The National Archives

**Digital Preservation Policies:
Guidance for archives**

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1. Introduction

1.1 What is the purpose of this guidance?

This guide explains the key characteristics of a digital preservation policy. It will discuss why there is a need for a policy and how it supports digital preservation. The intention is that organisations can use this guidance to improve the governance of digital preservation through the development of a digital preservation policy.

1.2 Who is this guidance for?

The primary audience for this guidance is publicly funded archives addressed in "Archives for the 21st Century"[1] looking to develop and support digital preservation activities. Other archives may also find this guidance useful in developing a policy for digital preservation.

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[1] Archives for the 21st Century, Government Policy on archives, 2009,

2.   Why do you need a Digital Preservation Policy?

Organisations are increasingly creating, using and storing records only in digital formats. Unlike analogue records, the digital records benefit significantly from assessment as early as possible for any preservation requirements. This presents a significant challenge for archives who will need to be able to identify, collect and manage the content of these records to ensure it remains authentic and accessible. The digital preservation policy provides a mandate under which an archive can oversee these processes and manage digital preservation.

2.1   Purpose of a Digital Preservation Policy

The digital preservation policy has two overarching purposes. The first is to define why an organisation is doing digital preservation by explaining:

- The purpose and drivers for preserving digital records.

- How digital preservation enables the archive to achieve its core objectives (e.g. as a memory institution).

- How digital preservation aligns with any parent organisation's broader strategic goals (e.g. an archive within a local authority).

- The benefits of long-term access to data for re-use and the economic, reputational and cultural risks of failing to address this through digital preservation.

These are essential as they ensure digital preservation is understood by the organisation and to others likely to be involved.

The policy also acts as the authority for those undertaking digital preservation in terms of:

- Articulating roles and responsibilities both within the organisation and any external parties (e.g. contractors, depositors / donors of records).

- Defining a succinct set of success criteria that can measured against[2].

- Define the coverage of the digital preservation activities including the broad categories of records.

- Determine when and how an archive can appraise digital records that will be presented to them for archiving for both historical value and their technological characteristics.

- Identifying the presence (and owners) of a digital preservation strategy.

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[2] Annex 1 provides an overview of the types of success criteria required when developing a usable digital preservation policy.

- Indicate any standards which are to be adhered to in the digital preservation strategy.

These are essential in giving the archive the authority to carry out digital preservation within an agreed framework without having to justify requests for resource / services from others where already identified in the policy. This also provides the organisation with a clear line of responsibilities and enables any issues or conflicts to be resolved more directly and not risk loss.

2.2   Aspirational Digital Preservation Policies

For organisations not yet doing digital preservation an aspirational policy can be a very useful tool as a proposed commitment to preserving digital records. It does have limitations however when an organisation wants to begin doing digital preservation.

When an organisation begins to actively collect and preserve digital records the policy will need to be updated including explicit roles, responsibilities and actions. This will then inform the development of the strategy. Ideally both the policy and a strategy should be in place prior to beginning digital preservation.

> **Can I adapt another organisation's digital preservation policy?**
>
> It is likely that organisations from the same sector will share similar requirements for digital preservation and it is reasonable to look at what other organisations have produced when developing a policy.
>
> There is little value in copying another organisation's policy as it may not reflect your own operating environment, relationships with service providers and depositors / donors. If an organisation has not gone through the process developing a digital preservation policy it cannot guarantee it will meet their needs, relevant stakeholders may not have been engaged or that the broader approach to digital preservation is sustainable as defined in the copied policy.

3.   Audience of a Digital Preservation Policy

3.1   Audience of a Digital Preservation Policy

A digital preservation policy must reflect and represent all parties involved in digital preservation why they are involved and their respective responsibilities. It should be written with the intention of informing everyone who may have involvement with digital preservation (directly or indirectly) what is being done and why.

Given the potential wider audience of a policy care should be taken to avoid overly technical language as the wording must comprehensible to anyone engaging with the digital preservation activities.

Visibility of the policy is important and it is recommended that a finalised policy be published in an accessible format online for public users and either on an intranet or central location for users within the organisation.

3.2   Coverage of a Digital Preservation Policy

Potentially an archive may be offered digital records from a wide range of sources. For this reason the policy must identify its coverage to ensure that it focuses on digital records relevant to the acquisition and collections policy.   This will need to include statements about:

- The types of digital records to be considered for preservation (including content, structure and format).

- The institutions / organisations that the records will typically be collected from.

- The locations of these records (in terms of storage and systems).

If these are clearly articulated the process for locating and identifying digital records for preservation can be prioritised to ensure of collection and maintenance of digital records considered in scope by the policy.

A defined coverage also allows an archive to consider rejecting records that fall out of scope if collection and preservation of them is too difficult or beyond their capabilities for preservation. Alternatives might be to preserve only some of their characteristics or propose their deposit in another archive

4.   Relationship with Digital Preservation Strategy

4.1   What is a digital preservation strategy?

A digital preservation strategy is the broad approach adopted by an organisation to ensure that the content of digital records remains in a usable form over time[3]. The strategy works by identifying specific triggers which will determine when digital preservation activities may take place. For example:

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[3] Christoph Becker *et al* explain this issue in more detail in a useful paper accessible from:
http://www.ifs.tuwien.ac.at/~becker/pubs/becker-ijdl2009.pdf

- Migration: File formats close to obsolescence are migrated to a more sustainable format
- Ingest: When records are taken in their file formats under goes a defined normalisation process to present the record content in a more sustainable format.

Both the policy and the strategy are essential to ensure there is a verifiable and trusted means of preserving the integrity of digital records. Depending on the scale and complexity of digital preservation small organisations may include parts of a strategy within the policy. If this is the case care is needed to ensure changes to the strategy will not require a revision of the policy.

The digital preservation policy must identify a digital preservation strategy and its owner(s). This reinforces the strategy and the preservation activities it defines, whilst allowing the policy to remain independent and not have to be updated when a change is made.

The following table shows the different focus of both a policy and a strategy in relation to delivering digital preservation. These are examples and not a full itinerary of what either a policy or strategy may include.

Function	Policy	Strategy
Ownership for digital preservation	√	
Strategic Alignment of digital preservation	√	
Coverage of digital preservation	√	
Roles and Responsibilities	√	
Relationship to other policies	√	
Relationship to other documentation	√	
Type of storage for digital records		√
Accepted / Preferred formats		√
Triggers for migration		√
Types of migration		√
Triggers for normalisation		√
Types of normalisation		√

5.   Relationships with other documentation

The policy will be underpinned by supporting documentation some of which may already exist that defines how certain processes and business relationships will be managed .

The following table provides examples of supporting documentation and their relationship to the digital preservation policy.

Documentation	Relationship
List of accepted / preferred file formats	This is a list of the software file formats (e.g. pdf-A, .doc etc) that the archive will accept. This should not be a fixed list but reviewed periodically and updated to reflect technological changes and the organisation's requirements for preserving new file formats.
National / International Standards	The policy should identify any relevant national or international standards which the strategy will work to as means of providing an authoritative approach to preservation activities.
Legislation	Depending on the content of the records and the organisation(s) they derive from the policy may need to identify specific legislation that defines how and when the records may be accessed / re-used, e.g. Data Protection Act 1998, Copyright, Designs and Patents Act 1988.
Standard Operating Procedures (SOPs)	SOPs should provide instructions on procedures for undertaking digital preservation tasks in a standard way to protect the integrity of the digital records. These SOPs establish a benchmark for performance that current performance can be measured against.
Service Level Agreements (SLAs)	SLAs for digital preservation should designate the level and extent of support provided to manage part or all a process within the digital preservation strategy (e.g. Support from an ICT provider to manage the servers used to store the digital records).
Systems Development	Development of new systems or software may result in new types of digital records being produced. The digital preservation policy should provide a mandate for early involvement by those responsible for digital preservation. The earlier an archive can assess digital records (e.g. at creation) the better they will be able to prepare and understand how the digital records should best be preserved.
Formal Contracts	The existence of formal contracts where appropriate reinforces the accountability of service providers and can be referenced by the digital preservation policy as evidence of agreed partnerships.

6. Relationship to other policies

The digital preservation policy will also need to identify what other policies must be taken into consideration when implementing and carrying out digital preservation activities. The nature of these relationships will need to be articulated indicating where other policies must take precedence.

This table lists the key policies that the organisation may already have established which will have an impact on digital preservation, and consequently must be referenced by the digital preservation policy.

Policy	Relationship
List of accepted / preferred file formats	This is a list of the software file formats (e.g. pdf-A, .doc etc) that the archive will accept digital records in. This will not be a fixed list as it should be reviewed periodically and updated to reflect technological changes and the organisation's requirements.
Acquisition / collection policy	An archive must still decide if digital records are of archival value and fall within its collecting remit. These decisions should be determined by the acquisition / collection policy to ensure that the records are of interest to the archive and its users.
Analogue Preservation Policy	Highlighting a commitment to providing proper preservation for analogue records reinforces the need for preservation across the whole archival collection irrespective of format.
Records Management Policy	A records management policy clarifies the means by which the organisation manages the aggregation and disposition of its own digital records. These principles are all relevant and may be used to manage digital records that are stored in organised aggregations.
Digital Continuity and Information Assurance Policies	A digital continuity policy defines how information should be managed to ensure it remains usable, complete and available to the organisation. It is sensible to use the same processes for archived digital records to give consistent management of all IT systems owned by an organisation.
Freedom of Information / Data Protection policies	Both the Freedom of Information Act 2000 and the Data Protection Act 1998 may have an impact on how digital preservation is managed / delivered. The digital preservation policy must identify the organisations policies for dealing with both pieces of legislation as the authority on responding to information requests.
Information security policy	In order to protect the organisation's information assets there will be specific requirements laid out in an information security policy. These rules must be reflected in the digital preservation policy to guard against breaches in the organisation's information security.

Policy	Relationship
Copyright Policy	At present under UK Copyright Law there is no legal right to create copies of records except for certain restricted purposes[4]. This will need to be taken into consideration for records where the archive is not the copyright owner.
Standard Operating Procedures (SOP)	SOPs should provide instructions on procedures for undertaking digital preservation tasks in a standard way to protect the integrity of the digital records. These SOPs establish a benchmark for performance that can then be measured against current performance.
Service Level Agreements (SLAs)	SLAs for digital preservation should designate the level and extent of support provided to manage part or all of the processes within the digital preservation strategy (e.g. Support from an ICT provider to manage the servers used to store the digital records).
Systems Development	Development of new systems or software may result in new types of digital records being produced. The digital preservation policy should provide a mandate for early involvement by those responsible for digital preservation. The earlier an archive can assess digital records (i.e. at creation) the better they will be able to prepare and understand how the digital records should best be preserved.
Formal Contracts	The existence of formal contracts, where appropriate, reinforces the accountability of service providers and can be referenced by the digital preservation policy as evidence of agreed partnerships. This agreement should provide specific remedies for breach of agreed service levels.

6.1   Combined policies

Some organisations may decide that it is more practical to have a combined policy to reflect pre-existing joint activities or business units (e.g. the archive may already provide a records management service).

A combined policy is acceptable providing that digital preservation remains a visible part of it. The National Archives' Preservation Policy is a good example of combining both analogue and digital preservation. The key aspect is to give equal importance and visibility to both to ensure consistent management. Other possible combinations may include:

- Joint records management and digital preservation policy; designed to join up the creation, selection and preservation of digital records as a single managed process.

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[4] This is currently under review, details of the consultation can be found at http://www.ipo.gov.uk/pro-policy/consult/consult-closed/consult-closed-2009/consult-2009-gowers2.htm.

- Joint digital continuity and digital preservation policy; designed to ensure that all digital records are managed in the same way.

It is important to note that too many combinations, or joining of very different work in one policy could result in none of the functions being adequately supported in a policy document.

7. Roles and responsibilities

Defined roles and responsibilities are essential as they identify who should be involved in managing and preserving digital records across an organisation.

The policy has to identify who is responsible for digital preservation and the expectations placed upon them. If unrealistic expectations are placed on anyone involved there is a risk that the intended aim to preserve authentic digital records will fail. To avoid this all those who are intended to be involved should be consulted during the development of the policy. This will allow the organisation to assess whether they, or an intended partner, can realistically support digital preservation.

7.1 Ownership of digital preservation

To be effective the policy needs need to be "owned" by a senior role within the organisation. This gives digital preservation an effective champion at a level where strategic decisions could impact on the long term support for digital preservation.

7.2 Service Providers and Contractors

The organisation may need the assistance of others to carry out digital preservation activities. This relationship needs to be clearly identified and expected service levels formally agreed and documented to ensure the accountability of all parties.

It is important to note that where service providers are used, it is the commissioning organisation that remains responsible for the digital records at all times.

7.3 Depositors / Donors

Deposit / donators of digital records will need to ensure that records are submitted in a suitable condition for acceptance into the archive., the policy needs to state what the requirements are for the acceptance of deposits of digital records. This will include providing digital preservation documentation (e.g. a list of accepted / preferred file formats and minimum descriptive and technical metadata) and related documentation that covers the broader acquisition / collection questions (e.g. do the records meet the criteria of the archive's acquisition and collection policy).

The policy is also important as a means of explaining why depositors / donors may need to take action themselves prior to presenting the digital records to an archive.

8.   Differentiating Active and Passive preservation

The policy should also identify the extent to which it will use active or passive preservation in the ongoing support of digital preservation. Active preservation is any proactive action taken in the preservation of digital records (e.g. migration of records from at risk formats to a more stable format).

Passive preservation is any action that supports digital preservation but does not engage with the digital records directly (e.g. management and backing up of servers storing digital records). An organisation should already have a Digital Continuity and Information Assurance policy that would support such passive preservation to an extent.

The Principle of Reversibility

Archives may need to revert to an earlier version of a digital record(s) if a chosen migration path is unsuccessful. To do this a previous instance of a record will need to be retained.

For example, some may decide to revert to the bitstream that encoded the record at ingest instead of a later preservation copy. This application of the principle of reversibility allows the preservation activity to go back a step and try an alternative route for preserving the record without a cumulative loss of record characteristics

9.   Evaluating and monitoring the policy

The policy should also incorporate a requirement for a periodic review (not to exceed three years) of the policy to ensure it remains relevant to the organisation's digital preservation capability and broader business aims. This should form part of a broader monitoring process that identifies any weaknesses or required changes with the approach to digital preservation. During implementation the policy should be kept under constant review to ascertain its relevance and effectiveness.

10. Available Resources and Further Reading

10.1 Example Policies

The following are examples of policies adopted by a variety of organisations and provide a useful overview of the policies developed across different sectors. They can assist and inform the formulation of a new policy but each organisation's policy needs to reflect its specific digital preservation needs.

- British Library (2006) British Library Digital Preservation Strategy:
  http://www.bl.uk/aboutus/stratpolprog/ccare/introduction/digital/digpresstrat.pdf

- Parliamentary Archives Digital Preservation Policy:
  http://www.parliament.uk/documents/upload/digitalpreservationpolicy1.0.pdf

- Cornell University Library (2004) Cornell University Library Digital preservation policy framework:
  http://commondepository.library.cornell.edu/cul-dp-framework.pdf

- King's College London (2006) Managing Risk: a Model Business Preservation Strategy for Corporate Digital Assets:
  http://www.jisc.ac.uk/media/documents/programmes/preservation/kings_final_report2.pdf

- Hampshire County Council – A partly aspirational policy that illustrates how to tie digital preservation into the broader records management responsibilities of the whole County Council:
  http://www3.hants.gov.uk/archives/hro-policies/hro-digital-preservation-policy.htm

- National Library of Wales, Digital Preservation policy and strategy:
  http://www.llgc.org.uk/fileadmin/documents/pdf/digital_preservation_policy_and_strategy_S.pdf

- UK Data Archive Preservation Policy – large data archive with an example of a good policy where the contractor is providing a preservation service:
  http://www.data-archive.ac.uk/media/54776/ukda062-dps_preservationpolicy.pdf

- London Metropolitan Archives – An example of an interim or aspirational policy:
  http://www.history.ac.uk/gh/digprespol.pdf

10.2 Guidance on developing digital preservation policies

- Digital Preservation Policies Study; N Beagrie et al; 2008 – this is a report focused on policies developed by Higher Education institutions but is useful to anyone considering developing digital preservation:
  http://www.jisc.ac.uk/media/documents/programmes/preservation/jiscpolicy_p1finalreport.pdf

- A framework of principles for the development of policies, strategies and standards for the long-term preservation of digital records:
  http://www.interpares.org/display_file.cfm?doc=ip2(pub)policy_framework_document.pdf

10.3   Relevant Standards and Codes of Practice

There are a number of relevant standards that may help in developing a consistent approach to digital preservation.

- For organisations looking to develop an open archival system. Open archival information system Reference model ISO 14721:2003: http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=24683

- International Standard on Records Management ISO 15489:2001 http://www.iso.org/iso/catalogue_detail?csnumber=31908

- International Standard on Metadata for Records ISO 23081:2006 http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=40832

- Code of Practice on Records Management issued by the Lord Chancellor under section 46 of the Freedom of Information Act 2000: http://www.justice.gov.uk/guidance/docs/foi-section-46-code-of-practice.pdf

10.4   Other Guidance on developing digital preservation

There are a number of tools that may help assess and plan the approach to digital preservation.

- Digital Preservation Frequently Asked Questions: http://nationalarchives.gov.uk/information-management/projects-and-work/digital-preservation-faqs.htm

- The Digital Preservation Coalition:

  http://www.dpconline.org/

- Planning for digital preservation: A self-assessment tool. Bishoff, E and Rhodes, E (2007): http://nedcc.org/resources/digital/downloads/DigitalPreservationSelfAssessmentfinal.pdf

- Open Planets Foundation: http://www.openplanetsfoundation.org/about

10.5   Training

There are a number of specific training courses available including the following.

- JISC-funded Digital Preservation Training Programme: www.ulcc.ac.uk/dptp

- The Digital Curation Centre: 101 digital curation course: www.dcc.ac.uk

- The annual King's College London Digital Futures Workshop: www.kdcs.kcl.ac.uk/digifutures/

11. Annex 1

11.1 Key Success Criteria for a Digital Preservation Policy

The policy should be benchmarked against agreed success criteria to ensure that it is created with a clear means of measuring its effectiveness.

Irrespective of the success criteria used they must be realistic and achievable. If the criteria cannot be met there is a significant risk that the subsequent strategy for preserving digital records will be inadequate. This in turn will undermine the confidence that the records being preserved are still authentic.

11.2 Example Success Measures

The following list provides the key criteria that should be included within a policy:

- Articulate why digital preservation is important and the risks if it is not done.

- Identify a responsible senior management role to own and champion digital preservation.

- Identify who is responsible for the management and support of digital preservation – including required expertise.

- Provide a clear explanation of the agreed relationships between the archive and other business areas needed to support digital preservation.

- Identify the digital preservation strategy as the authority on preferred approach to digital preservation activities and what triggers drive them,

- Be accessible in language and publicly available.

This is not an exhaustive list and depending on the scope and anticipated scale of the work the policy may need to incorporate additional criteria for success.