British Columbia Ministry of Management Services Security & Privacy Conference 2005 Synergies in an e-Society

Managing Electronic Records WORKSHOP

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Workshop Overview

- E-Records Management Primer
- The BC E-Records Situation
- BC EDRM System Demonstration
- Digital Preservation Primer
- Participant Survey Results
- **⇒** Q&A

E-Records Management Primer

- E-Records Management Concepts
- Benefits of Records Management
- Enterprise Content Management
- E-Records Management Challenges
- Online Resources

What is a record?

- "information created, received and maintained as evidence and information by an organization, person in pursuance of legal obligations or in the transaction of business."
 - ❖ ISO 15489-1:2001(E) Records Management

What is a record?

- Provides the required information to initiate, execute and complete business functions
- Serves as evidence that a business function or transaction was carried out for legal or accountability purposes
- Provides historical information about a business function and organizational activities for future reference and research

What is an electronic record?

- Electronic records are records in digital form
- E-records include email, word processing and presentation documents, data in corporate information systems, intranet and public website content, etc..
- Content, context and structure

E-Records Management and IT

- IT is used to create e-records
- IT enables e-records management
 - Enterprise Content Management
 - Storage management
 - Security management
- Electronic Records management is a sub-domain of Records Management, not a sub-domain of IT management

What is Records Management?

"the field of management responsible for the efficient and systematic control of the creation, capture, preservation, use and disposition of records, including processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records."

ISO 15489-1:2001(E) Records Management

The Records Lifecycle

- 'current' or 'active' phase
 - a record is actively involved in the initiation, execution and completion of a business function
- 'semi-current' or semi-active phase,
 - the record is set aside in the event that information related to the business function is required for follow-up, monitoring or auditing.
 - Those records that are not deemed to have permanent value are destroyed at the end of this phase
- 'non-current' or 'inactive' or 'archival' phase
 - preserved as an archival record so that is available for future reference and research

Records Management Processes

- 1. Capture records
- 2. Classify records
- 3. Store records
- 4. Access records
- 5. Track records
- 6. Destroy records
- 7. Preserve records

Records Management Tools

- records capture guidelines
- record registers
- record metadata schema
- record profiles
- records classification scheme
- business activity taxonomy
- authorized terms and codes
- security and access classification schemes

- finding aids
- tracking mechanisms (versioning, check-in/out)
- records disposition authorities
- disposition action documentation
- storage plan
- disaster recovery plan
- digital preservation plan

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Benefits of Records Management

- Maintain complete and accurate documentation of organizational activities to protect the interests of the organization and the rights of employees, clients and stakeholders
- 2. Prevent information overload and the retention of irrelevant, outdated or duplicate information
- 3. Comply with applicable laws and regulations including privacy and financial reporting requirements
- 4. Support efficient, enterprise-wide information discovery and retrieval

Benefits of Records Management

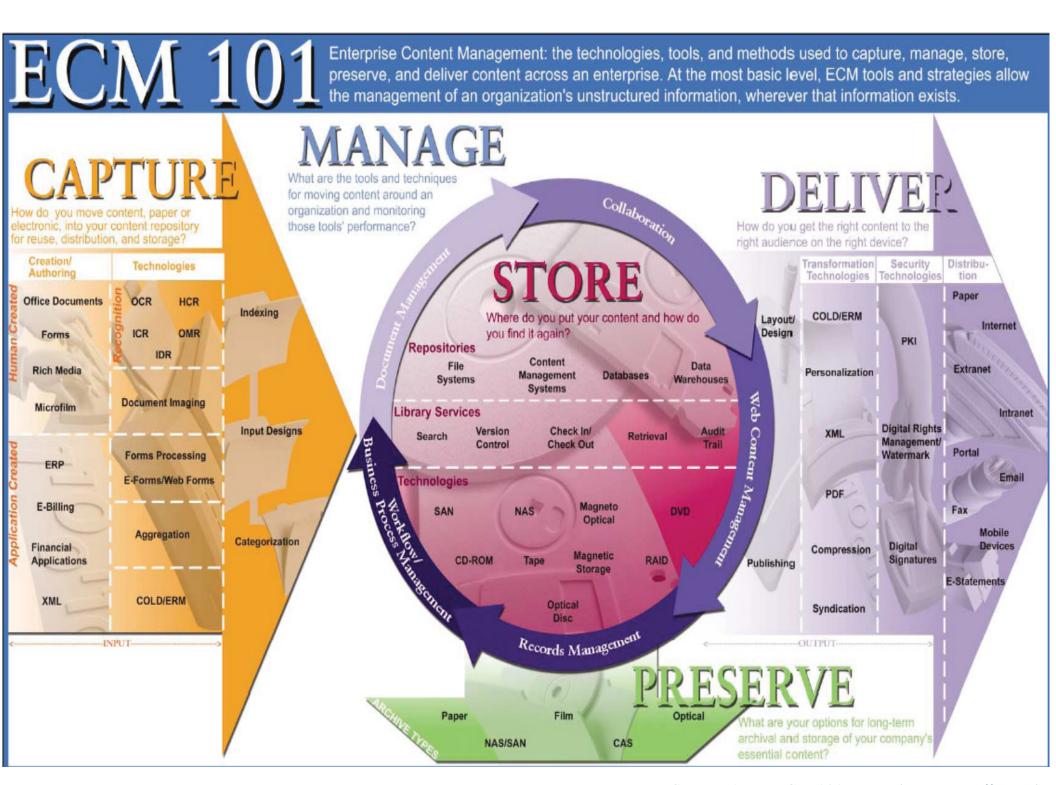
- Manage the risks associated with the existence of or lack of evidence of organizational activity during litigation, audit or investigation
- 6. Support the administration, integration and development of the organization's I.T. infrastructure by establishing sound information practices, procedures and tools that are technology and system independent
- 7. Provide business continuity in the event of a disaster
- 8. Maintain and promote organizational memory and identity

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E-Records management hits the mainstream...

- 1. 'Compliance'
- 2. Growth and amalgamation of the Enterprise Content Management (ECM) Industry



Source: AIIM ECM 101 Poster (see: www.aiim.org)

Enterprise Content Management (ECM): Technologies & Applications

- scanning and imaging
- forms management
- document management
- web-content management
- email archiving
- workflow and business process management
- records management

- collaboration tools
- compression and encryption
- digital signature systems
- data warehousing
- backup and archiving systems
- storage platform systems
- storage media solutions

Records Management and ECM

- ❖ Is there a difference between ECM definition of records management and ISO 15489 definition?
- ❖ Is a 'record' the same as 'content'?

❖ Is the ECM definition of 'preserve' the same as an archivist's definition of 'preserve'?

E-Records Infrastructure

- Legal and policy framework
- Records Management resources and training
- Records Management tools and procedures
 - Classification schemes and retention schedules
 - Access and security policies
- Information and Communications Technology (ICT) standards
- ECM/E-Record products and technologies
- Records Management awareness and ownership

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AIIM/ARMA E-Records Survey 2004

2200	respondents from business and government
93%	believe the process by which their electronic records are managed will be important in future litigation
47%	of the organizations have not scheduled their electronic records
59%	of the organizations do not have any formal e-mail retention policy
62%	are either "not at all confident" or only "slightly confident" that their organization could demonstrate that its electronic records were accurate, reliable and trustworthy over the long term

AIIM/ARMA E-Records Survey 2004

- The expertise required to successfully manage electronic records exists in three professional areas – legal, IS/IT and records management
- These often operate as "silos" and do not communicate effectively with each other or with the records creators/users in the business areas
- The result is that most organizations have significant problems in how they manage their electronic records.

E-Record Trends & Issues

- User buy-in: declare & classify
- Email capture & archiving
- Is auto-classification the silver bullet?
- Bringing RM to the user: desktop, file system, email client
- Bringing RM to structured-data, enterprise information systems

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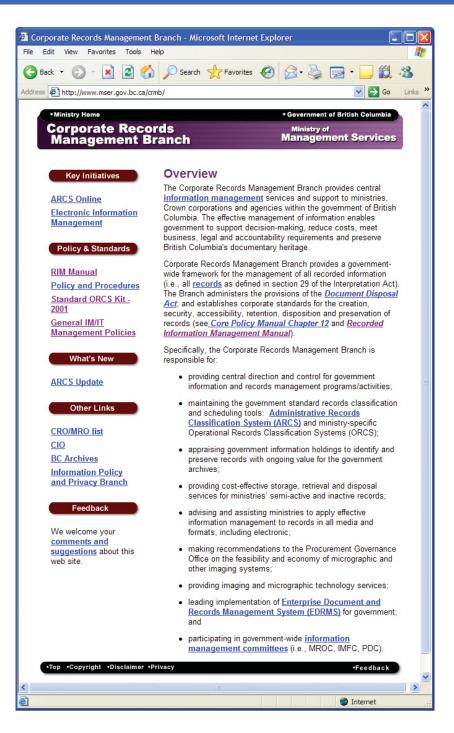
www.arma.org/erecords



www.edocmagazine.com



www.mser.gov.bc.ca/crmb



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- **Q&A**

1:45-2pm Coffee Break

- The BC E-Records Situation
- BC EDRM System Demonstration
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 - 2:45-3pm Coffee Break
- Digital Preservation Primer
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Digital Preservation Primer

- 1. The Digital Preservation Problem
- 2. Digital Preservation Solutions
- 3. Digital Preservation Initiatives
- 4. Online Resources

Digital information will never survive by accident

A serious gap exists between:

- 1. the volume and variety of digital information that is being created, and
- the mistaken assumption that these electronic records and digital assets will automatically be managed and preserved over time

Many e-records are needed long-term

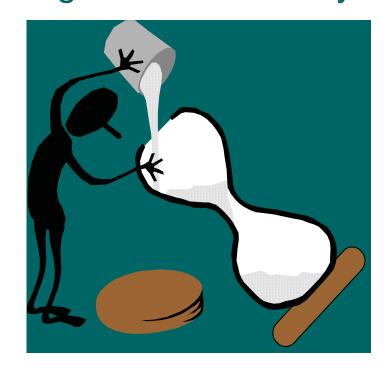
Beyond the lifespan of the current system

Information/records are needed long-term for a variety of

reasons, including:

Operational value

- Auditing
- Legal and regulatory compliance
- Historical value



When dealing with digital information, how *long* is '*long-term*'?

"A period of time which is <u>long enough to be concerned</u> <u>about the impacts of changing technologies</u>, including support for new media and data formats, and with a changing user community, on the information being held in a repository. This period extends into the indefinite future."

❖ ISO-STD 14721: Open Archival Information System

The Digital Preservation Problem

1. Technology obsolescence and incompatibility





system software



application software



data formats



storage media



storage hardware devices

The Digital Preservation Problem

- Physical instability and deterioration of digital storage media
 - Magnetic hard disk
 - Magnetic tape
 - Optical (CD/DVD)
 - Flash/Solid State
 - Holographic
- no digital media is permanent (compare to durability of paper or clay tablets)

The Digital Preservation Problem

- 3. Lack of adequate metadata
 - failure to locate specific information due to lack of descriptive information
 - inability to render and read the information due to lack of technical information
 - inability to attribute meaning or value to the information due to the lack of contextual information
 - inability to verify authenticity of information

Beware the Digital Dark Ages!

- Ongoing, active management and strategic planning is required
 - Accountability, responsibility, resources
- Organizations will lose critical and valuable digital information if they fail to plan ahead

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Technology alone will not solve the digital preservation problem

- Storage Media and Storage Management technologies
- Enterprise Content Management industry
- Application-software 'archiving' functionality

Open-Source Solutions

- Storage Resource Broker (<u>www.npaci.edu/DICE/SRB/</u>)
- Dspace (<u>www.dspace.org</u>)
- Thore (hul.harvard.edu/jhove/)
- i-TOR (www.i-tor.org/en/)
- KnowledgeTree (kt-dms.sourceforge.net/)
- Heritrix (<u>crawler.archive.org/</u>)
- Xena (xena.sourceforge.net/)

Open-Source Solutions

- Open-source solutions are relatively immature
- Open-source does not necessarily mean free:
 - Open-source has hidden implementation and maintenance costs
- Open-source solutions will increasingly be supported by private sector vendors
- Open-source does not mean open-standard compliance

Both vendor and open-source solutions must support:

- 1. Open technology and interoperability standards
 - WebDAV
 - **❖** JSR170
 - * XML
 - SOAP
 - ❖ SMI-S
 - **&** Etc.

Both vendor and open-source solutions must support:

2. Open file formats

- ❖ PDF/Archival (ISO 19005-1)
- ❖ PNG, TIFF, JPEG2000
- ❖ WAV or MPEG-1 layer 3 (MP3)
- ❖ MPEG2
- **&** Etc.

Both vendor and open-source solutions must support:

- 3. Open metadata schemas and management tools
 - Dublin Core Metadata Initiative
 - Metadata Encoding and Transmission Standard (METS)
 - Preservation Metadata: Implementation Strategies (PREMIS)
 - NISO Z39.87 Technical Metadata for Still Images
 - Archival Standards for Description (ISAD(G), RAD)
 - ❖ ISO standard 23081 Metadata for Records
- Would you liked that Wrapped, Linked or Embedded?
 - Adobe Extensible Metadata Platform (XMP)

Beyond Vendors and Technology

- Vendor and/or technology specific solutions are susceptible to the cycles and volatility of the IT industry
 - digital preservation solutions must provide permanence and consistency
- Business, user and compliance requirements will evolve over time
 - These must be mapped to the evolving technology layer:
 - requirements management, enterprise architecture
 - These moving targets must be managed

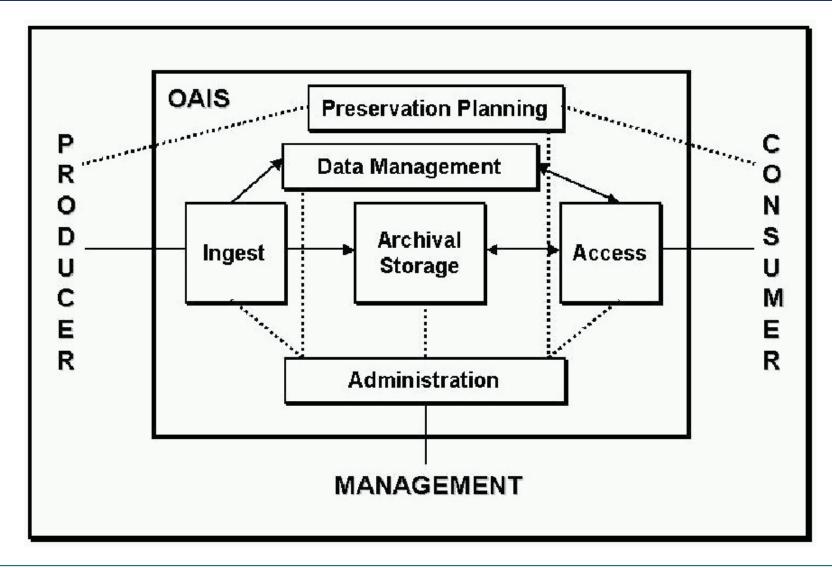
Beyond Vendors and Technology

- no single vendor and/or technology currently provides comprehensive solutions which fully address all of the preservation problem areas across the technological layers
- vendors and technology cannot address critical organizational issues such as:
 - ownership, responsibilities, regulatory environment, policies, procedures, capacity, resources, funding, collaboration

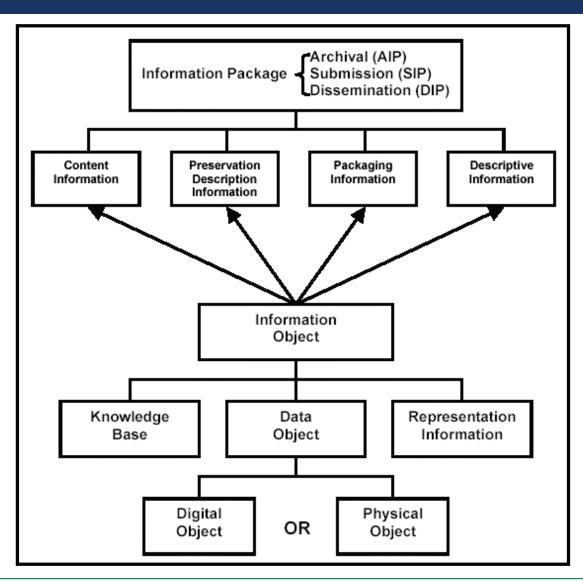
Reference Model for an Open Archival Information System (OAIS)

- international ISO standard 14721 (January 2002)
- comprehensive logical model describing all of the functions of a digital archives
- * archival information system: "an organization of people and systems that has accepted the responsibility to preserve information and make it available for a Designated Community."
- Does not specify technologies or archiving techniques

OAIS Functional Model



OAIS Information Model



Digital Preservation Technical Strategies

- System life support maintain legacy data and legacy software/hardware indefinitely
- Emulation maintain legacy data and access with new software/hardware that emulates the original application environment
- Migration Stage 1 migrate all data to new operational system
 - Maintain archival information indefinitely in the 'live system'
- Migration Stage 2 migrate data/information requiring long-term preservation to open archive formats and into purpose-built digital archives

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Noteworthy Institutional Projects

- United States National Archives and Records Service (NARA)
 - Electronic Records Archive (ERA) project
- United Kingdom National Archives
 - Digital Archives
 - Central Government Websites Archive
 - PRONOM database
- Public Records Office of Victoria (Australia)
 - VERS Digital Archive
- Washington State Archives
 - Digital Archives

Noteworthy Collaborations

- U.S. National Digital Information and Infrastructure Preservation Program (NDIIPP)
 - www.digitalpreservation.org
- U.K. Digital Preservation Coalition (DPC)
 - www.dpconline.org
- International Internet Preservation Consortium (NIPC)
 - netpreserve.org
- InterPARES Project
 - www.interpares.org

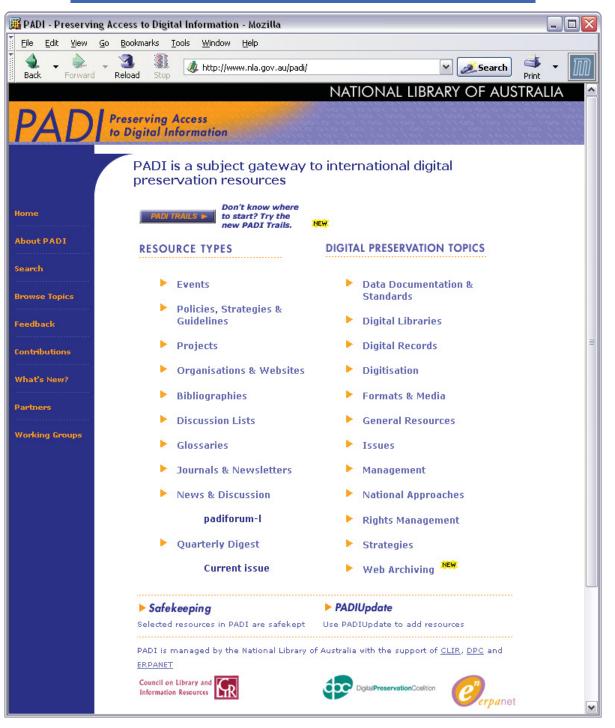
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www.library.cornell.edu/iris/tutorial/dpm



www.nla.gov.au/padi



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