A Framework for Digital Preservation at Southern Methodist University Libraries

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Purpose

The purpose of this document is to define the requirements for the digital preservation program for Southern Methodist University Libraries ("SMUL") digitized and born-digital materials in order to ensure the long-term accessibility, authenticity, and reliability of these materials.

Scope

This document addresses the preservation of digital materials belonging to the Southern Methodist University Libraries and units within its organization. Southern Methodist University Libraries does not accept the responsibility of preserving materials for which it is not the primary custodian. Southern Methodist University Libraries will work with other university units to help educate and promote best practices and standards for digital preservation.

See the SMU Libraries Digital Preservation Policy for a list of material sources.

Standards Compliance

To achieve Southern Methodist University Libraries' digital preservation goals, Southern Methodist University Libraries recognize the need to follow the digital preservation community's standards and best practices.
- Our program will follow appropriate national standards and best practices on the role, use, and creation of preservation metadata as established by organizations including the Library of Congress, National Archives and Records Administration, Digital Library Federation, and others.
- We will adhere to the standards of preservation metadata as required by the OAIS model of information packages, including reference (unique ID), provenance (description in finding aid and/or structural metadata), context (item's relation to the whole), and fixity (checksums).

Digital Preservation Staffing and Support

Support is required from both Southern Methodist University Libraries and Southern Methodist University to ensure long term success of the digital preservation program.

Levels of Support:

Organizational support - includes staffing the Digital Preservation Librarian position. The Digital Preservation Librarian will create policies and procedures to ensure successful operation and training for staff involved in the digital preservation program.

Financial support - includes funding long-term preservation by providing financial commitments for archival, digital curation, and IT staff, and by budgeting funds to acquire hardware, software, and storage space to manage digital collections. Long-term storage and related software are required for digital preservation, as well as the technical resources required for digital preservation, particularly of born-digital materials.

Institutional Support - provides active support in the form of institutional goals, policies, and financial and non-financial assistance. These factors are critical for the success of the digital preservation program.

Curatorial Support – SMU Libraries staff members with curatorial responsibilities will be responsible for the selection, appraisal, documentation, and disposition of collections, as well as preparation of collections for ingestion, the creation of proper metadata, and monitoring of collections within the digital preservation system.

Technical Support - provides assistance to digital preservation staff on technical issues involved in the digital preservation program. SMU OIT will provide technical support by consulting with those providing curatorial services in acquiring the necessary hardware, software, and storage space to manage digital material.

Digital Preservation Staff

The Digital Preservation program is constituted by these positions:

A Digital Preservation Librarian is tasked with implementing and leading the digital preservation program and training constituents as required. This position should be a full-time, permanent position.

A Digital Preservation Archivist is tasked with providing the technical support for the processing of processing and cataloging born-digital material that has been donated and/or acquired by SMU Libraries and its special collection subunits. This position should be a full-time, permanent position.

Digital Preservation staff will work with the appropriate Norwick Center for Digital Solutions (nCDS) staff members to develop workflows to meet digital preservation best practices.

Digital Preservation Advisory Group

An advisory group will work closely with the Digital Preservation staff to implement the digital preservation program for SMU Libraries. The group will advise and provide feedback on policies and procedures related to digital preservation.

The Digital Preservation Advisory Group will consist of the following:
- *nCDS , Digital Preservation Librarian, digital preservation lead, organizational support*
- *ncDS, Digital Preservation Archivist, organizational support*
- *DeGolyer Library, University Archivist, curatorial support*
- *DeGolyer Library, Librarian, curatorial support*
- *Bywater Special Collections, Archivist, curatorial support*
- *Hamon Arts Library, Digital Repository Librarian, curatorial support*
- *Bridwell Library, Digital Projects Librarian, curatorial support*
- *Fondren Library, Collection Assessment Librarian, advisory support*
- *Hamon Arts Library, Moving Images Curator, advisory support*
- *Fondren Library, Librarian, advisory support*
- *OIT, technical support*

Policies

The policies relating to the digital preservation program will provide guiding principles and authority for the selection, preservation, and retention of born-digital and digitized materials under the purview of Southern Methodist University Libraries. These policies will assist staff members when making decisions about the digital preservation program.

Digital Preservation Policy

The Digital Preservation Advisory Group developed the SMU Libraries Digital Preservation Policy which affirms the purpose, mandate, and principles that will guide the Digital Preservation program at SMU Libraries.

See SMU Libraries Digital Preservation Policy

Digital Preservation Collection Development Policy

Born-digital materials collected by Southern Methodist University Libraries will comply with the same SMU Libraries Collections policy as physical materials. Born-digital materials that do not reflect the collecting scope of Southern Methodist University Libraries or that cannot be maintained because of limited resources or technical complications should not be accessioned.

Assessment

An environmental scan of Southern Methodist University Libraries' resources and holdings related to born-digital and digital collections and digital storage will guide decision-making throughout the life of the digital preservation program.

An environmental scan, led by the Digital Preservation Librarian with assistance from stakeholders will be conducted yearly. This scan will be used to assess risk and prioritize preservation projects and storage space allocation.

Digital Preservation Best Practices and Procedures

Digital preservation best practices and procedures will guide born-digital and digital material through the life cycle of the material. Best practices and procedures may reflect the entire digital preservation program or one and/or more specific components.

Digital Preservation Workflow

The Digital Preservation Librarian will work with the Digital Preservation Advisory Group to develop recommended workflows for the acquisition, accession, preservation, storage, description, and access of born-digital and digital materials that will move across multiple units within Southern Methodist University Libraries.

Digital Preservation Tools

The Digital Preservation program uses several tools to accomplish the necessary actions to ensure the long-term preservation of its digital holdings. Tools can be implemented in the

transfer, description and arrangement, or access of the digital holdings as well as monitoring its authenticity throughout the digital lifecycle.

See the tools implemented in the SMU Libraries Digital Preservation Workflow.

Digital Preservation Processing Guide

The Digital Preservation Librarian will maintain a processing manual describing procedures for accessioning/storing incoming electronic materials and actions that need to be taken, including OAIS compliant policies and procedures for the creation, management, storage, access and disposition of SIPs, AIPs, and DIPs, and workflows to capture important technical and preservation metadata.

Donor Submission Materials

The Digital Preservation Librarian will work with each respective archive to develop a "Donor Guidelines for Electronic Formats" informational packet that will provide donors with detailed guidance on the preferred formats, organization, and method of transfer of born-digital materials. These materials will educate and inform donors about which holdings get retained and which holdings get discarded as part of a digital submission.

Long-term Storage/Preservation Software

To properly preserve digital files, long-term storage that meets OAIS standards is required. The Norwick Center for Digital Solutions (nCDS) in partnership with OIT will develop the digital infrastructure to comply with OAIS storage requirements.

Preservation Software

The Digital Preservation Librarian will work with colleagues in Southern Methodist University Libraries and OIT in maintaining and developing digital preservation software that will allow Southern Methodist University Libraries to automate several digital preservation processes and provide advanced access to born-digital and digital material. SMU Libraries currently maintains the software Rosetta for its digital preservation efforts.

Storage/Replication

The Digital Preservation Librarian will work with colleagues in Southern Methodist University Libraries and OIT in planning for acquiring storage for the replication of Southern Methodist University Libraries' born-digital and digital material stored on servers located on campus. Number of replications and their location will be determined based on digital preservation community best practices and available resources.

See SMU Libraries Digital Preservation Backup Procedures for updated storage and replication practices.

Access and Use

Electronic Records Access

Access to processed born-digital and digital material that is not stored in a Southern Methodist University Libraries' affiliated repositories (ContentDM, SMU Scholar, etc.) will be provided through the use of methods developed by the Digital Preservation Librarian with support from the Digital Preservation Advisory Group.

Evaluation and Review

The policies and procedures (including this framework) of the digital preservation program will be periodically evaluated by curatorial staff with assistance from OIT and the Digital Preservation Advisory Group.

Appendix 1: Source Materials

"NEDCC Digital Preservation Policy Template," Northeast Document Conservation Center
https://www.nedcc.org/assets/media/documents/SoDAExerciseToolkit.pdf

"Digital Preservation Policy," Woodson Research Center, Rice University
https://library.rice.edu/guides/digital-preservation-policy

"Digital Preservation Framework," University of Minnesota Libraries
https://www.lib.umn.edu/dp/digital-preservation-framework

"Digital Preservation Framework," Utah State Archives
https://archives.utah.gov/documents/Utah%20State%20Archives%20DP%20Framework%20-%20Version%201.0.pdf

"Yale University Library's Digital Preservation Policy Framework," Yale University Library
http://web.library.yale.edu/sites/default/files/files/YUL%20Digital%20Preservation%20Policy%20Framework%20V1%200.pdf

"Digital Preservation Glossary," Library, University of Michigan
https://www.lib.umich.edu/preservation-and-conservation/digital-preservation/digital-preservation-glossary

'Glossary," National Digital Stewardship Alliance
http://ndsa.org/glossary/

"What are Metadata Standards," Digital Curation Centre
http://www.dcc.ac.uk/resources/briefing-papers/standards-watch-papers/what-are-metadata-standards

"Glossary," Federal Agencies Digital Guidelines Initiative
http://www.digitizationguidelines.gov/glossary.php

"Reference Model for an Open Archival information System (OAIS)"
https://public.ccsds.org/pubs/650x0m2.pdf

Appendix 2: Glossary

Administrative Metadata:
Administrative Metadata is used to manage administrative aspects of the digital object such as intellectual property rights and acquisition. Administrative Metadata also documents information concerning the creation, alteration and version control of the metadata itself

-Digital Curation Centre

AIPs:
Stands for Archival Information Package. This is what is stored within a digital repository. Included within an AIP is not only the digital object (s) but also any other information that helps to describe and understand the object(s). An AIP may have undergone transformation from ingest as a SIP in order to conform to the standards of the digital repository. This may include change of format or the addition of metadata.

-Digital Preservation Glossary, Library, University of Michigan

Archival Storage:
The category of digital storage that provides the services and functions for the long-term storage, maintenance and retrieval of digital objects.

-National Digital Stewardship Alliance

Authenticity:
A mechanical characteristic of any digital object that reflects the degree of trustworthiness in the object, in that the supportive metadata accompanying the object makes it clear that the possessed object is what it purports to be.

-National Digital Stewardship Alliance

Born Digital:
A digital object that has never had an analog form. They differ from documents, movies and photographs that may have been scanned or converted to a digital format.

-Digital Preservation Glossary, Library, University of Michigan

Descriptive Metadata:
Descriptive Metadata enables identification, location and retrieval of information resources by users, often including the use of controlled vocabularies for classification and indexing and links to related resources.

-Digital Curation Centre

Digital Preservation:

The series of managed activities, policies, strategies and actions to ensure the accurate rendering of digital content for as long as necessary, regardless of the challenges of media failure and technological change.

-National Digital Stewardship Alliance

DIPs:

Stands for Dissemination Information Package. This is what is given to an end user for access purposes. Included within a DIP is not only the digital object(s) but also any other information that helps to describe and understand the object(s). The creation of a DIP from an AIP may involve some transformation of the object to make it suitable for end-users.

-Digital Preservation Glossary, Library, University of Michigan

Fixity:

A mechanism to verify that a digital object has not been altered in an undocumented manner. Checksums, message digests and digital signatures are examples of tools to run fixity checks. Fixity information, the information created by these fixity checks, provides evidence for the integrity and authenticity of the digital objects and are essential to enabling trust.

-National Digital Stewardship Alliance

Ingest:

The process through which digital objects are added into a managed environment.

-National Digital Stewardship Alliance

Long-term Accessibility:

Continued access to digital materials, or at least to the information contained in them, indefinitely.

-Digital Curation Centre

OAIS:

OAIS is an acronym that stands for Open Archival Information System. It is an archival framework developed by the Consultative Committee for Space Data Systems (CCSDS). The OAIS framework consists of an organization of people and systems who have accepted the responsibility to preserve information and make it available for a certain group of people. It does not offer a definitive guideline for how a digital repository should act or what it should do but instead gives the digital preservation community a common language and outlook for talking about digital preservation.

Provenance:

Information on the origin of a digital object and also on any changes that may have occurred over the course of its life cycle.

SIPs:

Stands for Submission Information Package. This is what a content provider deposits into a digital repository. Included within a SIP is not only the digital object(s) but also any other information that helps to describe and understand the object(s).

Structural Metadata:

Structural metadata describes the intellectual or physical elements of a digital object -Digital Curation Centre

Technical Metadata:

Technical Metadata describes the technical processes used to produce, or required to use a digital object.

Write-blocking:

Act of preventing an examination computer system from writing or altering a collection or subject hard drive or other digital media object. Hardware write blockers are generally regarded as more reliable than software write blockers.