Digital Preservation Plan Framework for Cultural Heritage Institutions

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On this page

Introduction

A digital preservation plan is a core document for any digital preservation activity. It contains an action plan that describes actionable steps taken within an institution to preserve digital resources and it documents how the action plan was chosen. Unlike a digital preservation policy, which provides high-level guidance, a digital preservation plan (and its resulting action plan) describes an actual workflow, and it makes reference to specific technology that will be used in the workflow. Because of this, the digital preservation plan is produced after drafting the institution's digital preservation policy.

The digital preservation plan framework is intended to ensure key considerations and steps are taken into account, but it is acknowledged that needs will vary according to each institutions' circumstances. Please add or modify components of this framework, as required.

Discussion of format proposed in this framework

The format recommended in this framework is loosely based on a proposal from Becker et al. (2009) to use "objective trees" to formally document and quantify metrics for the selection of a digital preservation action plan. While the Becker framework is consistent with creating a trusted digital repository, it is not practical for smaller cultural heritage institutions. The framework proposed in this document is suitable for cultural heritage institutions of all sizes, although medium- and large-sized institutions may wish to consult the Becker framework as well before choosing a format for their own digital preservation plan.

External standards, best practices and recommendations

The following external standards, best practices and recommendations should be considered throughout the development of each section of the digital preservation plan.

Two documents are of particular importance: *Trusted Digital Repositories: Attributes and Responsibilities* (PDF format) by the Research Libraries Group and *The Open Archival Information System (OAIS) Reference Model: Introductory Guide* by the Digital Preservation Coalition and Brian Lavoie. The first document focuses on the environment within the institution that is responsible for maintaining the repository. By contrast, the second focuses on standard functions within an archive. Both of these documents are considered in the *Digital Preservation Policy Framework for Museums*

and Galleries, but awareness of them should be maintained throughout the development of the action plan.

Further to this, the chosen action plan will need to consider best practices and recommendations such as the _Creator Guidelines_ (PDF format) and the _Preserver Guidelines_ (PDF format) produced by the InterPARES 2 Project.

Your institution may further identify best practices or recommendations from your community. An excellent venue for sharing them is the Canmuse-l listserv (send a subscription request to pch.rcip-chin.pch@canada.ca).

Digital preservation plan components

The following items are components of a digital preservation plan.

Identification

This component (included on the cover page) outlines, at a minimum, the name of the plan, the date that the plan was most recently modified and a list of previously approved versions (if any) and the dates for which they were active.

Status and triggers

This component, which may also be found on the cover page, includes the status of the plan. It indicates, for instance, if the plan is in development, has been approved or is no longer active.

This component may also contain the names of those responsible for creating the plan and a signature field for approval of the action plan contained therein. If the plan was created as a result of a new event (a trigger), such as a new type of content in the institution, a new collections management system or a similar reason, this should be listed here as well.

Reference to digital preservation policy

Your digital preservation policy answers the question: "What must be done?" This is often referred to as a business requirement, and it must be addressed before you proceed to answering the question of how something will be done, which is the point of a digital preservation plan.

Several considerations and constraints (including legal obligations) already considered in the digital preservation policy need not be restated in the digital preservation plan. However, constraints on how something will be done (a topic for the action plan) are considered in the next section.

For the sake of brevity, it is sufficient in this component to make reference to the policy and, in a few sentences, to summarize its key goals and objectives.

Summary of environment and constraints

This section outlines constraints on how the preservation policy might be carried out given the nature of your institution's environment and the resources at your disposal for this project. A number of detailed considerations should be summarized under the following categories.

Organizational structure

This component requires an understanding of current responsibilities and accountabilities within the institution; in other words, who is accountable to whom and for what activities. The resulting action plan will have to be sensitive to the existing structure. Otherwise, you will need to obtain consent to change it.

Current practices and obligations

This component includes a description of any current institutional procedures, workflows or references to contracts and agreements that may affect a digital preservation plan. Note that contracts can be a constraint on both what must be done and how something will be done. Thus, both questions may be considered in the preservation policy and the preservation plan.

Organizational readiness

This component refers to the institution's awareness, attitudes and expectations where digital preservation is concerned.

Financial constraints

This component defines the limits of an action plan, both in what can be procured (technology, services, etc.) during the start-up of a digital preservation project and in what can be sustainably afforded in the long term.

It should be noted (particularly in light of financial, human and technological considerations) that the digital preservation plan can be used not only to choose a course of action that is feasible within existing constraints, but also to advocate for further resources should a more desirable course of action be within reach of the institution's (or governing body's) budget.

Human resources

The subject of human resources is also considered in the digital preservation policy. The cost of training should be taken into account, since it will go hand-in-hand with the type of technology chosen

for the archival process. Ready-made off-the-shelf solutions may have limitations, but they are often more widely used. Thus, it is easier to find support and training for them.

Technical constraints

This component is primarily about the technology currently in use. Future technology should be considered in the various courses of action to be considered.

Description of the collection

An institution's collection is another environmental constraint; however, it is given its own section due to its importance. Reference to the inventory information collected using the [Digital preservation inventory template for cultural heritage institutions](#) will capture much of what is required for this section. If you have not already used this template, you should do so at this point.

In this section, you should also list examples of digital resources from each digital asset group identified in the inventory template. These resources will be used to evaluate potential technologies and workflows for the action plan.

Relevant characteristics of digital objects

This section summarizes all the relevant aspects of objects in each digital resource group that require preservation. It includes references to the appearance of the objects, such as the colour depth and resolution of images and information about fonts. For non-static objects (such as a web page with forms or similar interactive components), it may also include relevant characteristics of the object's behaviour.

Business requirements

This section outlines a functionality that must exist in the chosen solution in order to meet the policy's goal (an overarching guideline of what is trying to be achieved) and objectives (measurable steps towards achieving a goal).

User requirements

This section outlines the needs of those who will use the proposed solution in the application of their work. Typically, this will include the needs of content creators (those who provide content to be preserved), content preservers (such as digital archivists) and content users (those making requests for content).

While both the wants and needs of users can be taken into account, it is important at this stage to distinguish the two.

Consideration of potential action plans

In this section, potential solutions are considered. Where possible, technology is tested using sample records from each group of digital resources (a multipart solution may be required if resources are sufficiently different). When it is not possible to test software, this should be clearly stated along with the method that was used in lieu of a hands-on test.

The following components are repeated for each possible solution:

- proposed workflow (including diagrams for ingestion, ongoing management and access),
- proposed technology (hardware and software),
- required human resources,
- summary of costs (provide breakdowns for the implementation of the system, per unit cost for ingestion, annual per unit cost for management of a resource and per unit cost to access a resource),
- results of testing (or assessment for technology that was not evaluated) and
- discussion of proposed solution.

This last component should include a detailed analysis of the proposed option. This includes, at a minimum, a discussion of costs, benefits, impacts, risks and opportunities. The discussion should also include the degree to which the proposed solution meets the requirements and identifies constraints. Address any areas where the solution fails to meet one or more of the requirements.

Preservation action plan

This section should identify the chosen action plan, provide a rationale for choosing it and present an elaboration of the plan. It should also identify any future events that might trigger a review of the plan.

Identification and justification of chosen action plan

This component lists the chosen plan and the reasons for choosing it over the other options are clearly identified.

In addition to the information already included for this option under the section Consideration of potential action plans, the following items should be added.

Roles and responsibilities

This component indicates the major responsibilities of each person tasked with implementing the project and of those who are responsible for maintaining the preserved resources. Include the roles of content creators as well.

Work breakdown structure

This component outlines the major tasks required to complete the plan, who is responsible for carrying out each task and the respective deadlines. Milestones and deliverables are also included. Separate work breakdown structures should be created for the implementation of the system and for each major component of the open archival information system (OAIS) reference model (preservation planning, ingest, archival storage, data management, access and administration).

Detailed discussion of how resources are ingested, managed and accessed

This component should include a discussion on the required technical characteristics of digital resources (such as what metadata is included with a new digital resource), processes (such as how metadata is to be provided) and preservation criteria (such as an outline of what is preserved and what is not). Discuss also what technology will be used to ensure that the resource is accessible in the long-term (such as refreshing, migration, replication, emulation or encapsulation).

Detailed costs and funding sources

This component should include a breakdown of all costs for implementation as well as a separate budget (with funding sources) for ongoing maintenance of the preserved resources.

Triggers for action plan revision

This component outlines potential events that may merit a revision of the chosen action plan, such as a change to the budget for long-term preservation costs or changes to technology.

Glossary

emulation
    The provision of functionality in one computing system that is equivalent to one found in another (often obsolete) system. This could be done at the hardware level or the software level. An example of emulation could be software that allows a modern Windows operation system to run applications designed for a Commodore computer from the 1980s.

encapsulation
    The inclusion of additional information around data, which allows a system to access that data without any prior knowledge of the data's format. This typically involves a file of a known format (known as a "wrapper") that contains data in a format that may not be known to the accessing application in advance, as well as instructions for accessing this data.

ingestion
    The process of transferring data into an archive or repository for long-term preservation.

migration
    The transferring of data to newer system environments. This could include new file formats, new operating systems or new physical carriers (media).

refreshing
> The transfer of data onto a newer version of the same storage media (that is, the same type of physical carrier) so that degradation of the older media does not pose a risk of data loss

replication
> The creation of copies of data on one or more systems.

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