

# MANAGING THE LIFE CYCLE OF DIGITAL DOCUMENTS

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# Topics to be Covered

- Importance of the topic
- Key terms and concepts
- Business case for digital documents
- Issues and concerns
- Digital documents as official copies for retention
- Data migration and alternatives
- Software to manage the life cycle of digital documents

# The Problem

- Most documents originate in digital form
- Many paper documents are scanned for storage and retrieval as digital images
- Many digital documents are never printed
- Retention periods apply to one copy of a record—the official copy
- Older solutions are not workable -- Printing and filing digital documents to produce official copies for retention is neither practical nor economical.
- Does paper recordkeeping have a future?

# Key Terms and Concepts

- Information life cycle
- Electronic records
- Digital records
- Structured vs. unstructured electronic records
- Digital documents
- Born-digital documents
  - Character-coded text
  - Vector files
- Document images
- Digital document images

# Business Case for Digital Documents

- For born-digital documents: the path of least resistance
- Improved retrieval
- Online access from any authorized location
- Simplified distribution of documents
- Centralization of document repositories implemented in-house or cloud-based
- Ability to re-use for other purposes

# Business Case for Digital Documents

- Improved file integrity and completeness
- Improved version control
- Space savings
- Protection from wear and tear
- Simplified backup protection for mission-critical documents
- Automated workflow for document-based business processes

# Issues and Concerns

- Legal status of digital documents
- Usability of digital information over long retention periods
  - Stability of digital media
  - Availability of compatible devices
  - Readability of file formats
- Ability to implement retention guidance for non-permanent records

# Digital Documents as Official Copies

- Definition of official copy
- Possible scenarios
  - Digital document has unique content
  - Content replicated in digital and paper documents
    - Complete replication: electronic source records, paper documents as computer input source
    - Partial replication – for example: annotations or signatures
  - Paper document has unique content



# Digital Documents as Official Copies

- Retention decisions are based on same criteria for digital documents and paper records
- Economic advantages vs. paper documents for retention
  - Digital vs. office storage
  - Digital vs. offsite storage

# Legal Acceptability for Retention

- 15 US Code 7001(d)(3) – digital documents satisfy requirements for records in “original form”
- Various sections of CFR revised to accept electronic records
- Uniform Electronic Transaction Act (UETA)
- Canadian Personal Information Protection and Electronic Documents Act (PIPEDA) and Uniform Electronic Commerce Act
- Other countries: laws based UNCITRAL model

# Exclusions

- Digital documents related to non-commercial and non-governmental matters: powers of attorney, healthcare proxies, DNR orders
- Wills and testamentary instruments
- Records related to adoptions, divorces, family matters
- Certain court documents: pleadings and motions
- Insurance cancellation notices, credit default notices, foreclosure and eviction notices
- Documents requiring notarization
- Where a law or regulation specifically requires paper documents

# Digital Documents as Evidence

- Admissibility and rules of evidence
- Foundation requirements: relevance and authenticity
- General authentication requirements for records
  - Created at or near the time of the event that is subject of litigation
  - Created by person with knowledge of the event
  - Maintained in regular course of business

# Data migration

- Definition and purpose
- Performed at predetermined intervals or when circumstances warrant
- The longer the retention period, the greater the likelihood
- Must be considered where retention period > 10 years
- Also consider the time frame for future upgrade or replacement of hardware or software
- Varieties
  - Media migration
  - File format migration
- For permanent records: perpetual commitment and pyramidal effect

# Data Migration Plan

- Define roles and responsibilities
- Identify digital documents to be migrated and excluded
- Determine migration intervals for media and file format migration
- Specify functional requirements for replacement media and file formats
- Specify functional requirements for data migration tools or services, resources to be developed or acquired
- Determine compliance requirements that may affect migration
- Define and implement quality control requirements and mechanisms
- Retain original records until complete, accurate migration is confirmed

# Data Migration Alternatives

- Use file formats that support long-term retention – example: PDF/A
- Keep legacy devices and software in service – but this is a short-term solution
- Retain paper documents, microfilm, or hybrid scenarios
- Reduce retention periods below 10 years whenever possible
- Destroy obsolete digital documents to eliminate them from migration process
- Limit migration to official copies: eliminate duplicate records and transitory documents

# RMA Software

- Maintains a reliable repository for retention of digital documents
- Intended for inactive phase of information life cycle: contrast with ECM products
- Role of DoD 5015.2-STD, MoReq, VERS in defining baseline functionality requirements
- Supports user-defined file plans and indexing requirements
- Digital documents in the RMA repository are “locked down” for retention purposes
- Will be retained until they are eligible for destruction
- Can suspend destruction for legal holds, audits
- Available for in-house implementation or as cloud-based application



# Archival Preservation Software

- Based on the Open Archival Information System (OAIS) reference model – ISO 14721
- Designed specifically for digital preservation of permanent records
- Not suitable for digital documents with defined destruction dates
- Accepts archival content from multiple sources
- Supports user defined file plans and indexing requirements
- Principal market is archival agencies, libraries, other scholarly repositories in government, universities, cultural institutions
- Available for in-house implementation or as cloud-based application

# Email Archiving Systems

- Designed specifically for retention of messages and attachments transferred from email servers
- Archiving performed automatically at specified intervals
- Archived content remains accessible to mailbox owners, other authorized persons
- Full-text indexing of messages
- Single-instance storage handles problem of duplicate messages
- Available for in-house implementation or as cloud-based application