Best Practices for Digital Collections

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Best Practices for Digital Collections

Corinne Jacox, Catalog/Reference Librarian, Creighton University Law Library
Yumi Ohira, Digital Initiatives Librarian, University of Nebraska at Omaha Libraries

2018 NLA/NSLA Joint Conference, October 5th, 2018
Planning

Create New Research Opportunities for Users

- Available to a variety of users
- Enhance understanding of the digital objects

Planning is Key

- Institution’s mission and goals
- Costs and capabilities for long term maintenance
- Standards -- documentation, formats, metadata
- Timeline
- Define the scope (characteristics of objects to be digitized)
  - How many, formats, sizes, unusual characteristics, condition
- Workflow
- Equipment -- optimize quality and level of production
Policies

Access

Content

Committee

Copyright

Metadata

Preservation

Withdrawal

Examples
University of Chicago Library
University of Hawai‘i at Mānoa Library
Institutional Repository Policies

This page overviews policies that guide Knowledge@UChicago, the University of Chicago's institutional repository.

Scope

Contributors to Repository

Contributors must be affiliated with the University of Chicago and have valid CNetID credentials to deposit work in the repository. Alumni and other affiliated users without CNet credentials should contact the Knowledge@UChicago team.

Scope of Deposited Content

- Deposited content can be scholarly, creative, research-related, or teaching resources.
- Deposited content should be in a completed state, rather than in-progress and regularly updated.
- Contributors may deposit content created prior to joining the University of Chicago.
- Contributors must be willing and able to grant the University the non-exclusive rights to both preserve and make their work available through Knowledge@UChicago.
- Deposited content must be in a digital format.
- If the deposited content is part of a series, other works in that series should also be deposited when possible so that we can offer a full and complete collection.

Supported Content Types

The following content types are among those that will be accepted:

- publications (including preprints)
- dissertations
- masters and undergraduate theses
- working papers and technical reports
- white papers
- datasets up to 1GB (data sets must be complete and ready to use, and must include a readme file. At this time, no classified/restricted/confidential data can be accepted.)
- conference presentations
- conference posters
- campus-based publications
- course-based publications
- teaching and learning resources
- audio and video recordings

This is a non-exhaustive list. Contributors are welcome to deposit content that can be characterized as "scholarly, creative, research-related, or teaching resources" and to contact us with any questions about materials.
Digital Collections and Repository Program (D-CARP): Prioritization and Selection Criteria

UHM Library holds a large number of collections that would be appropriate for digitization and online access. However, digitization projects are costly and require a commitment of staff time. The following list of criteria is recommended to guide selection of collections of analog materials for conversion to digital format. Selection is an activity led by content managers and specialists with the help of D-CARP.

UHM Library Project Selection Factors

Copyright Status

What is the copyright status of the materials? Most material considered for digitization and access on the open Web falls into one of the following three categories:

- Public domain: works that never were, or are no longer covered by copyright. Works in the public domain may be used without permission.
- All works published before January 1, 1923.
- Works published between 1923 and 1964 and not renewed in the 28th year.
- Works published without copyright notice before 1999.
- Unpublished works whose author died before 1932, otherwise, the term is life plus 70 years.
- Works for which the copyright is held by the University.
- Works for which we have secured permission to digitize.
Staffing

- **Project Manager** -- oversees daily operations and maintains the budget, timeline, and workflow
- **Collections Assessor** -- selects originals, checks their condition and makes conservation recommendations, rehouses originals as necessary, and reshelves them once digitization and cataloging are complete
- **Database Manager** -- creates and maintains databases for the project
- **Scanning Technician** -- handles original objects, creates scans and surrogates, and produces backup files on the storage media
- **Quality Control Technician** -- checks the image files generated by the scanning technician against benchmarks
- **Cataloger** -- creates or edits records for digital images of originals included in the project
- **Web Manager** -- designs and maintains the website housing the project

*Lucidea Think Clearly Blog*
Metadata

- Data about data
  - Description and context of the data
  - Helps to organize, find and understand data

- Recognized standard
  - Easier to exchange/migrate data with other systems
  - No standard can cover all materials for all users

- Three types
  - Descriptive
  - Administrative
  - Structural
Descriptive Metadata

- Describes resource for discovery and identification
- Includes elements such as title, abstract, author, dates, subjects, keywords, and unique identifiers (PURL, handle)
- General standards
  - DCMI (Dublin Core Metadata Initiative)
  - MODS (Metadata Object Description Schedule)
  - MARC (MAchine-Readable Cataloging)
- Standards for special descriptions
  - Data Sets for Social Sciences: DDI (Data Documentation Initiative)
  - Archive: EAD (Encoded Archival Description)

Illustration by Jørgen Stamp, Digitalbevaring.dk CC Attribution 2.5 Denmark
Administrative Metadata

- Provides information to help manage a resource
  - When and how it was created
  - File type
  - Technical data on creation and quality control (critical for migration and long-term sustainability of the digital resource)
  - Who can access it

- Subsets
  - Rights management metadata (intellectual property rights)
  - Preservation metadata (information needed to archive and preserve a resource)

Sample Elements

- Scanner type and model
- Resolution
- Bit depth
- Color space
- File format
- Compression
- Light source
- Owner
- Copyright date
- Copying and distribution limitations
- License information
- Preservation activities
Structural Metadata

- Facilitates navigation and presentation of electronic resources
  - Provides information about the internal structure of resources including page, section, chapter numbering, indexes, and table of contents
  - Describes relationship among materials (e.g., photograph B was included in manuscript A)

- Example
  - METS (Metadata Encoding & Transmission Standard)

Sample Elements

- Structuring tags
  - Title page
  - Table of contents
  - Chapters
  - Parts
  - Errata
  - Index
  - Sub-object relationship (e.g., photograph from a diary)
Metadata Best Practices

- Mountain West Digital Library Dublin Core Application Profile Version 2.0 (2011)
- Lyrassis Digital Toolbox Metadata
- Orbis Cascade Alliance Dublin Core Best Practice Guidelines Version 2.3 (2018)
- Nebraska Library Commission Nebraska Memories Metadata Guidelines (2009)
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<td>How to Use</td>
<td>Person or entity responsible for creating intellectual content of</td>
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<td></td>
<td>if known, separated by a hyphen.</td>
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<td>For further help in formatting names not found in LCNAF, consult a</td>
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Privacy

Establish procedures and policies to protect the interests of donors, individuals, groups, and institutions whose public and private lives and activities are recorded in their holdings

Access restrictions on collections to ensure that privacy and confidentiality are maintained

Users’ rights to privacy by maintaining the confidentiality of their research and protecting any personal information collected about the users

Society of American Archivists
Delaney Tokyo Papers

Photo credit: Tojo (left)
https://www.flickr.com/photos/pingnews/441531324

Photo credit: Defendants (right)
http://modernmotion.com/verdicts-tokyo-war-crime-trial/
Individual summation on behalf of TOJO, Hideki, Prime Minister of Japan, read to the Tribunal by Biewett and Kiyose April 9-12, 1948. It contends that TOJO was not individually guilty of the charges against him, that “no act performed by him during the entire period of the indictment was criminal,” and that no evidence offered by the Prosecution proved him guilty of criminal commission or criminal omission. One of the major points was that Japan was acting in self-defense.

Ichiro Kiyose, Japanese Counsel; George Francis Biewett, American Counsel

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URI
http://hdl.handle.net/10504/74576

Collections
Delaney Tokyo Trial Papers

The Tokyo War Crimes Trial: Index and Guide Volume III Pages
1107-1110

The Tokyo War Crimes Trial: Transcript of the Proceedings Pages
47274-47526
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<td>The Creighton University Law Library provides access to these materials for educational and research purposes, and for personal enjoyment. Permission to reproduce the file in any form other than for personal individual use must be obtained in writing from the Creighton University Law Library.</td>
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<td>application/PDF -- This 69,600,000 byte file is derived from a 300 dpi uncompressed PDF file that was scanned from the original using a Xerox WorkCentre 7120, color configuration. ABBYY FineReader (Build 10.0.104.206; Part #700/26) was used for text recognition.</td>
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<td><a href="http://viaf.org/viaf/70380561">http://viaf.org/viaf/70380561</a></td>
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Digitization Workflow

(1) Digitization Request
(2) Capture (Scanning process)
(3) Convert (Edit and save digital objects)
(4) Preserve
(5) Access
Digitization Workflow - (1) Digitization Request
Digitization Workflow - (2) Capture
Digitization Workflow - (3) Convert

- Unaltered TIFF (Master Image)
- Edited TIFF (Dilivertive Image)
- Edited JPEG (Access Image)
## Digitization Workflow - (3) Convert

### File Naming Conventions:

1. **kcas204_ecs_f1d1p1ow.jpg**
2. **kcas204_ecs_f1d1-d100.pdf**
3. **fhsuflar_wkohp_ryan-stellaow.mp3**
4. **fhsuflar_wkohp_ryan-stella_p1-100.pdf**
5. **fhsugsth_tacha-dustin_p1-100.pdf**
6. **fhsugsth_tacha-dustin_p1.tif**

![Digitization Workflow Diagram]

<table>
<thead>
<tr>
<th>I. Institutional name</th>
<th>Example 1</th>
<th>Example 2</th>
<th>Example 3</th>
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<tbody>
<tr>
<td>A. Parent Organization</td>
<td>kc</td>
<td>Kansas Cosmosphere</td>
<td>flsu</td>
</tr>
<tr>
<td>B. Organization</td>
<td></td>
<td></td>
<td>flsu</td>
</tr>
<tr>
<td>C. Department</td>
<td></td>
<td></td>
<td>gs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II. Object ID</th>
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</thead>
<tbody>
<tr>
<td>A. Collection</td>
</tr>
<tr>
<td>B. Box within Collection</td>
</tr>
<tr>
<td>C. Folder within Box</td>
</tr>
<tr>
<td>D. Document within Folder</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>III. Part Designator</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Part within Document (single)</td>
</tr>
<tr>
<td>B. Reverse of Document</td>
</tr>
<tr>
<td>IV. Page Designator</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>V. Version of Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Optimized file</td>
</tr>
<tr>
<td>B. Web-ready file</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VI. File Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. File Extension</td>
</tr>
</tbody>
</table>

| Example 1: kcas204_ecs_f1d1p1ow.jpg | Single Cosmophere document (JPEG Web-use) |
| Example 2: fhsuflar_wkohp_ryan-stellaow.mp3 | Oral History for WKOHNP (MP3 Web-use File) |
| Example 3: fhsugsth_tacha-dustin_p1-100.pdf | Combination Thesis PDF document |
Digitization Workflow - (3) Convert

File Naming Conventions for Scanned Items

Under the collection folder (e.g., the Directors Structure & Folder Naming), create new folders to save TIFF, JPEG, PDF files, and PDFs if necessary.

For example:

 Shares (G) > Digitized Material > CONTENTitem > MS20011

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JPEG</td>
</tr>
<tr>
<td></td>
<td>PDF</td>
</tr>
<tr>
<td></td>
<td>TIFF</td>
</tr>
<tr>
<td></td>
<td>unfiled</td>
</tr>
<tr>
<td></td>
<td>MS20011_metadata.xlsx</td>
</tr>
</tbody>
</table>

The folder "unfiled":
- Save a TIFF/RAW file as a preservation quality file.
- File naming convention: [call number]_prefix format [extension].tif

The folder "JPEG":
- Save an edited TIFF master file.
- Under adequate scanning conditions, this editing step is not necessary; if you anticipate significant editing of the image, then you should save an edited file (e.g., MS20011_jpeg0001.tif), then save an edited TIFF file for the production master.
- File naming convention: [call number]_prefix format [extension].jpg
- example: MS20011_jpeg0001.jpg

The folder "PDF":
- Save an edited JPEG master file (Selected Image Quality/Resolution image quality).
- File naming convention: [call number]_prefix format JPEG_quality [extension].jpg
- example: MS20011_jpeg0001.jpg

The folder "PDF":
- Create a PDF file or combine JPEG files in the JPEG folder into PDF format.
- Before saving the PDF in the PDF folder, apply OCR to the PDF document.
- File naming convention: [call number]_pdf.pdf
- example: MS20011_pdf.pdf

Save the metadata describing the collection.

If the collection consists of journals or newspapers, the directory structure and file naming can be, for example...
Digitization Workflow - (3) Convert

MSS0034_1978_Wether_m_001.tiff
MSS0034_1978_Wether_001.jpg

UNO0012_Boys_of_Omaha_v01_001.jpg
UNO0012_Boys_of_Omaha_v01_001.jpg
...
UNO0012_Boys_of_Omaha_v01.pdf

http://digitalpowrr.niu.edu/
Digitization Workflow - (3) Convert

Analyzing/OCR

Digitization Workflow - (3) Convert

What is PDF/A?

**PDF/A-1a**: The PDF/A-1a requires tagging for structure as well as Unicode character maps for fonts. The objective for PDF/A-1a includes the goals for PDF/A-1b and accessibility for physically impaired users. The tags for accessibility enable screen readers to provide some form of description for images.

**PDF/A-1b**: The PDF/A-1b variant is for content that has no accessibility tagging; it's useful for scanned documents. The objective for PDF/A-1b is to ensure reliable reproduction of the visual appearance of the document.

**PDF/A-2**: The PDF/A-2 is the second part of the standard and addresses some of the new features added with versions 1.5, 1.6, and 1.7 of the PDF Reference.

**PDF/A-3**: The PDF/A-3 allows for the embedding of arbitrary file formats such as XML, CSV, and CAD into PDF/A as complete archived objects.
Digitization Workflow - (3) Convert

3-2-1 Rule

3: Make 3 copies
2: At least 2 of the copies should be on 2 different types of storage media.
1: Store 1 of the copies in a different location from the other 2 copies.

Digitization Workflow - (4) Preserve

LIBNAS
- Process (Student Working Area)
  - Master
  - Access

Processed (Access/Storage)
- Master [copy 2]
- Access [copy 2]

Checksums

BOX
- Access [copy 3]

Checksums

Dark Archive (Amazon Glacier)
- Master [copy 3]
Digitization Workflow - (4) Preserve

Goals of Long-term Digital Preservation

- Availability
- Identity
- Persistence
- Renderability
- Understandability
- Authenticity
Digitization Workflow - (4) Preserve

Preservation Metadata

**Provenance**: Preservation metadata should record information bearing on the custodial history of the digital object, potentially stretching back to the time of the object’s creation, and moving forward through successive changes in physical custody and/or ownership.

**Authenticity**: Preservation metadata should include information sufficient to validate that the archived digital object is in fact what it purports to be, and has not been altered, either intentionally or unintentionally, in an undocumented way.

**Preservation activity**: Preservation metadata should document the actions taken over time to preserve the digital object, and record any consequences of these actions that impact the look, feel, or functionality of the object.

**Technical environment**: Preservation metadata should describe the technical requirements, such as hardware, operating system, and software applications, needed to render and use the digital object in the state in which it is currently stored in the repository.

**Rights management**: Preservation metadata should record any binding intellectual property rights that limit the repository’s powers to take action to preserve the digital object, and to disseminate the object to current and future users.
Levels of Digital Preservation

<table>
<thead>
<tr>
<th>Storage and Geographic Location</th>
<th>Level 1 (Protect your data)</th>
<th>Level 2 (Know your data)</th>
<th>Level 3 (Monitor your data)</th>
<th>Level 4 (Repair your data)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Two complete copies that are not collocated</td>
<td>- At least three complete copies</td>
<td>- At least one copy in a different geographic location</td>
<td>- All three copies in geographic locations with different disaster threats</td>
<td>- Have a comprehensive plan in place that will keep files and metadata on currently accessible media or systems</td>
</tr>
</tbody>
</table>

- File Fixity and Data Integrity:
  - Level 1
  - Information Security: Level 1
  - Metadata: Level 1
  - File Formats: Level 2

- Storage and Geographic Location: between Level 1 and Level 2

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Digitization Workflow - (4) Preserve

Digitization Workflow - (5) Access
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Oral History Metadata Synchronizer
http://www.oralhistoryonline.org/
Digitization Workflow - (5) Access
Questions
Thank you!

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