

Digital Preservation Assessment

PEER ASSESSMENT



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INTRODUCTION

Digital Preservation Peer Assessment

The following assessment template provides questions to prompt staff at cultural heritage institutions to think critically about their digital preservation activities. The goal of the assessment is to help an institution document digital preservation successes, recognize areas that need further growth, and identify challenges that stand in the way of that growth. It can also help an institution prioritize next steps for improved long-term access to digital collections with a digital preservation plan.

This is framed as a peer assessment, rather than a self-assessment, to encourage institutions to work in pairs or groups to benchmark their program and progress. This model provides an outside perspective on the institution, guidance for improvement from colleagues, and a partner or cohort for accountability. A basic understanding of digital preservation will help in the assessment process, but the peer or peer group does not need to have experience in assessment or professional expertise in digital preservation. Digital preservation terminology is defined in the Glossary to assist assessors and the institutions being assessed achieve clarity and mutual agreement on the definition of digital preservation terms.

In this assessment, digital preservation refers to “policies, strategies and actions to ensure access to reformatted and born digital content regardless of the challenges of media failure and technological change. The goal of digital preservation is the accurate rendering of authenticated content over time.”¹ While digitization (converting analog materials to a digital format) is related to digital preservation and is addressed in this self-assessment, the focus of the assessment is on digital preservation (long-term access to digitized or born-digital content).

This peer assessment can be used by institutions at any phase of their digital preservation efforts, whether the organization is just starting to consider preserving its digital assets or whether it has been undertaking digital preservation activities for years. The question prompts will help staff investigate and advance a program in any stage of development. The peer assessment framework is ideal for institutions that are already creating or collecting digital materials, but it may also be used by institutions who are only beginning to consider collecting or creating digital material in order to inform their digital preservation planning practices. This peer assessment framework can also be used to complement other organizational assessments that fit the specific needs of the participating institutions.

How to Assess

Two suggested ways to conduct a peer assessment are co-assessment with one or more institutions or interview style. Both are valid approaches to conducting a peer assessment, and there are likely variations on these methods that will also work well for institutions.

Co-assessment

A co-assessment entails a single representative or team from two or more institutions working through each section of the assessment together. Each institution discusses its collections and practices with the group in response to the prompt questions. This type of assessment provides opportunities for immediate comparing and contrasting between institutions, as well as joint exploration of initial ideas for improvement.

1 Definitions of Digital Preservation, Association for Library Collections and Technical Services, <http://www.ala.org/alcts/resources/preserv/defdigpres0408>

Interview

A representative from one institution can use this framework to interview another institution about their digital preservation practices and goals. This approach allows the full time and attention of the interviewer to be dedicated to the assessed institution without needing to also evaluate their own program. A pair of interviewers from one institution can also be effective; one person can ask questions while another takes notes and contributes to the conversation. There are fewer opportunities in this model for immediate comparison and contrasting of practices between institutions, but the interview pair can make specific suggestions for improvement after taking time for reflection.

Prompt Questions

The questions in the framework that follows are meant to be prompts to start conversations, and additional follow-up questions may be needed to fully understand digital preservation practices, challenges, and goals at an institution. For each question, discuss both gaps and strengths. There may be areas of this framework that an institution has not yet addressed, and that can be documented as a part of the assessment.

Answers to the questions can remain informal notes or can be formed into a report that can be shared across an organization. The framework is a starting place for an assessment that can be modified to fit an institution's particular needs and audience in order to advocate for digital preservation actions.

Idea Bank

While the questions below are designed to prompt discussion and evaluation, each section of the framework also includes selected suggestions for improving digital preservation practice, and these can be

used to build a digital preservation plan. These suggestions are tailored for programs that are in their early stages and therefore may not be applicable to all organizations using this peer assessment model.

Like the prompt questions, suggestions in the idea bank are not intended to be exhaustive or complete; they should serve as a jumping-off point. Feel free to supplement or replace these recommendations with other improvements identified through your discussion of each section. If your institution finds the idea bank appropriate and helpful, then choose two or three ideas from each section to include in a digital preservation plan.

While professional development is addressed as its own section of the assessment, many recommendations in the idea bank will require research and training before being adapted to local practices and implemented.

When to Assess

Peer assessment can take place at any time and be repeated at any interval that an institution chooses. Mature programs may want to set aside time to evaluate their program every few years, in a typical strategic planning interval. Newer programs may instead wish to use the framework to build capacity for digital preservation very quickly. In this case, assessment can be a frequent exercise—as frequent as a monthly evaluation that reviews challenges that have arisen and outlines immediate next steps.

In any case, digital preservation assessment should be a continuing process. The peer assessment framework focuses on practical questions with concrete answers where possible, and the most important step is to get started.

THE ORGANIZATION

Collections

This assessment is intended to cover an institution's unique digital collections that are meant to be preserved for long-term access. This does not include emails, documents, or other materials produced by the institution in the context of normal operations in current business use, although some of these digital materials may pass into permanent collections through records management if the institution is the repository of its own history. Digital collections may include digitized photographs, born digital documents donated by a writer, oral histories, or other digital materials that are intended for long-term access as a part of an institution's collections.

Discussion prompts

- What digital collections are held by the institution?
- Which collections have the highest priority for preservation?
- What potential collections are not being acquired and why?
- How does electronic records management impact the collections?

There is no idea bank for this section. Use the prompt questions to define for the institution which digital objects will be included in the scope of this peer assessment.

Organizational Structure

Digital preservation efforts need support through every level of an organization. Most importantly, they need a decision-making body with the proper authority and expertise to plan and execute a multi-disciplinary digital preservation program. Understanding the overall context of an institution and its relationships with a larger institution, corporation, or other organization is helpful in determining audiences for digital preservation advocacy.

Staffing is further explored in the Staff and Resources section of this framework.

Discussion prompts

- Is there a Board of Directors or similar governing organization? Is the organization a part of a larger institution? How do these groups influence planning and implementation of digital preservation?
- Which parts of the organization have responsibility and/or authority for planning for digital collections and digital preservation? (Avoid details covered in the Staff and Resources section, below.)
- Is there a decision-making structure or project management approach in use elsewhere in the organization that could be adapted or applied to improve digital preservation planning and implementation?
- Which stakeholders are involved in long-term planning for digital preservation? Are there stakeholders who should be involved but are not?

Idea bank

1. Create a cross-functional decision-making structure that can devise short-, medium-, and long-term plans for the digital preservation program.
2. Add responsibilities within job descriptions to fill gaps in the organizational chart.
3. Change reporting structures to more accurately reflect digital preservation workflows and goals.
4. Add non-staff stakeholders to decision-making processes and groups.

Strategic Planning for Digital Preservation

Digital preservation activities should be guided by a planning process, and this planning process should be tied to an organization's mission and strategic initiatives. This embeds digital preservation as an important activity within the mission of the

organization and avoids characterizing it as an optional activity that can be eliminated if resources are not readily available.

Discussion prompts

- Do you have a strategic plan that incorporates digital preservation? Is there a process for drafting or updating it? Who is involved in the planning?
- Is there representation on the planning team from all stakeholder groups?
- Does the organization's broader strategic plan address digital collections?
- How does the strategic plan support the day-to-day work of the collections team?

Idea bank

1. Explore peer institutions for examples of strategic planning processes.
2. Add a digital preservation program to the institutional strategic plan.
3. Develop a specific strategic plan for the digital preservation program or collections.
4. Identify or apply for funding to support a facilitated planning process.

Mission

An effective and sustainable digital preservation program should be informed by and referenced in the institution's mission statement. Tying digital preservation to the mission of the organization helps prioritize and sustain activities and decisions over the long term. A vision statement specific to digital collections is also helpful.

Discussion prompts

- What is your mission?
- How does digital preservation support your mission?
- Does the mission statement include the concept of preservation of collections?

Idea bank

1. Create a mission statement for the organization and write it down.
2. Include preservation of collections in the mission statement, and include the preservation of digital materials implicitly or explicitly.
3. Document how digital preservation goals and activities are aligned with the mission statement.
4. Ensure the mission statement is familiar to staff and underpins daily activities.
5. Ensure and document how activities, services, and collections are mission-based.
6. Develop and document a five-year, long-term vision for digital collections and ensure that it is communicated across the organization. This vision may be included in the mission statement or strategic plan, or it may be a separate statement.

Designated Community

The concept of the designated community was developed and refined in the Open Archival Information System (OAIS) reference model, a widely-recognized standard for the functional structure of an archive. A designated community is an archive's target users, and a designated community statement describes those users by their knowledge, interest, location, demographics, or other characteristics. The designated community statement guides decisions around collection management, selection, and access. Knowing whom an institution serves is as important as knowing what objects and programs it manages for its users.

Discussion prompts

- Who uses your digital collections? Think about groups along demographic lines as well as any other groupings that are relevant to your organization.
- How do they use your collections?
- What additional groups would you like to use your collections?
- What user statistics do you collect?
- Describe your outreach activities.

Idea bank

1. Document user groups in a designated community statement.
2. Collect and analyze user statistics to understand your designated community.
3. Identify a process or activities for community engagement.
4. Evaluate community engagement processes.
5. Ensure a member of the designated community is on the cross-functional team that informs decisions about digital preservation activities.
6. Map services to designated audiences.

Organizational Strengths

As important as gap analysis is for digital preservation planning, identifying and fostering strengths and successes is key to growing a program, staying engaged, and finding satisfaction in meeting the organization's mission.

Discussion prompts

- What are you proud of?
- What are people (staff, users, the Board, etc.) excited about?
- What skills do you have in-house?
- Describe a success that you can build upon.
- How can you leverage your organization's strengths to promote innovation and preservation?

There is no idea bank for this section. Use the prompt questions to identify and document strengths and successes that you can build upon to improve your digital preservation program.

STAFF & RESOURCES

Staffing and Roles

Planning for a sustainable digital preservation program requires identifying staff who will perform digital preservation activities. Digital preservation activities are often the responsibility of many different individuals across an organization and may include collections managers, archivists, IT staff, administration, and other stakeholders. It is important to include digital preservation activities in the job descriptions of staff. This legitimizes the time that staff spend on digital preservation and also contributes to the continuity of roles during staff turnover.

Discussion prompts

- Who has responsibilities related to digital preservation? Include both in-house and outsourced activities.
- How much staff time is dedicated to digital preservation?
- Who in your organization is interested in digital preservation?
- Does anyone on staff have training or experience in digital preservation that is not being used?
- How is digital preservation written into job descriptions?
- Who is empowered to make decisions for the program?

Idea bank

1. Increase staff time allocated to digital preservation activities, and include protected time for reading and research.
2. Add digital preservation responsibilities to staff positions and job descriptions.
3. Add a permanent role for a digital preservation manager or project lead.

4. Evaluate over time whether the current staff hours and expertise allow the institution to meet digital preservation needs and goals.
5. Re-orient job descriptions and positions to reflect digital preservation enthusiasm, training, and experience.

Staff Training

Digital preservation is an ever-evolving and relatively new area of expertise for cultural heritage institutions. Even with increasingly standardized approaches to digital preservation challenges, the field continues to develop. Staff must keep their knowledge of strategies and tools up-to-date and maintain strong relationships with colleagues who are addressing similar challenges. Conferences and continuing education courses can be helpful for benchmarking programmatic process, learning about emerging trends, and maintaining relationships with professionals at other institutions. Attending focused, tool-based workshops, user group meetings, or conferences focused specifically on digital preservation will be helpful in building and maintaining digital preservation knowledge. Finding time to set aside for learning new skills can be challenging, but it is necessary in order to move forward and sustain a digital preservation program.

Discussion prompts

- What digital preservation training has your staff engaged in?
- Where do you look for training opportunities?
- What additional digital preservation training do you need?
- How does your institution support staff training (i.e. budgets, time)?
- How are staff members chosen for training opportunities?

Idea bank

1. Ensure staff have access to professional networks for asking questions, verifying information, and vetting ideas.
2. Provide internal support for professional development through funding and/or dedicated time.
3. Actively pursue online or in-person training and independent reading and research for the entire team.
4. Engage an on-site trainer for coordinated, team-based professional development.
5. Use the strategic goals of the institution to guide professional development.

Budgeting and Resources

Storage, access, and other ongoing digital preservation activities require planning and support through a consistently allocated budget. Budgetary support is needed for software, hardware, and services that support the ongoing maintenance of a digital preservation program. Because digital preservation costs are typically recurring expenditures, it is less sustainable to support digital preservation activities with grant funding.

Discussion prompts

- Describe your budget for digital preservation, keeping in mind staffing, hardware, software, training, tech support, network maintenance, subscription services, and any expenses for digital infrastructure.
- What are the program's funding sources (e.g. internal, grants, donations, other)?
- What is your organization's ongoing commitment to a budget for digital preservation?

Idea bank

1. Analyze current spending and then use the analysis to create an annual budget for digital preservation from operating funds.
2. Develop budgets for priority goals in order to be prepared for funding opportunities.
3. Ensure the annual budget for digital preservation is sustained and approved at the administrative level.

4. Draft a multi-year budget plan that includes capital expenses for digital infrastructure.
5. Identify appropriate grants for priority projects.

Community of Practice

Digital preservation is a collaborative field. Programs are stronger and more sustainable when they are connected internally across departments and externally to other institutions. Consortium models are common in digital preservation implementation, as collaborative projects can help organizations preserve digital materials in a greater quantity and at a lower cost than when working alone. Identifying and fostering internal partnerships and external networks help digital preservation programs thrive through broader advocacy, increased capacity, and shared knowledge.

Discussion prompts

- Who at your organization monitors the fields of digital preservation and digital collection management for changes in best practice?
- Who are actual or potential collaborators within the organization? Describe areas of collaboration.
- Who are actual or potential collaborators outside the organization? Describe areas of collaboration.

Idea bank

1. Monitor the fields of digital preservation and digital collection management for changes in best practice. Share this information with stakeholders in the organization.
2. Connect to other professionals through listservs, workshops, conferences, and/or membership in professional associations or consortia.
3. Identify potential collaborators both within and outside the organization. Consider regional organizations and consortia.
4. Hold regular meetings with collaborators.
5. Identify and implement workflows and tools to help with collaboration.

POLICY INFRASTRUCTURE

Written policies that are communicated across an organization and consistently followed help lay a strong foundation for a sustainable digital preservation program. Documenting policies facilitates consistency across an organization and also communicates processes and the reasoning behind decisions to future digital preservation stakeholders. Documented procedures also facilitate smoother transitions through staff turnover. All policies and procedures should be reviewed regularly and updated to reflect changes in the institution. Staff should assess whether a policy is still being followed and whether workflows need to be adjusted to adhere to the policy.

Collection Development

A collection development policy specifies what subjects, formats, or other areas of focus an institution primarily collects. The policy provides consistency across an organization, documents decisions and procedures for ongoing activities, and serves as an important reference for future stakeholders. Basing a collecting focus on the mission and community needs of the organization will ensure that the collections remain a priority for investment into the future.

Discussion prompts

- What is your collection development policy? Does it guide digital collecting?
- How is your collection development policy documented?
- What is in your digital collections now?
- What would you like to have in your digital collections in the future?

Idea bank

1. Draft a policy or set of policies that address collection strengths and collection goals as they relate to digital collections, including reformatting, born-digital acquisition, and internal records creation.
2. Document the collecting unit's preservation mandates and commitments.
3. Begin active collecting following documented policies.
4. Discontinue collecting and/or preservation of objects that do not align with policies or goals.

Selection for Digitization

Because digital preservation requires planning and investment over time, it is important to be selective about the digital objects that are brought into collections that are designated for long-term preservation. Individual scans created at a reference desk may not be worth maintaining in a preservation environment, but digital recordings of events may be the primary documentation of that event and deserve permanent preservation. While collection development policies describe the content areas and broader goals for the collection, selection policies determine the specifics of what and how physical collections are reformatted and which digital objects are acquired.

Discussion prompts

- What digital objects is your organization creating through digitization?
- How is your selection policy documented?
- Which objects require long-term preservation and why?
- Do you define desired technical targets for the materials you are collecting such as preferred format?

- Do you provide guidance on how to create digital objects that will be transferred into your digital repository?

Idea bank

1. Develop a basic selection document describing how objects are selected for digitization.
2. Develop a basic selection document describing which born-digital objects are currently accepted and how.
3. Include creators and users in the selection policy development process.
4. Expand selection criteria to include technical targets for digitization and technical guidelines for born-digital creation.
5. Create a review process and schedule for the selection policy.

Preservation Plans

Just as understanding the vulnerabilities of physical formats leads to specific preservation planning for analog collections, an understanding of the vulnerabilities of digital collections leads to specific preservation planning for digital materials that goes beyond a one-size-fits-all data backup. Redundant copying, storage architectures, and metadata are just some of the strategies used to preserve different types of digital objects according to their specific needs. Born-digital objects and video content may require different long-term approaches than other, simpler materials. Normalization and migration are practices that might be appropriate for certain digital objects.

Not every organization needs or has the ability to create preservation plans for all collections in their care at once. Expertise and policy adoption will develop over time, and the goal should be to get all items selected for permanent digital collections into a preservation environment managed at the institutional level.

- What are the different types of digital items that exist in your collections? Consider characteristics such as format, content, generation of software, reformatted, and born-digital.
- What is the current preservation practice for each type of item? Think about the procedures and workflows (including ad hoc ones) that describe how items are brought into custody, placed on storage media, managed while they are in storage, processed and described, delivered to users, etc.
- What items are most at risk for loss with the current procedures?
- What potential collections items are not accounted for in current preservation practices?

Idea bank

1. Use a pilot project to develop a preservation plan for a type (or several types) of items through its entire lifecycle.
2. Prioritize items in the collections for new or updated preservation plans.
3. Draft formal preservation plans for the current collections.
4. Expand preservation planning to include potential future collections.
5. Determine a process and schedule for reviewing preservation plans.

PROCESSES & WORKFLOWS

Reformatting

Digitization standards, best practices, and workflows affect long-term access to digital collections. An institution can facilitate future access and preservation by following best practices for archival capture of analog materials. For example, using widely adopted, open-source file formats for preservation master files reduces the risk that the file format will be unreadable by software in the future. Digitizing collections at a high resolution creates a file that will be appropriate for a range of uses, from research to publication or exhibition. Steps towards digital preservation, such as embedding metadata into image files, can be incorporated into a digitization workflow to better prepare collections for long-term preservation.

Discussion prompts

- What are you digitizing?
- How are you digitizing?
- Why are you digitizing?
- Describe or map the procedures and workflows used for reformatting.
- Where are the bottlenecks in digitization workflows? Is there duplication of effort or missing steps?

Idea bank

1. Review digitization procedures for physical preservation implications.
2. Document and follow consistent reformatting procedures (e.g. determining file target and minimum standards).
3. Determine and follow a file naming protocol and implement metadata standards.
4. Establish or improve internal quality control procedures.

Born-digital Objects

Institutions often create digital objects that should pass into permanent stewardship. They may also acquire or be interested in acquiring born-digital collections from donors. Establishing and following consistent procedures for creating internal assets, transferring internal assets into stewardship, and acquiring external ones will grow a digital collection intentionally over time.

Discussion prompts

- Are you creating digital content for long-term retention (e.g. oral histories, video recordings of events, born digital photographs)?
- Do you provide guidance to digital content creators whose material will be transferred to your collections in the future?
- Does your collection development policy address born-digital materials?
- What outreach or education efforts are being made to creators, donors, or potential donors?
- Do your current workflows protect the integrity and authenticity of born-digital materials?

Idea bank

1. Develop or expand transfer and ingest procedures to address gaps in practice or collections that are currently excluded from the workflows.
2. Implement quality control procedures that align with best practices and organizational goals.
3. Automate workflows where possible.
4. Evaluate workflows for efficiency.
5. Provide guidance and recommendations for content creators whose materials will be transferred to your collection in the future.

Metadata

Metadata is information that describes an item (physical or digital) and facilitates discovery, access, and preservation. Metadata can be categorized as descriptive, such as the title of an item or the date that it was created; technical, such as an item's file format; structural, such as the order of the pages in a book or tracks on an album; or preservation, such as information about the provenance of a born-digital item.

Discussion prompts

- What types of metadata are you creating and capturing now?
- Do you collect and create metadata about digital objects, physical objects, or both?
- Does the metadata consistently follow a set of guidelines or standards?
- What additional metadata would facilitate access to collections in the long-term?
- How are you preserving your metadata?

Idea bank

1. Record metadata consistently across digital projects.
2. Create local guidelines for the use of standard metadata schemas.
3. Evaluate metadata processes periodically.
4. Establish quality control procedures for metadata processes.
5. Create or collect preservation metadata in accordance with standard metadata schemas.
6. Preserve metadata alongside digital assets.

Documentation

Documentation, or the intentional recording of decisions, commitments, procedures, and practices, is one of the most critical activities in which stewards of digital collections engage. Regardless of what particular decisions are made in the course of preservation, documenting procedures and decision-making processes will help staff take the correct preservation actions when they are required.

Discussion prompts

- Are your internal procedures and practices written down?
- Are your internal procedures and practices consistent across staff and volunteers?
- Do you review and update your procedures? How often, and who is included in the process?

Idea bank

1. Identify the common workflows already in use and begin to write them down.
2. Determine procedures and workflows that are missing, and prioritize them for development.
3. Design a way for staff to share and access documentation.
4. Implement a regular review process for all documentation.
5. Design a process for other stakeholders, such as users, to contribute to documentation.

TECHNOLOGICAL RESOURCES

IT Support

Digital preservation requires the participation of collections staff to identify materials to preserve and of IT staff to provide some of the storage support required to monitor materials over time. This relationship is similar to physical storage environments. Physical collections require collections staff with specialized knowledge to implement best practices for storage, care, and handling, and also require facilities staff to monitor and service the HVAC or other controls for the physical environment. Similarly, digital materials require collections staff with specialized knowledge to select, store, and monitor materials, and also support from IT staff to service storage environments.

Discussion prompts

- What IT support (both in-house and outsourced) do you have?
- Describe communications with your IT Support.
- How do IT staff support your digital preservation goals?
- How do you support IT goals?
- Is collection staff actively involved in technology policymaking?
- Is professional development specific to digital preservation supported for IT staff?

Idea bank

1. Designate a member of IT services to participate in policymaking (even if IT services are outsourced).
2. Invite IT services to a cross-functional decision-making group (even if outsourced).
3. Determine what services or tools can or should be self-supported, and work with IT to implement them.
4. Establish a rubric for evaluating IT performance (even if outsourced), and collaborate with IT to implement improvements.

5. Devise a skill-share initiative so that collections staff and IT staff can learn from each other.

Legacy Media

Collections acquired in the last several decades are likely to include some amount of legacy computer media. This could include floppy discs of all sizes and types, optical discs, hard drives, and removable solid state (flash) drives. These objects are at risk of total loss due to hardware and software obsolescence, and they should be surveyed, prioritized for preservation, and transferred off of their original media.

Discussion prompts

- What types of legacy media are in your collection?
- What amount of legacy media is in your collection?
- Can you determine or estimate its content? Is that content likely to be high priority?
- How is legacy media protected during its processing (e.g. with digital forensics tools)?
- Describe your plan or process for accessing content on legacy media.

Idea bank

1. Inventory the physical backlog of removable digital media.
2. Conduct a condition and risk assessment of digital media to prioritize it for processing.
3. Set up a basic workstation for investigating legacy media.
4. Develop a procedure for evaluating legacy media in incoming collections.
5. Begin proactive investigation of legacy media with donors before donations are accepted or accessioned.
6. Begin migrating content off of legacy media carriers that have been prioritized for preservation.

Data Management Tools

A variety of software tools are used to manage the digital objects as they are preserved. Tools can help keep metadata associated with their objects, add or remove metadata, keep track of master files, automatically generate access files, run reports on objects or collections, make and store redundant copies of master files, and carry out other preservation tasks. There are many approaches to configuring a computing environment that achieves organizational goals, and one size does not fit all.

Discussion prompts

- What systems and tools are you using for managing your digital collections? They may include systems for access or tools for preservation actions, managing digital files, and organizing metadata. They may broadly include consumer tools such as Google Drive or Dropbox and electronic records management tools such as SharePoint.
- What digital collections-related needs do you have that are not being met with your current tools, systems, or practices?

Idea bank

1. Perform an environmental scan to determine what data management tools are available for each task, procedure, or workflow in place at your institution.
2. Consolidate tool usage if software systems are redundant in their capabilities.
3. Automate connections between software tools if possible.
4. Institute a sandbox process for staff to explore and report back about new tools.
5. Develop processes for the review and sunsetting out of legacy software and tools.

Digital Storage

Safe and monitored storage, with multiple managed copies of digital collections, and sound data backup practices are both core services for digital preservation. Storage architectures do not need to be overly complicated or sophisticated, but they should be intentionally planned rather than assembled haphazardly over time with a collection of ad hoc solutions.

Discussion prompts

- Where are you storing your digital collections (both files and metadata)? Are there any collections that are stored outside of the preservation storage environment, even temporarily?
- How many copies do you store?
- Who is responsible for managing your storage?
- Do you have a storage policy for collections that is separate from your policy for business use records?
- What is your plan for storage failures?
- What is your ongoing budget allocation for storage costs? How difficult is it to secure storage expansion?

Idea bank

1. Create an inventory that documents the locations of all current and potential collections items.
2. Ensure all storage media/infrastructures are subject to regular back-ups.
3. Ensure all collections are redundantly stored and separately managed across storage media/infrastructures.
4. Designate a collections staff member or group to develop storage policies for objects according to selection priorities.
5. Draft a five-year plan for storage media refresh and upgrade.
6. Automate processes for storage ingest and maintenance.

Security of Collections and Authenticity of Users

Authenticity describes collections in which “the digital material is what it purports to be.” This means that nothing about the item has been changed, either on purpose or accidentally, since the time the item was created.² Institutions ensure authenticity by employing a variety of strategies, including limiting access to collections based on staff roles and responsibilities as well as running regularly-scheduled checks on the integrity of digital files.

Discussion prompts

- What kind of users have access to your master files and metadata?
- What can each type of user do with files once they have accessed them?
- How do you track changes made to digital objects?
- How do you limit access?

Idea bank

1. Begin documenting the chain of custody of digital collections.
2. Develop a sustainable approach for checking fixity of objects at various points in their lifecycle.
3. Draft a robust access policy with enough defined roles to support secure use by all levels of staff and outside users.
4. Use technological tools to enforce access policies, and log access to preservation files.
5. Begin recording any actions performed on a file in its metadata.

GLOSSARY

- **Access File:** A compressed version of a digital object intended for access and use by patrons.
- **Access Point:** A means through which collections are accessed. In the case of digital collections, this may be a URL.
- **Analog Object:** An object that is made of physical material. This term is often used in contrast to the term “digital object.”
- **Authenticity Check:** The process of ensuring that a file is what it is expected to be and has not been altered, corrupted, or damaged in any way. Also known as “fixity check.” See: Fixity.
- **Backup:** A complete copy of a file that is stored and preserved for the purpose of replacing the master file in the case of data loss.
- **Born-Digital:** Describes an object originating in electronic form as opposed to an object originating in an analog, or physical, form.
- **Checksum:** A numeric value that is generated and assigned to a digital object and used to validate the object’s integrity.
- **Compression:** The reduction of file size for processing, storage, and transmission. Image and sound quality may be affected by the compression technique or the amount of compression. There are two types of compression, lossless and lossy.
- **Compression, Lossless:** This type of file compression reduces the storage space needed without loss of data. For example, an image compressed by lossless compression is identical to the original image.
- **Compression, Lossy:** This type of file compression reduces the storage space needed by discarding information that is considered redundant. This loss of data is often not perceptible to the human eye at normal resolution.
- **Consortial Website:** An internet site through which associated or partnered institutions collaboratively provide access to digital content.
- **Content Management System:** A software or platform intended to facilitate the management of and access to digital files. Common examples include, but are not limited to, CONTENTdm and ArchivesSpace.
- **Cloud Storage:** A service model in which digital content is managed, backed up remotely, and made available to users over the internet.
- **Database:** A structured data set designed to facilitate the organization of and ease of access to information.
- **Dedicated Workstation:** In the context of digital preservation, this is a local computer or laptop station through which users are given access to digital content that is typically stored on an internally shared drive or external hard drive.
- **Digital Collection:** A grouping of electronic objects. Digital Collection may refer to an institution’s entire repository of electronic files or to a subset of files.
- **Digital Resource:** This is an item existing in electronic form that may contain any variety of content such as simple text, still image, video, or audio. Also referred to as a digital file, digital asset, digital object, or digital material.
- **Digital Preservation:** The practices involved in stewarding electronic content, such as files, for future access.
- **Digitization:** The act of reformatting an analog object into a digital object.
- **External Media:** Peripheral storage devices that are not housed within the computer and that can be removed or added to the computer as needed to access the stored content. Examples include floppy discs, optical discs, and USB drives.
- **Emulation:** The alteration of a computer so that it can run software that appears as if the software were running on the original hardware for which it was designed.

- **File Format:** A particular way that data is arranged in a file so that it can be read by computer software. Examples include JPEGs, TIFFs, and Word DOCs.
- **Fixity:** The state of remaining unaltered. This term is used to characterize the ideal, unchanged state of digital objects. See: Authenticity Check.
- **Information Technology (IT):** The use of computer systems for storing, retrieving, and sending electronic data.
- **Legacy Carrier:** Storage media that is considered obsolete. Examples include floppy discs, magnetic tape, and optical discs.
- **Master File:** A complete version of a digital object intended for long-term storage and preservation.
- **Metadata:** Structured information that helps to describe, manage, preserve, retrieve, and deliver a digital object.
- **Metadata Schema:** A standardized series of fields used to characterize a digital object. Metadata may be generated in-house or copied from external standards, which include, but are not limited to, Dublin Core, PBCore, and MODS.
- **Metadata, Administrative:** Metadata created for the purpose of the internal management of digital resources.
- **Metadata, Descriptive:** Metadata created for the purpose of identification, searching, and retrieval. It is the equivalent of cataloging for digital collections.
- **Metadata, Structural:** Metadata created for the purpose of describing relationships between different components of a digital object. It enables display and navigation.
- **Metadata, Technical:** Metadata created for the purpose of describing the attributes of a digital file.
- **Migration:** The practice of transferring digital content from one piece of hardware to another, typically to avoid damage or loss due to obsolescence.
- **Open Source:** Denotes software whose source code is available to the public for free. This term is often used in contrast to “Proprietary” software, whose source code is privately owned.
- **Physical Carrier:** The hardware used to store digital content. Examples include solid state drives, CD’s and DVD’s, DAT Tape, and spinning disk hard drives.
- **Quality Control:** A review intended to ensure that items and procedures meet predetermined standards.
- **Recovery:** The restoration of lost data from failed hardware.
- **Reformatting:** The act of digitizing an analog object into a digital object.
- **User Permissions:** The privileges given to users that allow them to conduct a number of operations affecting digital files. Permissions may include the ability to view, edit, move, or download content.

Sources:

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GRANT OVERVIEW

In December 2016, NEDCC received a National Endowment for the Humanities Preservation and Access Education and Training grant to prepare and present a collaborative Digital Preservation Assessment training program. This program approached digital preservation assessment and training through case-study assessments, shadowing opportunities, workshops, a training institute, and a final symposium. The grant period ran from January 2017 through December 2018. Frances Harrell, Senior Preservation Specialist at NEDCC, was the project manager.

During 2017, NEDCC worked with other Regional Alliance for Preservation (RAP) centers along with digital preservation practitioners and educators to develop a framework for identifying and assessing core elements of digital preservation practice. The framework was piloted at four institutions, including an athenaeum, a municipal office, a museum, and a university library. These institutions were located in Colorado, Illinois, New York, and North Carolina. Thereafter, staff from three RAP centers met to revise the framework and begin developing related resources in preparation for the second round of assessments.

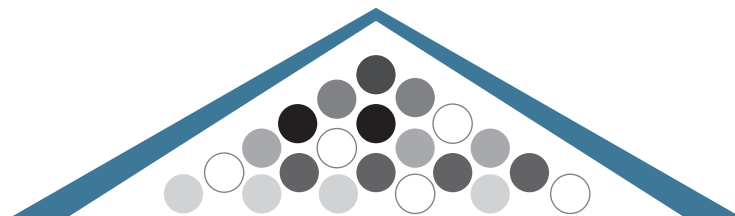
The framework was vetted in a second round of assessments during the first half of 2018, and at the same time, workshops were offered on the Digital Preservation Peer Assessment model. Participating institutions included an indigenous culture organization, a museum library, a public library, and a state historical society. These institutions were located in Alaska, Massachusetts, Nebraska, and Pennsylvania.

In July 2018 the Digital Preservation Assessment Training Institute trained a group of twelve assessors who then performed ten assessments as part of the program. The cohort of trainees consisted of digital preservation managers, graduate school faculty, statewide preservation officers, and consultants from nine different states. Their assessment sites included public libraries, small museums, academic institutions, and community archives in Colorado, New York, Oklahoma, Pennsylvania, Vermont, and Wisconsin.

Building the Community: A Digital Preservation Symposium concluded the grant in November 2018. Fifty people from a range of organizations gathered for a day of discussion about the state of digital preservation practice and the National Digital Stewardship Agenda. With a focus on digital preservation program assessment, the day included case studies, research, lightning talks, a keynote address, facilitated participation among attendees, and a panel of digital preservation assessment consultants.

Following the conclusion of the grant, the *Digital Preservation Assessment Handbook* (including the assessment framework, glossary, questionnaire, and report template) and the *Digital Preservation Peer Assessment* framework were made freely available online under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International license.

ASSESSMENT NOTES



Digital Preservation Assessment
Building a Framework, Building a Community

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