

Digital Preservation Management

Cornell University Library have developed action planning guidelines for a digital preservation program including sample documents and case studies. This information was presented at the [Digital Preservation Management](#) workshop hosted by APSR in October 2007.

Recommended resources for repository managers from the [Digital Preservation Management](#) workshop:

- [Digital Preservation Management Tutorial](#). This provides an excellent introduction to the OAIS reference model for the management of repositories.
- [Trusted Digital Repositories: Attributes and Responsibilities](#)
- [Reference Model for an Open Archival Information System \(OAIS\)](#). OAIS has been approved as an ISO standard in support of long term preservation of digital information. See [ISO Archiving Standards Overview](#). There is also a 2006 JISC [evaluation of OAIS as a reference model for repositories](#).

It is hoped that the Digital Preservation Management Workshop will be held again in Australia in the future. Any workshop related activities and events will be listed on their [website](#). A brief summary of some of the important information is included here for reference by Australian repository managers who have not yet had access to this kind of training.

Key Issues

Key issues repository managers need to be aware of when considering digital preservation management include:

- developing checklists for repository certification and repository audit (see: [Trustworthy Repositories Audit & Certification \(TRAC\): Criteria and Checklist](#))
- developing an organizational framework to identify, develop and disseminate policies and procedures relating to the repository. This would include:
 - policy framework statement which defines the level of organizational responsibility and commitment to the repository (covered in the [DPM Tutorial](#)). See also the [National Library of Australia staffpaper report and bibliography](#)
 - developing detailed lists of policy and procedures
- policies and procedures will normally include statements of
 - roles and responsibilities
 - digital assets

- digital preservation strategies
- technological infrastructure
- developing documentation to outline short term plans, actions and costs. Typically a 3 or 5 year plan should be in place. See the [Strategy Plan 2001-2003 in Policy and Strategy Document of National Library of Wales](#)

Digital Preservation Standards: OAIS Reference Model

OAIS is an ISO standard frequently cited as a basis for digital preservation research and development projects. Even digital repositories that were not designed using OAIS can be mapped to the OAIS reference model. OAIS provides a common language for sharing information about digital programs.

Documentation available:

- [Reference Model for an Open Archival Information System \(OAIS\)](#)
- [The Open Archival Information System Reference Model: Introductory Guide](#)
- [OAIS-AHDS Mappings \(Overview of AHDS digital archive using OAIS reference model\)](#)
- [See appendix 5 \(Compliance Self-Testing\) in Assessment of UKDA and TNA Compliance with OAIS and METS Standards](#)

Information Packages

Information Package is a fundamental concept in the OAIS reference model. An Information Package is a combination of the data to be preserved (the data object) and "representational information" that is needed to interpret and use that data appropriately.

The OAIS model deals with 3 information package types:

- Submission Information Package (SIP) refers to what is ingested into the repository
- Archival Information Package (AIP) is what the SIP becomes once ingested into the repository (it consists of the content information and its related preservation description information)
- Dissemination Information Package (DIP), which is the information package taken from one or more AIPs to answer a consumer request on the repository.

There is currently no standard for information packages. [PREMIS](#) is an important one but requires community and local support before it can become a standard. Other standards include:

- [METS](#)

- [Using XML, XSLT, and CSS in a Digital Library](#)
- [Archival Information Package \(AIP\) Design Study](#)
- [PRONOM](#)

Functional Entities

It is the responsibility of the Repository Manager to ensure that agreement is reached and documented on all of the functional entities available to the repository. These agreements will be crucial to the data management and preservation processes adopted by your organization. Again, further information can be sourced from the [DPM Tutorial](#) and dealt with in detail at a Digital Preservation Management Workshop.

The key functional entities which should be addressed are:

- **Submission control.** This means clarifying what formats and metadata will be acceptable and necessary for deposit, what processes will be used for deposit and any validation processes required on the data after submission. These are all crucial data management decisions which must be formalized, documented and clearly made available to all users of the repository. See Annex A of [Reference Model for an Open Archival Information System \(OAIS\)](#)
- **Common services.** These include operating system services, network services and security services. See:
 - [Information Security Management Audit Check List](#)
 - [NIST: Automated Security Self-Evaluation Tool](#)
- **Ingest.** This covers the acceptance of submission information packages, performing quality assurance on the data, generating an archival information package that complies with formatting and documentation standards and extracting and managing descriptive information to coordinate updates and data management. See:
 - [ERPANET Ingest Strategy](#)
 - [Tufts-Yale Fedora Ingest Guide](#)
- **Archival Storage.** This ensures that content is recorded on appropriate media according to storage management policies, provides the capability to refresh or reproduce the media over time, performs error checking, ensures disaster recovery and provides data as requested. See:
 - [PREMIS](#)
 - [LOCKSS \(Lots of Copies Keeps Stuff Safe\)](#)
 - [Disaster Prevention, Preparedness and Recovery Resources](#)
- **Data Management.** This maintains the integrity of descriptive and system information, performs queries on the database, generates reports and receives database updates.
- **Administration.** This relates to system configuration, physical access control, establishing standards and policies, auditing submissions and providing customer service. See:
 - [Digital Library Standards and Practices](#)

- [National Archives of Australia: An Approach to the Preservation of Digital Records](#)
- **Preservation Planning.** This includes monitoring user groups, emerging technologies, standards and platforms. The objective is to protect against obsolescence, develop preservation strategies and migration plans as required. See:
 - [DPC/PADI What's new in digital preservation](#)
 - [Digital Preservation Testbed](#)
 - [JISC: JORUM Preservation Watch Report](#)
- **Access.** Access is all about supporting users of the repository to identify, locate and retrieve the data they require. See:
 - [FCLA Digital Archive \(FDA\) Policy Guide](#)

Resources Framework

The Digital Preservation Management Workshop also assists Repository Managers in identifying and managing the costs associated with implementing and maintaining a digital repository. These are identified in the following areas:

- Startup costs
- Ongoing costs
- Contingency costs
- Capital costs
- Direct operating expenses
- Indirect costs (overheads)

For those unable to attend or access the DPM Workshop material, the following references can assist with calculating the costs associated with implementing and managing a repository:

- [CEDARS: Cost elements of digital preservation](#)
- [CTG Gateways Cost Estimation Tool](#) and [Worksheet](#)
- [Economic Factors of Managing Digital Content and Establishing Digital Libraries](#)
- [MIT DSpace Cost Model](#)
- [National Library New Zealand: Digital Library Development Review](#)
- [Counting the Costs of Digital Preservation: Is Repository Storage Affordable?](#)
- [Costs and business modelling](#)
- [Digital Archive Costs: Facts and Fallacies](#)
- [Cost orientation tool](#)

- [The Cost to Preserve Authentic Electronic Records into Perpetuity: Comparing Costs Across Cost Models and Cost Frameworks](#)
- [Towards Developing a Framework of Cost Elements for Preserving Authentic Electronic Records into Perpetuity](#)

Calculating Costs

A method suggested for calculating costs in the Digital Preservation Management Workshop is discussed in [Identifying and Securing the Requisite Resources](#)

“RUBRIC Toolkit: Action Plans for Digital Preservation Management” produced December 2007



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