilities relative to long-term retention?'

Figure 13

100 YrATF Analysis:[10] Does this imbalance of RIM respondents introduce any identifiable bias in the results? Analysis of the data by respondent organization showed differences by organization regarding factors such as their view of drivers and requirements. But, since the study is not seeking to focus on differences, the bias is irrelevant. Instead, the study seeks to aggregate the collective wisdom. All viewpoints are needed and in that respect the study was successful in getting many types of people to participate.

RESPONSIBILITY FOR LONG-TERM RETENTION: Respondents were asked what their responsibilities are in their organizations. The top four responses correspond directly to the population of RIMs, Archivists, and IT respondents in the survey.

Figure 14

An open-ended question was attached to this one asking respondents to explain their responsibilities. The interesting responses follow on the next two pages.

[10] *100 Year Archive Task Force – this label* is used to mark analysis & opinion as compared to prior discussion that is only reporting on survey results.

RESPONDENT COMMENTS: What are your responsibilities relative to long-term digital information retention?

Respondent Comments

What are your responsibilities for long-term information retention?

I participate in setting retention policy and retention periods. I assist the IT department and records owners in establishing procedures for handling and retaining documents, to be sure their processes comply with our retention schedule.

Auditing of compliance with records retention policy.

I develop and implement policies and procedures governing the selection and preservation of all company records that have long-time archival value.

I recommend preferred media for long-term storage of records, based on the record type. There is a problem with the above question - long-term is anything over ten year retention.

Responsible for the management of all agency records, regardless of format - includes but not limited to storage, retrieval, preservation, compliance, format specifications and procedures, policies, authentication, etc.

Responsible for formulating policies and procedures for the enduring preservation of electronic records scheduled for archival retention for historical or other reasons.

In preserving digital design objects, we commit to preserving the contents of the files both functionally and at a bit level. Right now, our strategy is to implement a two-tiered collection: one that contains all of the native data (i.e., CAD formats, animations, renderings, etc.) that is monitored in DSpace for bit-level preservation via checksums and one that contains selected 'output' files that represent significant steps in the design process. These latter are translated into pdf or tiff formats and preserved on a functional basis as art objects.

As of right now, I am the sole person responsible for the translation/migration/preservation of these objects in the Architecture and Design Department; our IS department is responsible for maintaining the server on which these data are stored and the web interface for the collection management system.

I am required to acquire, preserve, catalog and make available information in all formats that in any way documents the history, people, and institutions of the West Florida region. These include publications regardless of format, many now emerging as CD/DVD, collecting records of agencies (families, churches, etc.) many of which may be digital in storage (databases, etc.). My agency has been in existence for 40 years.

Respondent Comments

What are your responsibilities for long-term information retention?

I am responsible for maintaining the institutional archives and managing the records management program. Digital information responsibilities are shared with the IT Department and a network of professionals interested in evolving records management policy, procedures and best practices (representatives from IT, Communications, Legal and Audit). Establish policies that assist in making a long-term archive decision. Specifically, a risk analysis on whether a particular record will be required for greater than 1 year because of business, technical or compliance purposes. By establishing evaluation criteria that is tailored to our business, we hope to get most of our requirements documented and start looking for tools that can help us meet our practices. I keep current on standards, best practices, research etc. on digital preservation from the records management perspective and share that with decision makers to balance similar information from the IT perspective.

Storage Management, Disaster Recovery, Server Management, Backup & Recovery, & Business continuity Planning

(I am responsible for) delivering a Preservation Plan from analog to digital preservation of 35+ years of media recordings.

I am the archivist charged with the long-term retention of digital records. The mission of our organization is to preserve, protect and provide access to the documentary evidence of the history of our industry.

I help establish retention policies and manage the records transferred to the Archives for both short- and long-term preservation.

Develop Retention Periods, preservation and migration strategies and compliance procedures for our organization's information assets.

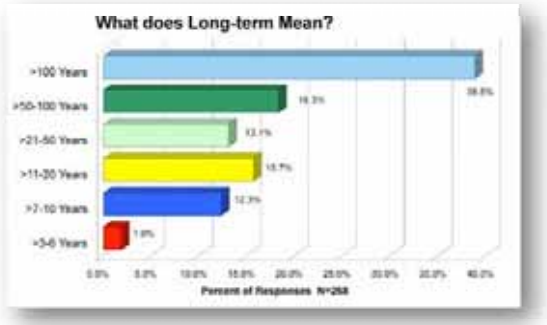
SURVEY RESULTS

This section of the report presents the summarized data from each of the questions asked on the survey along with analysis where appropriate. Interpretive analysis is marked as the "100 YrATF[11] Analysis".

WHAT DOES LONG-TERM MEAN:

The survey question was intentionally open-ended and did not provide a definition of "long-term". The intent was to capture respondent's beliefs without creating a bias by predefined categories. However, the results in Figure 15 are biased because of the influence of a high percent of RIM and Archivist respondents. See the Figure 16 for an analysis by job function. Overall, 98% of respondents called long term over 7-10 years.

Figure 15



100 YrATF Analysis: It is hard to accept that "long-term "means over 7 years by strictly reading this data. The challenge is that a more meaningful definition is needed because it does not align with experience. In discussing this problem one-on-one with archive practitioners, their experience identifies that a threshold does exist beyond which retention becomes real hard. Retention periods of less than 10-15 years are usually considered achievable with today's IT practices and periodic assisted migration. Beyond this timeframe, multiple migrations are required and the potential of losing or corrupting information increases rapidly. So, for the purposes of long-term digital information retention, the 100 YrATF is using the time period 'over 10-15 years' as the definition of long-term.

What does Long-Term Mean?

Over 10-15 years

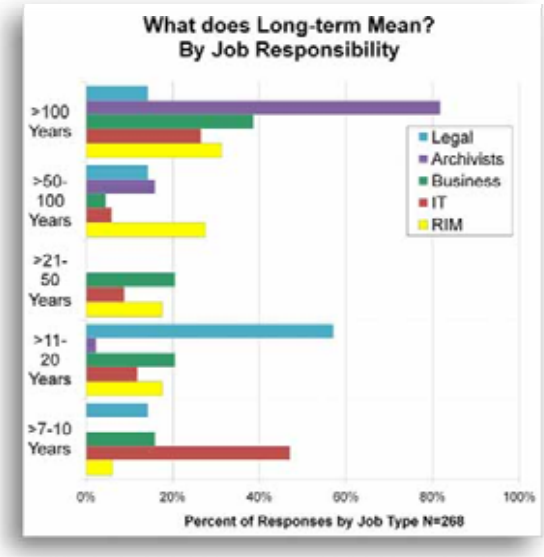
The driving force for a true Archive is the preservation of the history of the organization for hundreds of years. Your survey does not address the historic needs. It is a matter of preserving for future generations the important history and records of an organization. This is the problem with the 'Digital Archive', you are not thinking long enough into the future. (Source: Respondent)

[11] 100 Year Archive Task Force (100 YrATF)

Definition of long-term by job:

In Figure 16, the data from Figure 15 is analyzed by job responsibility. This data amplifies why collaboration is required since it is clear that each group has a different viewpoint. For example, RIM and Archivists are aligned - 60% of RIM and 97% of Archivists say long-term is more than 50 years. Whereas, 47% of IT says it is 7-10 years.

Figure 16



100 YrATF Analysis: These responses demonstrate that the IT frame of reference is very different from RIM or Archivists. Whatever the reason, the discrepancy in results confirms the need for collaboration between these groups to understand and help solve their long-term retention problems.

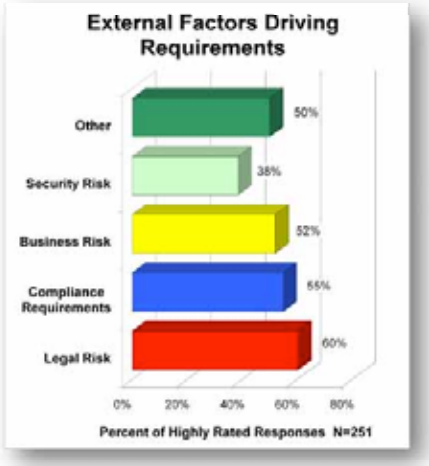
EXTERNAL DRIVERS

The next series of questions looks at the external drivers for long-term retention and how each factor is defined. Data is analyzed in summary form, as rankings by organizational responsibility, and by asking for definitions of what each driver means. This comprehensive look at drivers for long-term retention is aimed at better understanding the organizational issues and their requirements.

External factors driving long-term retention

The external drivers for long-term information retention are important. They explain why requirements exist for many parameters such as retention periods, confidentiality, security, integrity, and protection, they identify business risks, and they provide justification for budget and resource allocation to address retention programs. The top five (5) drivers identified are business, legal, security, compliance and other risk (the 'other-risk' category is principally "the risk of losing an organization's history").

Figure 17



100 YrATF Analysis: The variances by job responsibility are interesting but of no significance other than to further confirm the importance of collaboration and capturing all perspectives.

Next, respondents ranked the importance of these drivers based on their organizational responsibility. The differences are interesting and further reinforce the need for collaboration. Table 3 shows that fear of losing the organization's history is the top concern in the business group, compliance is the top concern for RIMs, and legal risk is top for IT, security, and legal. At the other end of the scale, security is not high in importance to anyone other than the security group. That merely means the other groups have larger issues such as legal risk.

Table 3

View Of Top External Factors As Drivers For Long-Term Retention by Organization

(Ranking 1-5, 1-High, 5-Low)

Organizational Responsibility	Business Risk	Legal Risk	Security Risk	Compliance Risk	Other* Risk
Business	2	3	4	5	1
IT	3	1	4	2	5
RIM	3	2	4	1	5
Legal	3	1	4	2	5
Security	3	1	2	4	5

* Other means principally – risk of losing the history of the organization

The next series of questions break down what each driver means to the respondents. In these, differences by job responsibility show up again.

What does Legal Risk Mean?

Legal risk is principally considered to be associated with litigation and compliance costs including fees for non-compliance or non-conformance. In the definitions offered by respondents, concern with incurring fees, fines, or bad press from regulatory violations or legal judgments overwhelm all other issues.

Figure 18

What does Compliance Risk Mean?

Compliance risk centers on fear of fines or loss of business reputation for non-compliance.

Figure 19

What does Business Risk Mean?

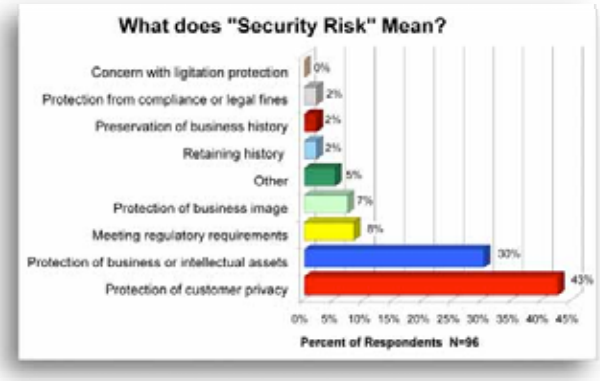
The top business risk reported was fear of loss of business history. This response is likely due to the high percentage of RIM and archivist respondents who have this responsibility.

Figure 20

What does Security Risk Mean?

Security risk, in the context of long-term digital information retention, centers on customer privacy and the protection of business or intellectual property assets.

Figure 21



What are the 'Other' Driving Factors?

The responses for what comprises "Other risk" are principally the need to preserve an organizations history and its business or intellectual assets.

Figure 22

What are the drivers behind the need to retain digital information? RESPONDENT COMMENTS

The driving force for a true Archive is the preservation of the history of the organization for hundreds of years. Your survey does not address the historic needs. It is a matter of preserving for future generations the important facts of organization. This is the problem with the 'Digital Archive', you are not thinking long enough into the future.

The following factors are used to determine the retention of records: Administrative value to the organization, Operational value to the organization, Legal (contractual, statutory and regulatory), Financial, and Historical value to the organization. These factors are evaluated together in order to determine what is the required records retention period.

The rationale varies per record series. Are you using the IT definition of 'archive' or the RIM definition? Considerations include historical value, ethical considerations, liability protection, innovation, IP and other potential values.

We work mostly with public sector, government clients, therefore, preservation of public records for historical & legal purposes is the predominant driver but also the ability to re-use/re-purpose digital information as business assets for future delivery of products and services is a common driver.

Preserving historical documents (digital and non digital) for future generations and having copies of documents in digital form for access.

The same thing as drives any organizational archive--the need to select, manage, protect and make available over time the records of the organization needed for historical, legal, and/or administrative requirements.

The National Archives preserves the history of the actions of the Federal Government and protects the rights of our citizens.

Operational efficiency - time taken to search and retrieve information assets in digital form Historical value of the data that researchers and the general public will want accessible in the future.

Respondent Comments

Long-Term Digital Information Retention Drivers

Retention Drivers

Solutions must meet the needs of all of them

Top External Factors Driving Retention Requirements:

This chart provides a compilation of the factors behind the drivers and looks for commonality. For example, concern about meeting 'regulatory requirements' overlaps both compliance and legal risk and was the second most common issue behind concern about retaining the history of the organization for competitive and preservation purposes. These are the top drivers causing focus on implementation of adequate long-term retention practices. The top five factors behind all the drivers are:

- Protection and preservation of the organization's history
- Meeting regulatory requirements
- Concern with litigation protection
- Protection of business or intellectual property assets
- Protection of customer privacy

100 YrATF Analysis: Any technologies or best practices being proposed as solutions to long-term digital information retention problems must also satisfy the needs of all of the business drivers.

Figure 23

INFORMATION PROFILE

The next section of the survey focuses on discovering the information profile of the respondent's sites including how information is managed and retained.

Who Defines Requirements for Business and Compliance Information

These charts show some interesting answers to the question of who defines requirements for business and compliance information. 14% said "All" which is a good indication that collaborative efforts are in place at some organizations. The top organizational groups defining requirements are the business groups and RIMs who define requirements in over 40% of the respondent's organizations. Legal only defines requirements for 15%-18% of the respondents. It is often assumed that legal 'controls' the entire requirement setting process, but that was not the case with this set of respondents. 14% said IT defined requirements. This is a low result, but consistent with other data in the survey such as the analysis on Page 41 & 42 that explores how well organizations are structured to meet long-term retention requirements.

Figure 24

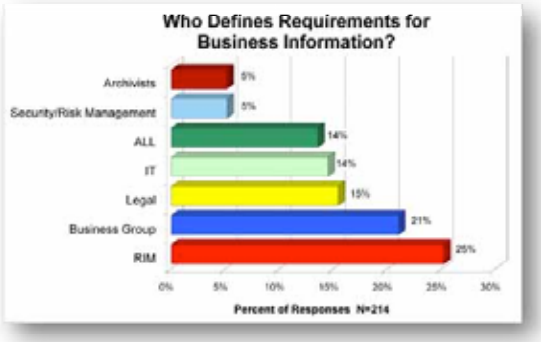
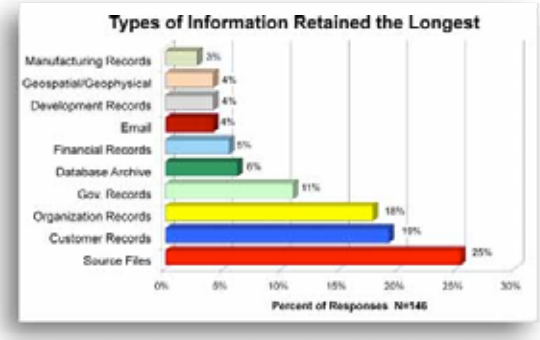


Figure 25

Types of Information Retained the Longest:

Source files, customer records, and the organization's records comprise 62% of the responses for the type of information being retained the longest. Few said information such as email or manufacturing records are kept the longest. "Source files" is an archivist term relating to the 'original' files or 'information objects' not backup, redundant copies, or unverified duplicates.

Figure 26



Each of the information types that are retained the longest have corresponding external drivers. For example, source files are controlled by compliance, legal, and business interests. Customer records have compliance and business requirements. And, organizational and governmental records have both compliance and historical value.

100 YrATF Analysis:

These results are highly dependent upon the profile of the respondents and should be used carefully. Generally speaking, the types of records that have the longest retention requirements are relative based on the type of organization and the specific compliance rules governing its business. Archivists and RIMs are most concerned with 'source files', the originals. IT would be more focused on databases, financials, or customer records. With the large percentage of RIM and Archivist respondents, it is not a surprise to see "source files" as the longest retained information type. What is a surprise in the data are the 6% who put 'database archive' records on top. This aligns with the data in Figure 29 on page 34. Structured information can not be overlooked as a key information type in the requirements for long-term digital information retention.

Longest Retention Requirements

The survey next asked, what is your single longest retention requirement? The results are impressive. 53% of the respondents said they have information that must be retained permanently and 83% said over 50 years. The long-term retention needs are real.

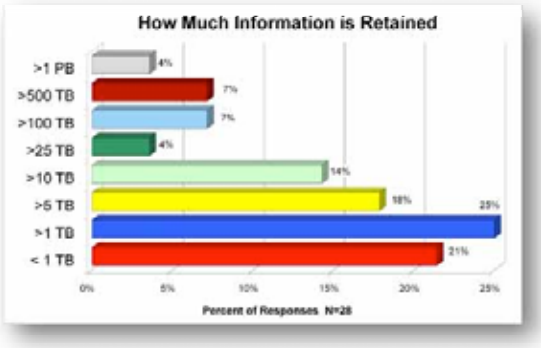
Figure 27

100 YrATF Analysis: The need for long-term retention is greater than expected. These results also point out the need for classification and collaboration with IT as different information types have widely different retention requirements.

How Much Information Is Retained?

Most archives at these respondent's sites are small, less than 5 TB. However, 18% said their problem is over 100TB. The 18% are validation that large-size, data center-based repositories are in operation. Even a couple petabyte size repositories participated in the study.

Figure 28

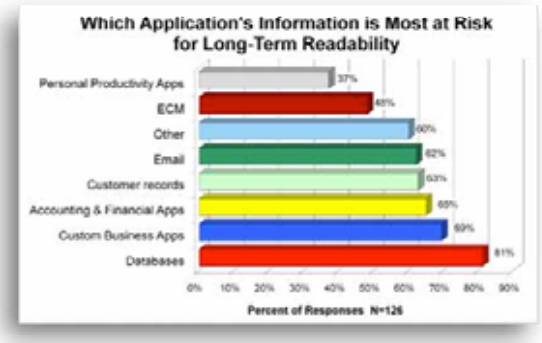


100 YrATF Analysis: As said in the slide, the high percentage of archivists in the study biases the size of the information repository down. On one hand, 5 TB is small. On the other, it has all the same problems as a large repository – just smaller in cost and scale.

Which application's information is most at risk for long-term readability?

Here is another important message in the survey data – all applications are at high risk. Database information is most at risk according to 81% of the respondents. The next three classes of information (custom, financial, and customer records) are usually also built on databases as well. If the data were recompiled in this manner, then email and document management risk would be well below database risk.

Figure 29



100 YrATF Analysis: The industry's focus on retaining unstructured data and email has left an important gap. According to these respondents, databases (including all enterprise applications running on databases) are at far more risk than any other type of information. The second point in the data is that all applications have long-term retention risk. Nothing is safe, providing more validation that this problem needs to be solved.

Long-Term e-Mail Retention Practices

The retention practices for e-Mail were looked at from two perspectives. First, are there different types or classes of e-Mail from a retention perspective and second, what percent of organizations retain e-Mail records over 10 years. This data confirms the importance of classification as requirements for e-mail vary significantly and correspond to the degree of regulation the organization operates under.

Figure 30

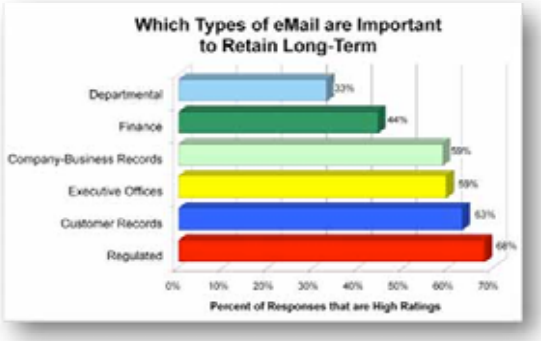
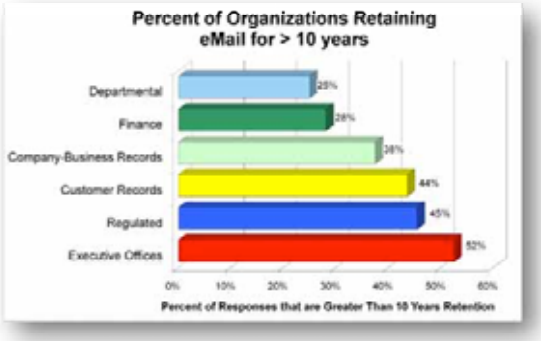


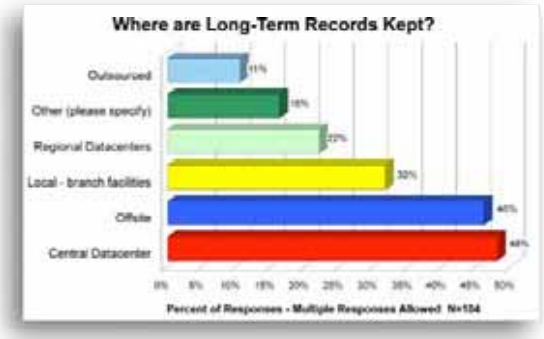
Figure 31



STORAGE INFRASTRUCTURE

The next section of the survey focuses on the storage infrastructure for long-term digital information retention.

Figure 32



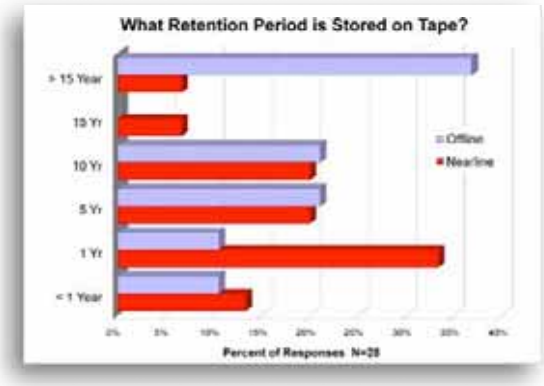
Where Are Long-Term Records Kept?

Central data centers and offsite disaster recovery sites dominate the location of long-term repositories. The 'local-branch facilities' response from the RIM and Archivist may be a terminology issue. IT professionals would categorize most of the 'local' sites as 'central' or 'regional' locations.

What is the Retention Period For Data Stored on Tape

The use of tape in long-term archives is legendary. 37% said it was their permanent storage media. Yet, many respondents were negative towards tape. In addition, their reported migration practices were very inconsistent. Figure 33 compares offline tape storage to nearline tape storage and shows very different use models for long-term retention. For example, information stored nearline where it is accessible is retained for far shorter periods than information stored offline. Why? 37% of respondents consider offline tape as their permanent archive media. In comparison, 46% of respondents keep information on nearline tape for one year or less.

Figure 33



TAPE PHYSICAL MIGRATION: Respondents were asked what physical migration cycle is used? 21% of the respondents said they do not migrate at all and 11% said they are moving away from tape entirely for long-term retention.

Table 4

How Do You Physically Migrate Data On Nearline Tape Used For Long-Term Retention?

Percentage of Responses, N=28

Unknown	39%
We don't Migrate	23%
Copy onto compatible format	14%
Moving away from tape	11%
Other	14%

100 YrATF Analysis: One thing this means is that tape is used in various ways in the storage tier as best practices seem to be very inconsistent. For 21% of the respondents to say they do not do physical migration, puts a lot of information at risk.

RESPONDENT COMMENTS

We do not use tape for long-term storage.

There must be a high level of error checking to insure no information is destroyed or changed.

We are moving to disk storage and moving away from offline. This is an ongoing initiative.

Tape is for backup purposes only. It does not provide an appropriate means of storing records.

We don't migrate. We don't keep information long enough to migrate because I recommend against storing long enough to need migrating.

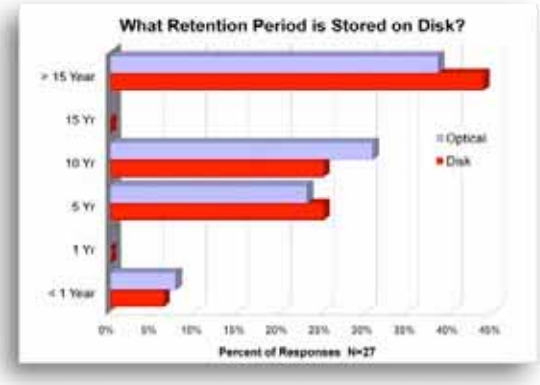
Respondent Comments

Migration on Tape

What is the Retention Period For Data Stored on Disk Media?

The retention profile of optical disk and hard-disk is very similar with one interesting surprise; more people said they have greater than 15-year retention on hard-disk than on optical media.

Figure 34



Approximately 40% of disk and optical disk responses are using these technologies for retention periods greater than 15 years. Migration practices are much more in line with the National Archive & Records Administration (NARA) requirements[12] than were the tape responses. But, 22% still claim that they do not 'migrate'. 22% is a very big percentage.

DISK PHYSICAL MIGRATION: When asked what physical migration cycle is used, these results were given.

Table 5

How Often Do You Migrate Data Retained On Disk?

Percent of Responses, N=27

Unknown	41%
3-5 years	30%
Continuously	7%
When Systems are Upgraded	4%
We don't Migrate	22%

[12] NARA requires migration on disk, every 3 years and on tape, every 5 years.

RESPONDENT COMMENTS

Once on CAS there is no migration except to create a replica on another CAS at a remote site.

Records should be retained based on their content, not on their format (or storage method, in this case). A migration plan is required for all records stored in an electronic information system that has a retention period greater than 5 years. Refreshment and migration strategies are established based on the nature of the records and the storage method employed. Usually, refreshment every three years and migration every five.

(Migrate) When technology obsolesces

Respondent Comments

on Disk Migration

OPERATIONS SATISFACTION STUDY

The next section of the survey analyzes satisfaction or dissatisfaction towards the operating areas of cost, migration, security, discovery, and organizational structure. How satisfied respondents are with their organization's internal capabilities tells an important part of the total story and helps identify needs.

Note: The format of the next set of charts is based on the percent of responses that rated their satisfaction or the importance of their programs either high (in agreement) or low (in disagreement) on 'Likert-scale' ratings. (Rate 1-5, 1 low, 5 high) The best way to interpret each chart is to consider the percent high against the percent low. To interpret preferences or opinions look at each end of the scale to evaluate results. For example, a response that is 50% high and 20% low indicates that the most respondents are in strong agreement. The missing neutral responses are essentially statements of 'I don't know' or 'I don't feel strongly one way or the other'.

Figure 35

What is Your Satisfaction with Programs your Organization is Doing to Reduce The Cost of Long-Term Retention?

Programs to Reduce Cost of Retention	Percent of Responses that are High Ratings	Percent of Responses that are Low Ratings
Classifying Information's retention periods	58%	18%
Only keeping "important" information long-term	38%	32%
Coordinating the business IT RIM & security to classify info & set requirements	33%	30%
Manually Purging expired data	32%	28%
Classifying Information on creation	31%	43%
Complaining about cost	28%	43%
Setting rules for automatically purging expired data	25%	48%
The business IT RIM & security are working to solve the cost problems	24%	33%
Moving to dedicated archival systems	21%	46%
Nothing	19%	61%
Leaving it to IT to figure out	19%	55%
Implementing charge-back for long-term retention	7%	78%

N=129

Several important points stand out in Figure 35. At the 'this is very important' end of the ratings, classification, collaborative efforts, and eliminating expired data jump out as the focus area for reducing cost. At the 'not important' end of the ratings, 'charge

back' is not a preferred method. And, 20% were in agreement that they are doing 'nothing' or that it is IT's problem.

What is Your Satisfaction with Your Organization's Ability to Solve Media Migration and Long-term Readability?

Very little more needs to be said about migration other than the responses to these questions. These responses validate that migration is a huge problem that is not getting a lot of attention outside of people casting around looking for better approaches.

Figure 36

Programs to Solve Migration & Readability	Percent of Responses that are High Ratings	Percent of Responses that are Low Ratings
Migration is a huge problem and we need help	49%	28%
Looking for better systems that will handle migration	36%	35%
Overwhelmed with capacity growth in the archives	31%	40%
Unable to cope with the load and cost of migration	27%	44%
Pretending it will go away or it is someone else's problem	24%	62%
Hoping IT has it figured out	22%	56%
Writing images and in an archive format with embedded metadata (XML PDF-A)	22%	52%
Spending a lot of time and money	21%	50%
Archiving systems and applications to assure we can read the information	20%	50%
Nothing	17%	65%
Implemented pre-planned media migration schedules	18%	63%
Following the OAIS standard	11%	66%

N=125

100 YrATF Analysis: The messages in this chart are very important. ~50% are in agreement that migration is a huge problem and they are not spending time and money on fixing it. ~20% agreed that they are doing nothing to solve the problems other than hoping someone else has it figured out. 27% said that they agreed that they are unable to cope with the load and cost of keeping up with migration. Only 22% said they are trying to write long-term archive formats. What are the rest doing? Not enough to assure survivability of their information long-term.

How Satified are You with Your Organization's Security & Privacy Controls to Reduce Long-Term Retention Risk?

The responses indicate that encryption and classification are well established in the practice of secure long-term retention. Only 16% agree that they are doing nothing.

100 YrATF Analysis: These results are not what are expected from the IT community's perspective. The apparent inconsistency in this data may be that RIM and Security people generally define and operate security controls and IT does not.

Figure 37

Programs to Reduce Risk	Percent of Responses that are High Ratings	Percent of Responses that are Low Ratings
Handling 'highly confidential' information separately from 'non-confidential'	46%	29%
Coordinating the business IT RIM & security to classify info & set requirements	43%	29%
Controlling access to confidential data via separate authentication practices	36%	37%
Classifying Information based on Security & Privacy on creation	36%	36%
Re-Classifying Information when its value changes	30%	44%
Encrypting all confidential data in transit	27%	52%
Handling all information the same	22%	59%
Encrypting all data in transit	16%	62%
Nothing	16%	68%
Encrypting all confidential data at rest	15%	65%
Loosing track of or control of growing numbers of encryption keys	12%	73%

N=123

How Satisfied are You with Your Organization's Legal Discovery Capabilities?

eDiscovery is a big issue according to 37% of the respondents and on the inverse side, 30% said that they do not have eDiscovery programs in place. ~33% of respondents said eDiscovery is a big challenge in the long-term digital information repositories they manage. And, 19% are deploying special purpose repositories that have discovery capabilities integrated.

Figure 38

Satisfaction with Legal Discovery Programs	Percent of Responses that are High Ratings	Percent of Responses that are Low Ratings
Struggling to search the long-term digital repositories	37%	38%
Struggle to find all the distributed archival media	34%	39%
No Discovery Programs	29%	62%
Working to automate discovery across the long-term archive repositories	25%	53%
Always able to find all information requested within the allotted timeframe	23%	51%
Deploying special purpose digital archives with discovery capabilities	19%	62%

N=116

How Well is Your Organization Structured to Meet Long-Term Retention Requirements?

This question probed the existence of collaboration and the role security and legal professionals play in setting requirements.

- 20% agree that IT is autonomous
- 49% agree that security has an important role
- 15% agree that legal is in charge – this corresponds to the results presented on Page 31

Figure 39

Satisfaction with Organizational Structure	Percent of Responses that are in High Agreement	Percent of Responses that are not in Agreement
Security has an important role in setting requirements	49%	14%
IT is closely Aligned with the Business Group	44%	17%
IT is closely Aligned and coordinates with RIM	35%	31%
IT, RIM, security, and the business never talk about requirements	23%	57%
IT is autonomous and has to guess or make up its own rules	20%	50%
Legal runs the show	15%	43%

N=121

100 YrATF Analysis: This data indicates that many companies have not organized or established collaborative responsibilities to manage their long-term retention and preservation requirements.

Are You Satisfied With Your Organization's Long-Term Retention Methods?

This set of questions queried respondent's satisfaction with their long-term retention practices.

Figure 40

Satisfaction w/ Long-Term Retention	BUSINESS	IT	RIM
Retaining value to the organization in its long-term archives	47%	51%	41%
Storage systems used for long-term retention	34%	53%	25%
How well the organization works together to assure retention and readability	20%	49%	22%
Ability to access & read information in 7-10 years	33%	48%	24%
The cost and ability to migrate data to newer media technologies	24%	35%	18%
Ability to comply with legal discovery requirements across the various repositories	20%	30%	20%
The cost to maintain long-term archives/repositories	18%	21%	26%
Ability to access and read information in 50+ years	19%	21%	17%

N=53

100 YrATF Analysis The results corroborate the message received many times that improvement is needed on many fronts.

- IT is far more satisfied than RIM or the Business Group. This could be because they define "long-term" as a shorter period than RIM or the business does.
- Business and RIM are very dissatisfied with the collaboration with IT to assure long-term retention and readability.
- Very few IT respondents are satisfied that they can access and read information over the long-term.
- No one is happy with the cost of maintaining long-term information access. It is important to remember that responsibility for information risk lies with the business and not IT. Only the business group understands the value of the information.

Are You Dissatisfied With Your Organization's Long-Term Retention Methods?

Figure 41 tabulates data that is the inverse of the previous question. "How 'dissatisfied' are you?" In the previous question, ~50% claimed satisfaction with their ability to retain value in the long-term archive and 50% of IT claimed satisfaction with their storage systems. Here less than 20% of IT state they are dissatisfied compared to 43% of RIMs. When asked specifically about the ability to access and read information in 50 years, 60% are dissatisfied.

100 YrATF Analysis: What is different between IT and RIM responses? It is known that they have different expectations and experience. IT thinks of long-term as greater than 7 years and RIM as greater than 50. In addition, most IT respondents do not know the business requirements for retention, while the RIM community is focused on information value and retention and have a clearer awareness of what 'successful retention' means.

Figure 41

Dissatisfaction with Retention	BUSINESS	IT	RIM
Retaining value to the organization in its long-term archives	26%	19%	43%
Storage systems used for long-term retention	34%	16%	57%
How well the organization works together to assure retention and readability	50%	23%	59%
Ability to access & read information in 7-10 years	40%	28%	50%
The cost and ability to migrate data to newer media technologies	42%	33%	45%
Ability to comply with legal discovery requirements across the various repositories	48%	35%	61%
The cost to maintain long-term archives/repositories	53%	32%	37%
Ability to access and read information in 50+ years	57%	55%	68%

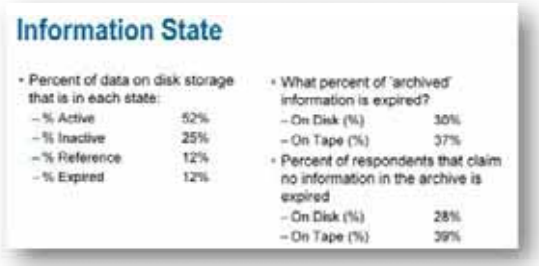
N=53

The most surprising data in this chart is that only 55% of IT (compared to 68% of RIMs) are dissatisfied with their ability to access and read information in 50 years. Perhaps, this is confirmation that IT really doesn't understand the problems associated with long-term retention.

What is Your Profile of Information State?

The survey asked: respondents to profile their current "information state" in their data center on server-disk storage (not including desktops). State was defined to include four use-modes: "active, inactive, reference, or expired".

Figure 42



100 YrATF Analysis: Unfortunately, RIM and archivists have different definitions for these terms than does IT which may have biased the results. Even so, the results are consistent with previous studies whose data ranges from 52% to 55% active, 20% to 25% inactive, 10% to 15% reference, 10% to 15% expired. Without robust eDiscovery, permanent deletion tools, and supporting practices, it is reasonable to see that 30%$^{+}$ of 'archived' information was reported as 'expired'. The paradoxical responses that claim that archives by definition do not contain expired information raise an important note. Either these people are doing a very good job of deleting expired information before archiving or their view is that everything in the archive is supposed to be there and will be held forever. This does not seem realistic for the data center and is actually not a good practice.

What is Needed to Cope With the Changing State of Information Over the Next Ten Years?

This question was asked to understand if the respondents had any expectations around changes to expect in the future. The responses indicate clear awareness of the growing magnitude of the management problems in dealing with the ever increasing amount of digital information that has to be retained long-term and accessible. Answers included recognition of better tools, automation, classification, migration, training, practices, and data movement methods. They also include a small number of responses calling for better methods of handling a higher percent of active data. The responses are very insightful and supportive of the directions SNIA is taking ILM-based practices.

Figure 43

Respondent Comments

What is Need to Cope With the Changing State of Information?

RESPONDENT COMMENTS:

Higher percentage 'active' (in the future). If not, (we will face) increased difficulty in being compliant with managing business records as a corporate asset.

(An) update process for deleting expired data. Data currently does not have retention period(s) added (as meta-data). Therefore, increasing the amounts of outdated data that may require discovery funding and may hinder litigation.

Need something that is easy to update to be readable on a long-term basis.

As we move deeper into a KM (knowledge-management) world, I expect that the next 10 years will see the differences between active, inactive, reference or expired' to change to useful or useless and be treated accordingly.

No need for change if effective, controlled procedures (are) in place.

Ensure digital data remains retrievable and readable. Our policy requires data to be tested on both criteria and to be printed in the event of evidence of deterioration.

The distribution of state on disk must match the ongoing business value of the data - automatically - if not; it's an unsolvable problem, since the humans cannot keep up with the data onslaught.

Active use of disk will hit same problem as tape - bits will require extra management in order to ensure integrity. Same issues of indexing, labeling and losing data because of information (not data) association will be lost over time. Need standards for higher order management functions.

Percentages need to better align between active and inactive with more expired data purged.

Need to be flexible to accommodate changes in regulatory requirements and business processes.

Respondent Comments

What is Need to Cope with the Changing State of Information?

There needs to be a solution to the ever changing formats and versions which are non-compatible. This solution must be non-proprietary and insure no lose of data over the lifecycle of the records.

The volume of active and high-frequency accessed reference data will continue to grow rapidly - need better turn-around times on retrieval, especially from tape library storage, and increased capacity. If this doesn't happen, we will require acquisition and maintenance of multitudes of tape arrays/libraries, multiple SANS, etc., which will increase complexity in overall data warehouse infrastructure, and reduce usefulness of archived data.

Expired (information) needs to be purged otherwise unnecessary storage cost, legal exposure, and information overload.

Not as concerned with how it needs to change as in ensuring it occurs (does change). Uniform methods need to be developed and deployed for managing information based on its business and organizational value rather than its age and or perceived state. The state of information can change many times during its required retention, depending on the type and nature of work being done at any given time.

Fully automated is one answer. What happens if it doesn't change is that we will have to manage it better, ourselves.

Retain disk for active storage, migrate inactive content to lower cost system, migrate archival information to microfilm and to archival storage.

Better management tools for 'active' and 'less active' repositories.

The state of storage must be flexible and scalable, and can be migrated as the disks become obsolete.

There's no such thing as expired information if things are being managed properly, so that wouldn't apply.

We need proper lifecycle management of our digital records which is coordinated with the records retention schedule. Purge rules need to be implemented at the design stage of systems. Records of long-term value need to be migrated to alternate storage media which ensure accessibility over time (COM is still acceptable). The destruction (purge) of electronic records needs to be coordinated and authorized rather than being automatic.

100 Year Archive Requirements Survey

Respondent Comments

What is Need to Cope With the Changing State of Information?

We want to maintain up to 6 copies of archival versions in multiple locations through partners and possibly 1 offline copy. We want to keep 1-2 copies of reference copies.

From a records perspective, I need to maintain the recommended practice that disk storage not exceed 5 years. IT will want more inactive disk storage.

Systems that 1/ include disk and optical 2/ have intelligence based on rules that are specific to BU and through GED to individuals.

Data distribution will change more to inactive, reference. If expired data will not be handled, the volume will grow in the other areas 30 % per year.

We will be implementing an electronic records retention schedule once the document management system has been rolled out.

Better retention practices, including semi-active and disposition procedures.

IT needs to maintain the information and the metadata.

(Keep) long-term storage based on doc type/business application - not co-mingled.

(We are) looking to manage archived data dynamically, with software identifying expired data due for destruction.

More central coordination - fewer silos (of information or storage).

Inactive data MUST move to archive storage to avoid exponential growth in primary storage, and its associated costs.

5 years online 5-10 years nearline >10 off-line If this is not applied, (the) system will be full of unnecessary information.

REQUIREMENTS FOR LONG-TERM RETENTION

The last section of the survey covers respondent's views of what the requirements need to be from several different perspectives and closes with respondents making recommendations to their peers.

What are the Top Requirements for Long-Term Retention?

This question gets asked in several different ways across the course of the survey to look at the question from different perspectives and for consistency. Here are two views. First, a rating of business requirements in which long-term readability and accessibility rank highest followed by privacy, migration, and discovery. Now look at the table of "Top Pain Points". The pain-point perspective illustrates a different way to look at requirements, yet produces similar results. Technology problems and operational problems lead the list. Business requirements don't seem to make the top of the 'pain' list.

Figure 44

Table 6

Top Pain Points:

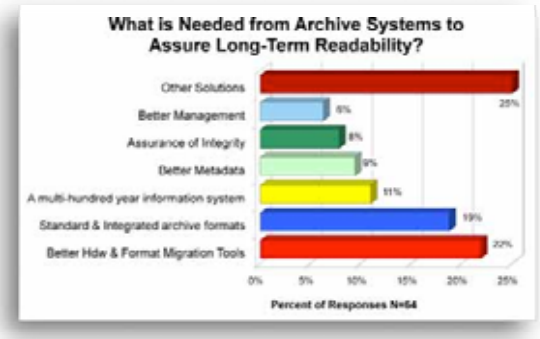
Percent of Responses N=144

Media Migration	12%
Maintain Readability	10%
Technology Obsolescence/Upgrades	10%
Lack of Business Support/Commitment	10%
Cost	9%
Classification	8%
Lack of Collaboration	7%
Discovery & Deletion Difficult	6%
Too Many/Legacy Formats	6%
Lack of Expertise/Discipline	5%

100 YrATF Analysis: Between the top pain points and the top business requirements, the 100 YrATF now has a prioritized list of important requirements for any proposed solutions to the long-term retention problems. The top pain points provide excellent validation of the requirements for long-term digital information retention. It is clear from this list that practitioners understand the problems and need help with solutions. Solving the technological problems of logical and physical migration are top on the list. What is also important in this data is recognition of the lack of business support, lack of collaboration, and expertise.

What is Needed from Archive Systems to Assure Long-Term Readability?

Figure 45



This question tests if needs for long-term readability introduce any new requirements? Practitioners identified that they want migration solved, standardized logical formats, better repository systems, metadata, integrity, & better management.

Several important points stand out in this graph:

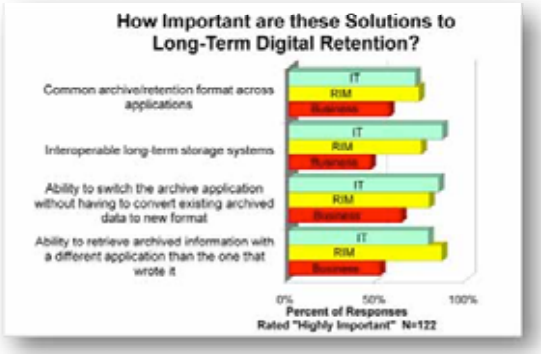
- 25% of respondents are looking for new technologies/solutions to the problem.
- 23% want higher data integrity, and better metadata and management tools (again, new technologies and solutions).
- 52% want better archive standards and hardware, migration tools, and information systems that address long-term retention needs.

100 YrATF Analysis: Unfortunately no one came forward with anything new. Rather, this is just a list of components to be included in a comprehensive solution. The conclusion still stands that the first technical goal is to solve the migration problems.

How Important Are These Solutions to Long-Term Digital Retention?

This question tests respondent's expectations on how they would like to see the logical readability problem solved from three different viewpoints, IT, RIM, and the Business Group. The differences in responses illustrate the differences in job responsibilities well. IT wants better systems, RIM wants better long-term retention, and the Business Group just wants it taken care of.

Figure 46



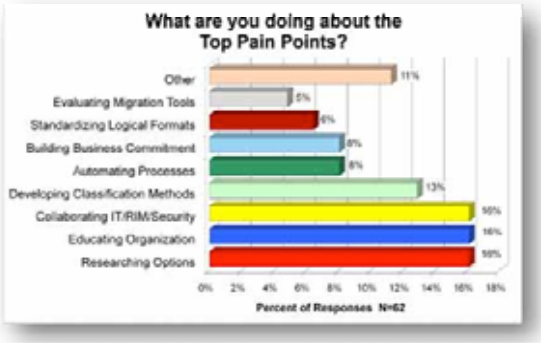
100 YrATF Analysis: These variances by job responsibility are normal and expected. Statistically, no one method of solving the problem seems to matter over the other.

What are You Doing To Address Top Pain Points?

During the discussion of problems and solutions, the survey not only asked what the "top pain points" are but, what the respondent's organizations are doing about them. The responses clearly show that organizations recognize the need to address retention issues.

The majority, 57%, of the responses lie in the area of improving operating practices such as collaborating, classifying, automating processes, and standardizing logical formats.

Figure 47

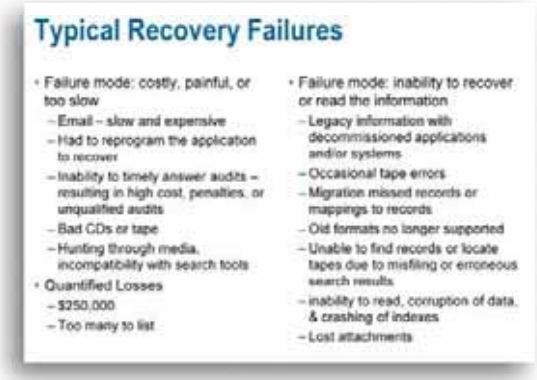


100 YrATF Analysis: Today, practitioner's have no silver bullets in the form of technology solutions. They have to rely on best practices beginning with collaboration and information classification.

What are Examples of Causes of Recovery Failures?

Respondents made a long list of experiences they have had in which they failed to recover information from the archives. The examples fell generally into two categories, when the 'failure mode' was excessive cost, time, or pain and when they were unable to read or recover the information.

Figure 48



100 YrATF Analysis: This list is interesting to read and further validates the complexity of the current operating environment plus the real need to solve the problems that today's practitioners live with.

Respondent Comments

Examples of Failures

RESPONDENT COMMENTS:

As of yet we've had no experiences with recovering information. However, concerns to be aware of include the number of erroneous hits (applicability of returns in regards to search criteria), unable to locate the document due to misfiling; error in record as the application is unable to read the record; corruption of data in the archives; crashing of the knowledge base; stability of network (getting it back up after it goes down).

We have lost very little in 40 years and mostly derivative formats rather than archival or original.

Failures not experienced but anticipated include moving data to tape, then not being able to read the tape years down the line due to the proprietary nature of backup systems, especially if backup systems have changed in the interim.

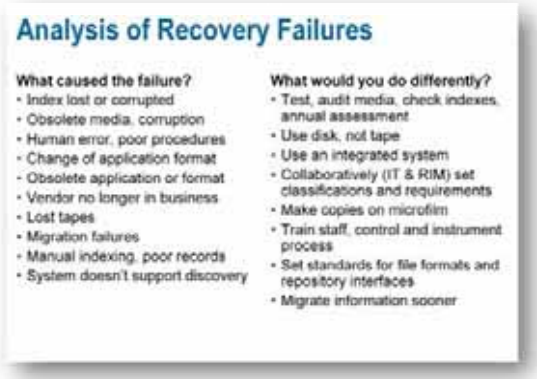
Outlook e-mails that were archived to a KVS repository lost the attachments when filed into the RMS (Records Management System).

What Caused The Failures? What Would You Do Differently Next Time?

This is the follow-on question to the previous one. The responses are tabulated and the comments listed for reading.

RESPONDENT COMMENTS:

Figure 49



Cause: Index file corruption in regards to the knowledge base. Recommendation: Test index files for corruption (and maintain back-ups)

Cause: Obsolete media. Media breakdown (diskette or CD went bad). Recommendation: I would tell the departments that had this happen to use mass storage devices, not optical media for storage.

Cause: Human error sometimes, lack of failsafes in procedures. Recommendation: Audit processes regularly, automate as much as possible, focus on archival formats.

Cause: Email Attachments - The process of reconnecting the attachments with the referenced stub failed during the filing process. Recommendation: Have IT test a product fully with the RMS integration before implementing.

Cause: Information even a few years old can no longer be read on Disks. Lack of training for users of the media. Recommendation: Partner RIMs and IT, ensure this is NOT an adversarial relationship (both sides need to work on this). Train IT in RIM methods early, at the basic level for IT. Basic RIM training for all staff, and better training for help desk staff. Ensure everyone understand every application best practices.

Respondent Comments

What Caused Failures

Respondent Comments

What Caused Failures

Cause: Loss of substantial information when shifting applications (not well mapped and migrated). Generally caused by software interpretive rules and technology changes. Recommendation: I don't know what else I could have done

Cause: Bad indexing/listings and labeling of tapes in off-line storage, lack of regular quality checks of data tapes, not making back-ups and storing them separately, lack of data extraction testing from data tapes when processes are implemented. Recommendation: Include data model used for data on tape on all tapes. So, reading/understanding data can be achieved, especially if data tables or databases are changed over time. And, have good inventorying process for all off-line media.

Cause: Incompatible formats. Recommendation: At this point, we're mostly dealing with records written in formats that are no longer supported and/or available to us.

Cause: System unsearchable. Recommendation: Do not allow IT to determine system requirements with regard to RIM needs.

Cause: Unknown systems, lack of complete set of tapes, tape failures, data corruptions. Recommendation: Develop better systems, develop migration strategies, contain costs associated with migration, and have a better interface with RIM.

Cause: Human error and failure to adequately identify information and need to migrate it. Recommendation: Annual/periodic assessment of systems and full inventory of systems and the data they support. Regular meetings with data owners to ensure systems are still required and supported.

Cause: Loss of support from vendor. Recommendation: Backup on microfilm.

Cause: Outdated version, that was no longer accessible with today's technology. Recommendation: Would like one electronic database for use across the company that is updated and maintained by RIM in conjunction with Legal and IT.

Cause: Electrical, restore procedures. Recommendation: Go vanilla, don't built your own mousetrap, don't depend on non-scalable solutions, don't under-resource the training requirements for end-users.

Cause: Probably poor media. Recommendation: Buy certified tapes. Exercise tapes before writing Test before and after writing. Sample signal during retention period.

Cause: Absence of email management software. Recommendation: We are implementing email management software in all our major business areas. This is the one area

where the business case for storage costs can be made based on de-duplication, and where executives are aware of court cases impact on costs and reputation.

Cause: Lack of standardization for data entry and data preservation (unable to search and data corruption). Recommendation: Standardize practices for indexing. 'Force' vocabulary control. Standardize system administration. Usable metadata documentation. Adherence to preservation practices. In general, compliance with the agency's RIM policies and practices.

Cause: There are always records that don't migrate, usually from acquisitions. Different applications and platforms than the ones we use. Recommendation: We get IT teams in to do the migration for us.

Cause: Inability to timely answer audit questions resulting in unqualified audits. No structure or organization to the retention program, making the data that could be retrieved undependable. Recommendation: Start with the basics of putting policies into place and then enforcing them from the top down.

Cause: Logical Format and storage systems. Recommendation: KISS. Work with people first, establish rules and then implement systems.

Cause: I.T.'s failure to preserve e-mail. Recommendation: Printout e-mail and classify.

Cause: Too many to list. Data not indexed. Recommendation: Apply classification to all information and store according to class.

Cause: Media degradation. Recommendation: Do more output to microfilm.

Cause: Information in an old format. Recommendation: Migrate information sooner.

Cause: Data cannot be found; data take a long time to find. Poor storage system and poor storage practices. Recommendation: Nearline storage integrated with the ERMS.

Cause: Not able to find records through search tool. Poor indexing which is done manually. Primarily human performance errors. Recommendation: Constant training/review of importance of indexing and records, firmer controls for consistency in a database.

Cause: Db's produced with antique applications. The wetware refused to upgrade when it would still have been possible to

Respondent Comments

What Caused Failures

Respondent Comments

What Caused Failures

migrate the databases. Recommendation: Mirror the applications and databases, upgrade centrally. Be persistent.

Cause: Change server system and be unable to access data in the old format, types and logical format. Recommendation: Migrate all the information before changing.

Cause: Obsolete tape formats, no readers available. Inability to locate backup tapes, outdated email application formats, digital preservation planning. Recommendation: Including digital preservation & e-records requirements in the planning/design phase of upgrading or new systems procurements/development. Include archivists and records managers on enterprise architecture committees. Adopting open architecture and standards for file formats and repository interfaces.

What Recommendations Do You Have for Your Peers?

The last survey question gave respondents an opportunity to make recommendations. Their comments are summarized in the figure and listed for reading. The messages amplify and reinforce the conclusions drawn and presented in the executive summary of this report.

Figure 50

RESPONDENT COMMENTS

When using a digital archive understand you will have a long hard expensive road to keep the records. You have to think about the ability of your great, great, great, great ... grandchildren being able to read and logically interpret what your history was.

Remember that IT doesn't own the information. RIM, Legal, Business units and IT all have a part to play in the decisions applied to business records and should be sitting down at the table together.

Print to paper if possible and manage until a real solution comes along.

Respondent Comments

Peer Recommendations

Metadata is important, and it's better to implement the metadata at the front end rather than populating the metadata after the record has been saved into the repository. Work in tandem with IT.

I would tell the departments that had this happen to use mass storage devices, not optical media for storage. Backup your data on a regular basis. Refresh and migrate records on a regular basis. C all me if they're having problems. Just a general comment on the survey - the vocabulary used in it seems problematic. Records retention is different than depositing something in an archives. Archiving is a very problematic word and I would suggest not using it. It suggests dumping records into some bottomless pit where they can be forgotten. Ingest into a recordkeeping environment, or to permanently preserve for long-term records retention seem better. Long-term seems problematic as well, because you haven't defined it - does this mean greater than 25 years or greater than 100 years, or the day after I retire?

Collaborate and rely on standards and good practice.

Talk to Archives. They have been looking at this problem longer than business has. Involve senior management early in the process and be sure there is a common goal outside the influence of technology enthusiasts.

Prayer. Backup on microfilm.

Get RIM and IT at the same table. Create a relationship. Both need to be included up front to develop solutions that will work on both sides.

Inventory all systems and data Determine who owns and uses what Pay attention to organization restructuring and how it impacts data Budget to support and convert data in systems when systems are initiated and/or deployed Greater involvement between IT and RIM regarding retention requirements and segregation of data based on privacy and other issues A clear understanding between IT, Users and RIM of terms 'Archiving', 'Retention', and 'Backup' to ensure they are properly applied to management of information.

For absolute produce-ability maintain a hard copy or create a secure/backed-up/updated electronic repository using pdf images.

Stay with industry standards. THINK about why you're retaining something. Just THINK about it. And don't spend a dime to save a nickel. Keep as little as possible in long-term.

Respondent Comments

Peer Recommendations

Research your legal requirements and use technology as fully as possible to classify retention periods and destruction.

Communication and visibility about the issues Compliance with agency's RIM policies and practices – enforcement.

Upper management advocacy.

If you are fortunate enough to be in the early years of your data, get on top of it now. It is much easier to keep the data tame from the beginning than to try to tame it later.

Balance claims of vendors & IT for long-term accessibility with recommendations of records managers.

KISS - work with people first, establish rules and then implement systems.

Preserve hardcopy in offsite storage wherever possible and feasible.

Research, read and participate in training, seminars, and ARMA/AIIM events.

Segregate your information by record type.

Output to Microfilm. Index well and output to the only true 100 year media.

Know that this has to be addressed frequently. You cannot assume someone else is taking care of this.

The customer does not get to determine the policies of the RM department.

Write a plan. Ours is done this year, 2006, approved as of Jan 2007. Next, get it implemented. All archives to be in order from 2007 to 2012 when all must be in place.

Keep as little as possible in long-term.

-- End --