

# Building Digital Preservation Pathways at NEDCC



NORTHEAST  
DOCUMENT  
CONSERVATION  
CENTER





BRICKSTONE SQUARE















ACID FREE

1976 N-S

1976

S-Z 1979

1973

S-Z

P-Z 56

H-Z 1962

Wedding 1983

G-M 1983

N-Z 1981

A-D 1979

G-I 1980

A-Z 1974

H-L

561

RE ORDER 1980

M-P 1974

A-K 1984

H-L

1977 52

Wedding 1981

1978

1975

C-G

1969

G-O

R-Z

1976 A-D

Q-S 1974

1978

S-Z

1977

E-K

E-K 1979

Gaylord

Gaylord  
100%  
ACID FREE





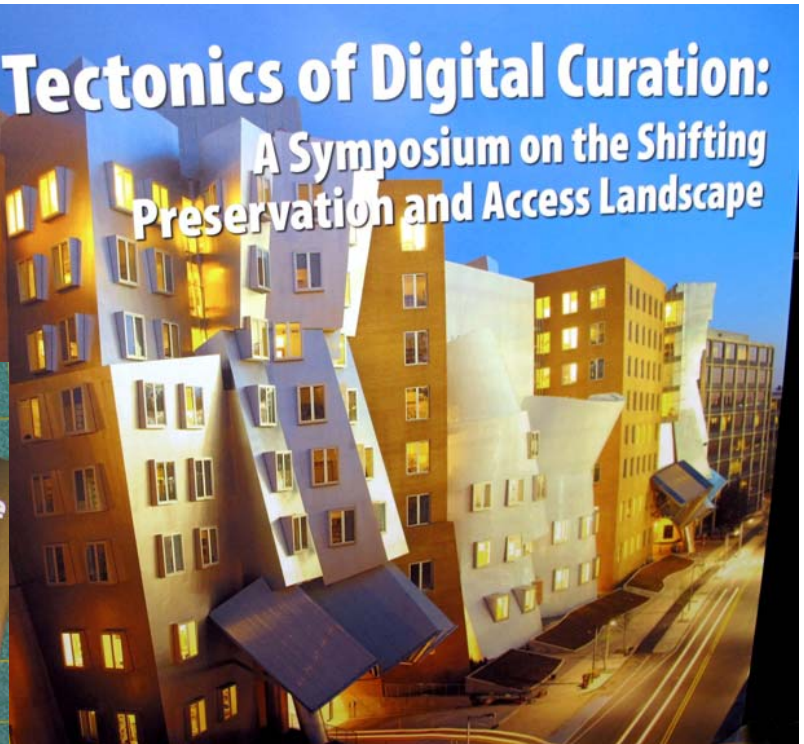








# The Tectonics of Digital Curation: A Symposium on the Shifting Preservation and Access Landscape



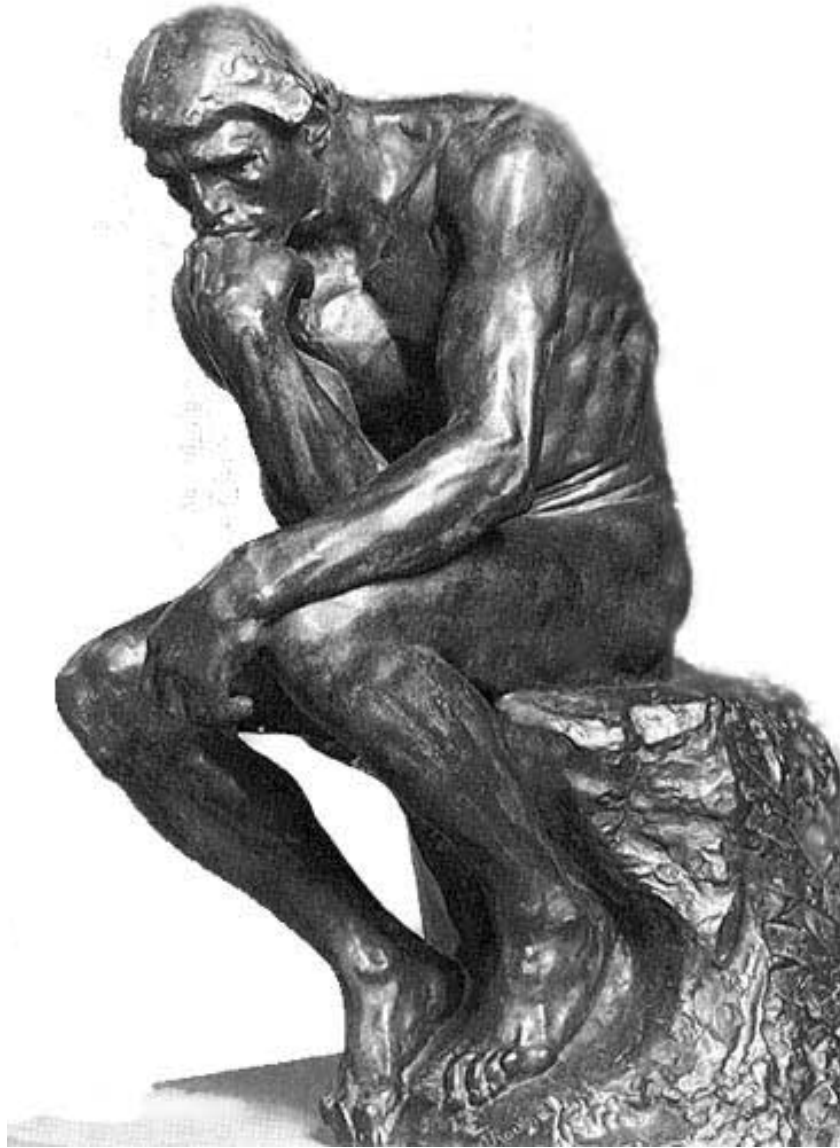






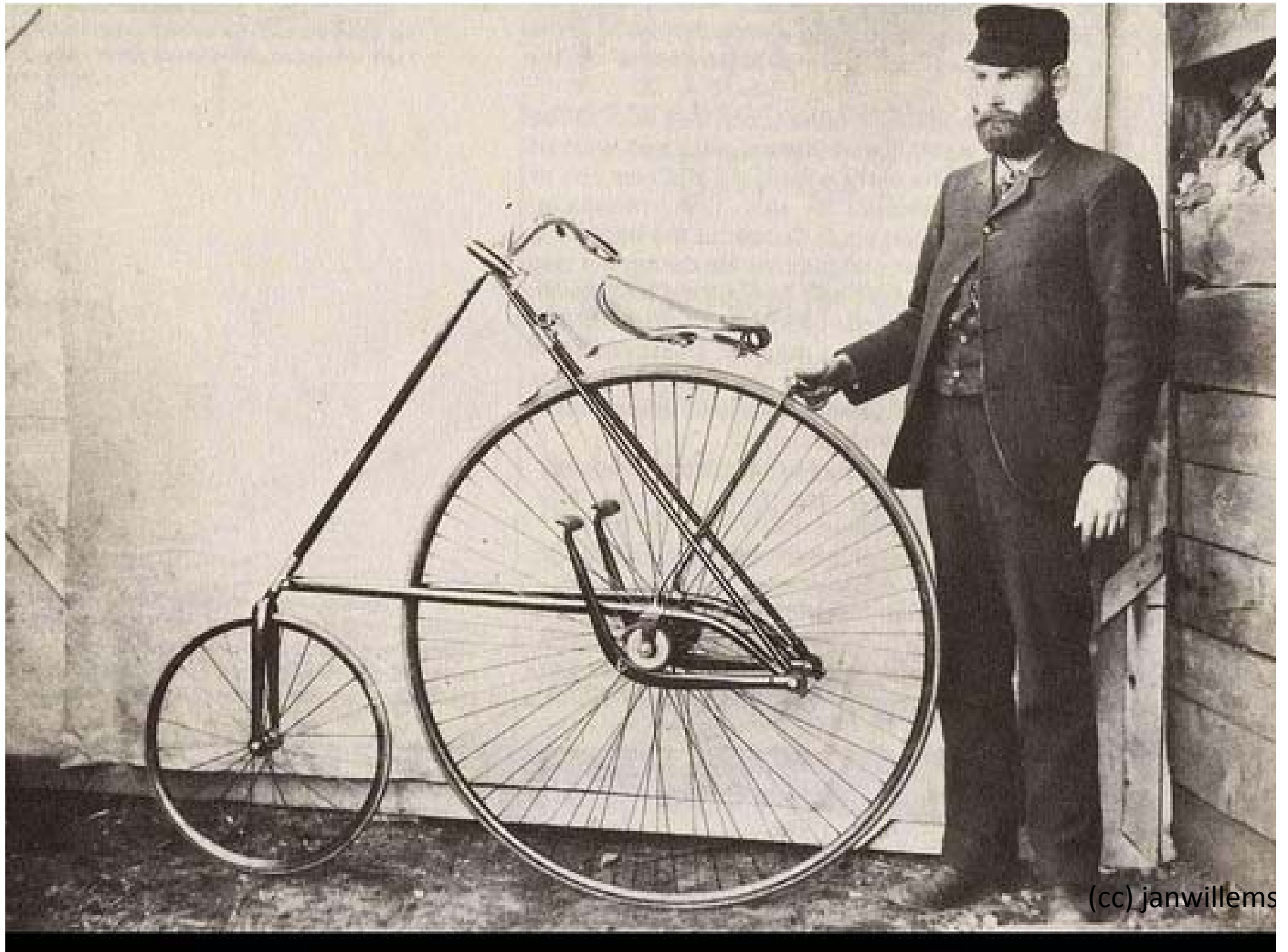






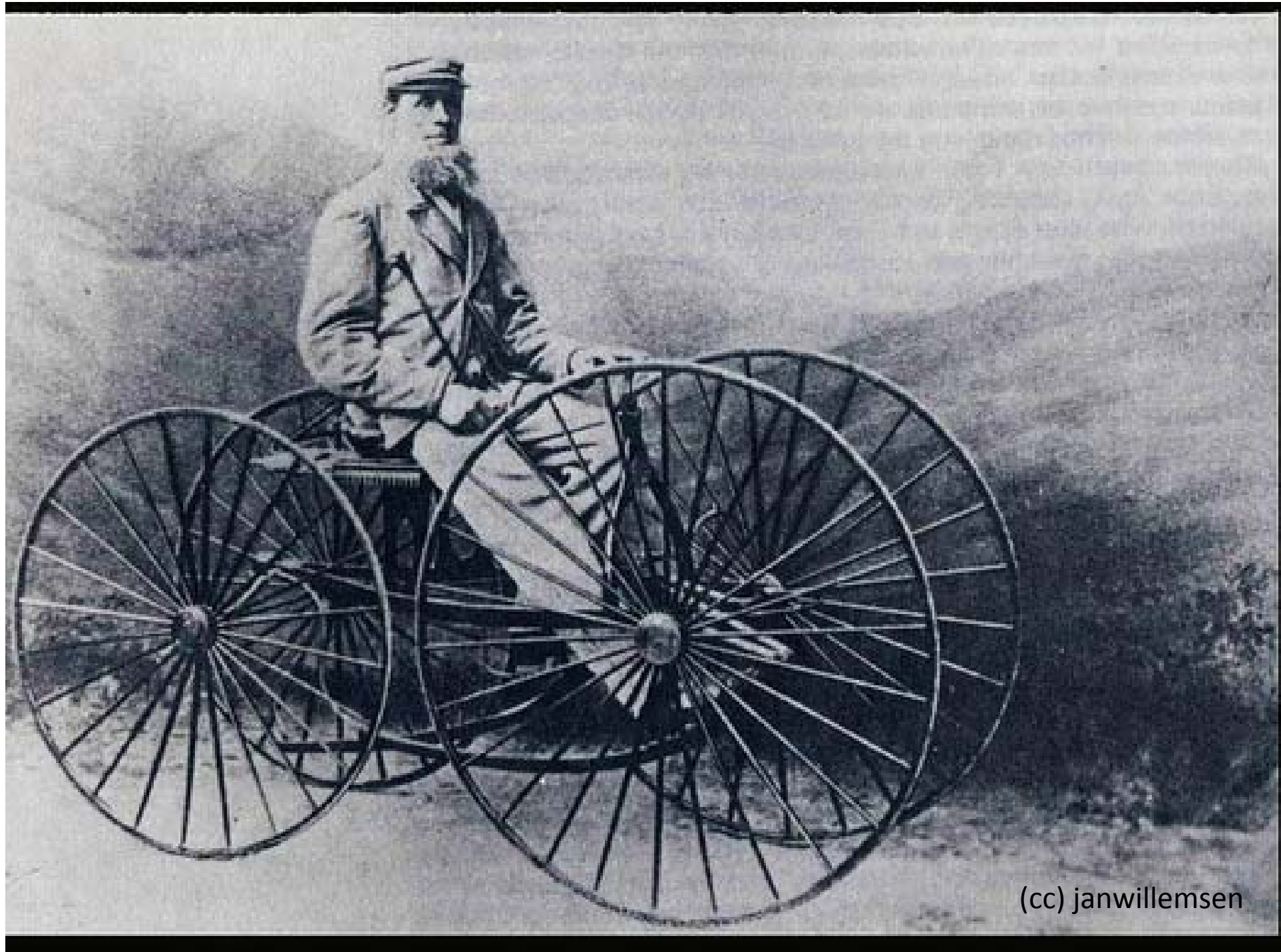
Challenger:  
Understanding Our  
Clients and  
Collaborators...

...and Ourselves



(cc) janwillem





(cc) janwillemsen





(cc) Bas Kers



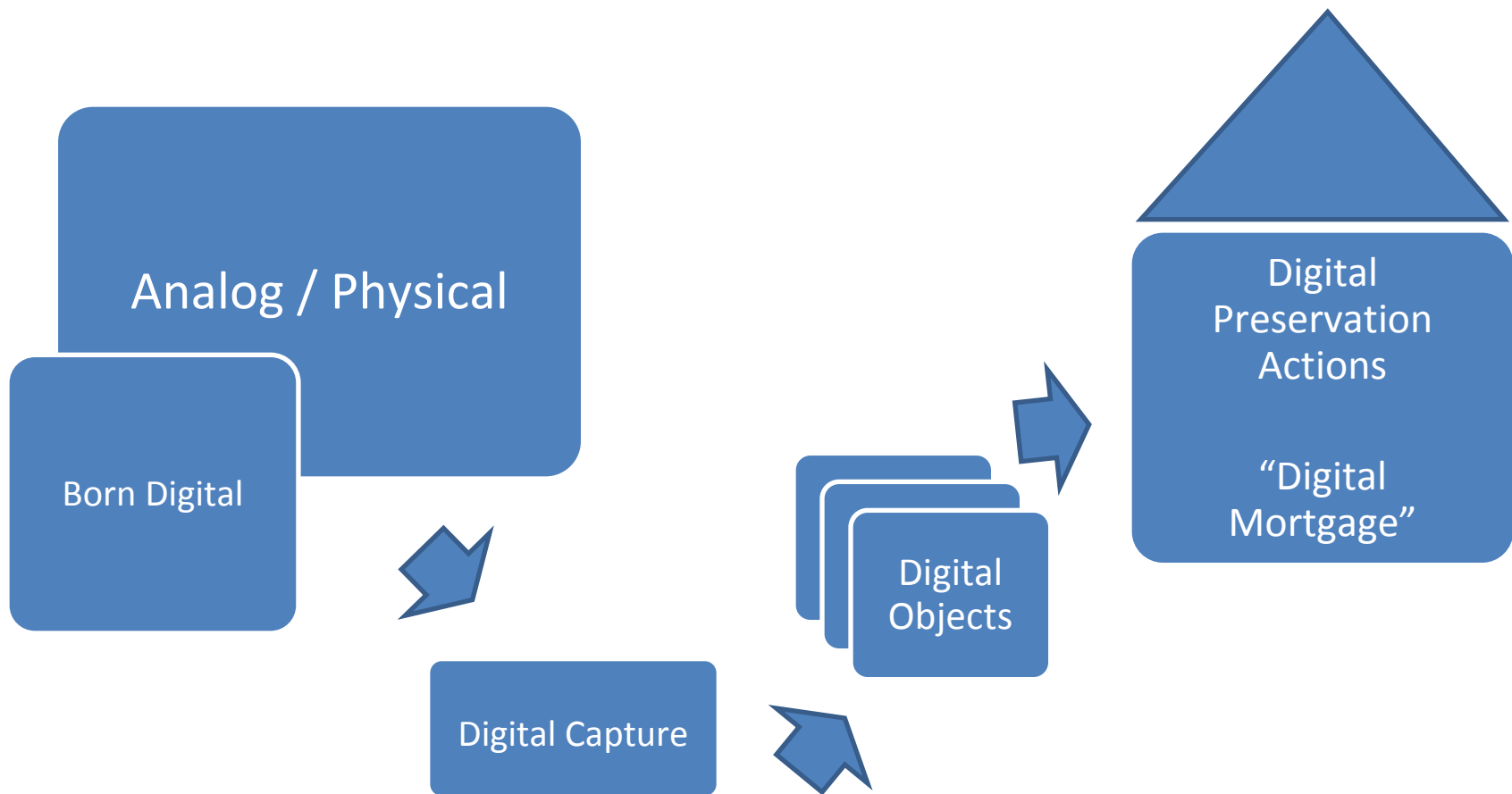
(cc) GmanViz





(cc) mwkelley

# Making Choices





# Digital Preservation ???

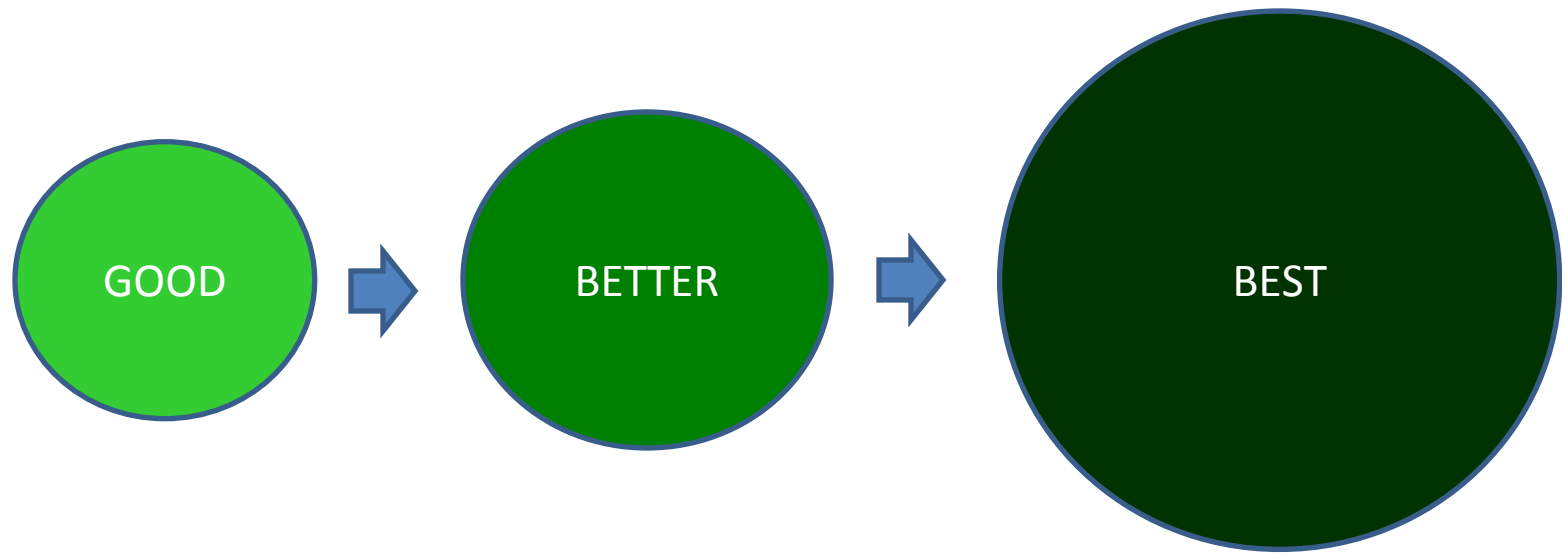
- Should I do this?
- How do I do this?
- What's the right “\_\_\_\_\_”?
- Who should do this?
- How do I talk to “\_\_\_\_\_” about doing this?
- How do I know if I made the right choice?

# Primary Areas of Concern

- Standards and best practices
- Workflows and staffing
- Storage for preservation
- Rights and usage
- Funding



# How we answer...





(cc) Ibsterling



# Resources

- Start with “The Classics:
  - NISO’s A Framework of Guidance for Building Good Digital Collections
  - CRL’s Trustworthy Repositories Audit & Certification: Criteria and Checklist
- Consider some new additions to the pack...





[Your Comments](#)  
Submit comments on guidelines or on our digitization efforts in general.

## About This Initiative

Started in 2007, this is a collaborative effort by federal agencies to define common guidelines, methods, and practices for digitizing historical content. As part of this, two working groups are studying issues specific to two major areas, Still Image and Audio Visual.

[Learn more about the initiative »](#)



### Still Image Working Group

This group is involved in a cooperative effort to develop common digitization guidelines for still image materials.



### Audio-Visual Working Group

The goal for this working group is to identify, establish, and disseminate information about standards and practices for the digital reformatting of audio-visual materials.

## Digitization Guidelines

### Audio Digitization System Performance

Draft for Public Comment | Comment period closes April 15, 2012

This document discusses the relevant metrics and measurement methods for analog-to-digital converters. Future performance-related documents will discuss the problem of interstitial errors, i.e., accidental loss or transformations of audio samples within the digitizing system before the data stream is written to file.

### Minimal Descriptive Embedded Metadata in Digital Still Images

Reviewed and Recommended by Working Group | March 23, 2012

Guidelines created by the EMDaWG (Embedded Metadata Working Group) of the Smithsonian Institution and recommended by the Still Image Working Group. This document defines the minimum proposed descriptive embedded metadata for digital still images.

### Embedding Metadata in Broadcast WAVE Files

Draft for public comment | Comment period closes February 21, 2012

Revision to the guideline for metadata to be embedded in Broadcast WAVE files that reproduce historical and cultural heritage digital sound recordings.

### Technical Guidelines for the Still Image Digitization of Cultural Heritage Materials

Updated by Working Group | August 24, 2010

Creation of Raster Image Master Files represents shared best practices

Print Subscribe Share/Save

## News & Events

[Information or Artifact?](#) Four-part blog on digitizing books and photos  
October 17-20, 2011

[Evaluating Still Image Digitization and Digitization Equipment](#)  
(PDF, 2.5 MB) | August 16, 2010

[Information Standards Quarterly article](#)  
(PDF, 528 KB) | Spring 2010

[Federal Computer Week article](#)   
February 5, 2010

[See all News & Events »](#)

## Resources

The following are provided as resources for the digitization of both audio-visual and still image digital content.

- [Digital Imaging Standards](#)
- [Evaluating Still Image Digitization and Digitization Equipment](#) (PDF, 2.5 MB)
- ["Format Considerations in Audio Visual Preservation Reformatting"](#) (PDF, 528 KB)

[View all Resources »](#)



## Sustainability of Digital Formats Planning for Library of Congress Collections

[Introduction](#) | [Sustainability Factors](#) | [Content Categories](#) | [Format Descriptions](#) | [Contact](#)

[Format Description Categories](#) >> Browse Alphabetical List

### Browse alphabetical list

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<a href="#">A</a>	<a href="#">B</a>	<a href="#">C</a>	<a href="#">D</a>	<a href="#">E</a>	<a href="#">F</a>	<a href="#">G</a>	<a href="#">H</a>	<a href="#">I</a>	<a href="#">J</a>	<a href="#">K</a>	<a href="#">L</a>	<a href="#">M</a>	<a href="#">N</a>	<a href="#">O</a>	<a href="#">P</a>
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#### A

- *AAF*
    - [AAF 1 1](#), Advanced Authoring Format (AAF), Version 1.1
  - *AAC*
    - [AAC MP2](#), Advanced Audio Coding, MPEG-2
    - [AAC ADIF](#), Advanced Audio Coding, MPEG-2, Audio Data Interchange Format
    - [AAC MP4](#), Advanced Audio Coding, MPEG-4
    - [AAC MP4 LC](#), AAC (MPEG-4) Low Complexity Object
    - [MP4 FF 2 AAC](#), MPEG-4 File Format, V.2, with Advanced Audio Coding
    - [QTA AAC](#), QuickTime Audio, AAC Codec
  - *AC-3*
    - [AC-3 A](#), AC-3 Compressed Audio (Dolby Digital), Revision A
  - *AES3*
    - [AES3](#), AES3, Digital Audio Interface Format
    - [AES3 SMPTE](#), AES3 Digital Audio Interface, SMPTE Extensions
  - *AIFF*
    - [AIFF](#), Audio Interchange File Format
    - [AIFF LPCM](#), AIFF File Format with LPCM Audio
  - *A-Law*
    - [A-Law](#), A-Law Compressed Sound Format
  - *AMR*
    - [AMR](#), Adaptive Multi-Rate Speech Codec
-

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## Main Page

From Archivematica

### What is Archivematica?

Archivematica is a comprehensive [digital preservation](#) system. Archivematica uses a [micro-services](#) design pattern to provide an integrated suite of free and open-source tools that allows users to process digital objects from ingest to access in compliance with the ISO-OAIS functional model.

Users monitor and control the micro-services via a web-based dashboard. Archivematica uses METS, PREMIS, Dublin Core and other best practice metadata standards. Archivematica implements [media type preservation plans](#) based on an analysis of the [significant characteristics](#) of file formats.

The [overview](#) section provides a detailed description of Archivematica's functionality and technical architecture. [This screencast](#) gives a demo of the Archivematica 0.7.1-alpha release.



Downl

- Rel



Docun

- use
- scr




Develo

- Dev
- Dis



Twitte

What pe  
Archiv



Ingest
Archival storage
Preservation planning

Submission Information Package	UUID	Ingest start time	
📁 Special_projects	db720a77-657f-4272-8121-f3311bc7a48d	2011-06-16 14:23	🔍 ⚠️
Micro-Service: Appraise SIP for submission [?]		Requires approval	🔍 🗑️ ⏪ ⏩
Micro-Service: Set file permissions		Completed successfully	🔍
Micro-Service: Create Dublin Core template		Completed successfully	🔍
Micro-Service: Remove thumbs.db files		Completed successfully	🔍
Micro-Service: Verify metadata directory checksums		Completed successfully	🔍
Micro-Service: Assign file UUIDs and checksums		Completed successfully	🔍
Micro-Service: Verify SIP compliance		Completed successfully	🔍
Micro-Service: Create SIP backup		Completed successfully	🔍
🟢 Planning_Projects-jul-dec-94	23c49801-bf57-43e1-9110-2aa0d32ec03d	2011-06-16 13:55	
🔴 Planning Projects-Jan-Jun-94	11c3ebd8-b2d3-49b7-a393-9c7bd8009cc7	2011-06-16 13:50	
🔵 Zoning hearings	cf7aa7a2-b0be-413f-8900-66c7259abb85	2011-06-16 13:49	

Archivematica 0.7.1-alpha Dashboard 🔍



## Media type preservation plans

Media type	File formats	Preservation format(s)	Access format(s)	Normalization tool
Audio	AC3, AIFF, MP3, WAV, WMA	WAVE (LPCM)	MP3	FFmpeg
Email	PST	MBOX	MBOX	readpst
Office Open XML	DOCX, PPTX, XLSX	Original format	PDF for PPTX	OpenOffice
Plain text	TXT	Original format	Original format	None
Portable Document Format	PDF	PDF/A	Original format	Ghostscript
Presentation files	PPT	Original format	PDF	OpenOffice
Raster images	BMP, GIF, JPG, JP2*, PCT, PNG*, PSD, TIFF, TGA	Uncompressed TIFF	JPEG	ImageMagick
Raw camera files/Digital Negative format**	3FR, ARW, CR2, CRW, DCR, DNG, ERF, KDC, MRW, NEF, ORF, PEF, RAF, RAW, X3F	Original format	JPEG	ImageMagick/UFRaw
Spreadsheets	XLS	Original format	Original format	OpenOffice
Vector images	AI, EPS, SVG	SVG	PDF	Inkscape
Video	AVI, FLV, MOV, MPEG-1, MPEG-2, MPEG-4, SWF, WMV	FFV1/LPCM in MKV	MPEG-1	FFmpeg
Word processing files	DOC, WPD, RTF	<ul style="list-style-type: none"> <li>■ ODF (WPD and RTF)</li> <li>■ Original format (DOC)</li> </ul>	PDF	OpenOffice

■ (\*) PNG and JPEG2000 are not normalized to a preservation format

■ (\*\*) in development



digital audio capture standards for preservation



Search

About 2,270,000 results (0.19 seconds)

Everything

[PDF] [Capturing Analog Sound for Digital Preservation:](#)

[www.clir.org/pubs/reports/pub137/pub137.pdf](http://www.clir.org/pubs/reports/pub137/pub137.pdf)

Images

File Format: PDF/Adobe Acrobat - Quick View

Maps

study and report on the state of **sound recording preservation** in the United ..... on March 10–11, 2006; the topic at these sessions was **digital file standards** ...

Videos

News

[PDF] [The State of Recorded Sound Preservation in the United States:](#)

[www.clir.org/pubs/reports/pub148/pub148.pdf](http://www.clir.org/pubs/reports/pub148/pub148.pdf)

Shopping

File Format: PDF/Adobe Acrobat

More

**Digital preservation**—United States. 4. **Sound** ... The paper in this publication m

[Preservation of Audio Materials](#)

[cool.conservation-us.org/bytopic/audio/](http://cool.conservation-us.org/bytopic/audio/)

Nashville, TN

Change location

Jump to [Digital Audio](#): BCR's Collaborati chapter seven specifically addresses Au **standards** related to **digital audio prese**

All results

Related searches

[PDF] [GUIDELINES FOR THE CREA](#)

[www.carli.illinois.edu/mem-prod/.../guide](http://www.carli.illinois.edu/mem-prod/.../guide)

More search tools

File Format: PDF/Adobe Acrobat - Quick V

Nov 1, 2009 – There are several **standar**

commercial audio ... and bit-depth of cap

[PDF] [Capturing Analog Sound for I](#)

[www.loc.gov/rr/record/nrpb/pub137.pdf](http://www.loc.gov/rr/record/nrpb/pub137.pdf)

File Format: PDF/Adobe Acrobat - Quick V

study and report on the state of **sound re**

March 10–11, 2006; the topic at these se



digital video capture standards for preservation



Search

About 2,500,000 results (0.24 seconds)

Everything

[Video Preservation](#)

[cool.conservation-us.org/bytopic/video/](http://cool.conservation-us.org/bytopic/video/) [+1]

Images

Jul 23, 2011 – **Digital Video**: Guides, Blogs, Books & Articles, Projects & Initiatives, Formats & **Standards** Organizations Concerned with Video **Preservation** ...

Maps

Videos

[Digital tools and techniques for video migration - Video Preservatio...](#)

[videopreservation.conservation-us.org/dig\\_mig/index.html](http://videopreservation.conservation-us.org/dig_mig/index.html)

News

There are several method for **preserving** video. This section covers the **capture** of historic video output using a **digital video capture** card or external analog to ...

Shopping

More

[Preserving Digital Video | Disruptive Library Technology Jester](#)

[dljt.org/article/preserving-digital-video/](http://dljt.org/article/preserving-digital-video/)



by Peter Murray - More by Peter Murray

Apr 8, 2008 – I think these are pretty sound **requirements**, but I'm looking for feedback. In particular ... Guidance on the **preservation** of **digital video** should, by necessity, change over time. [ ... **Audio/Video Capture** and **Management**. (2002) ...

Nashville, TN  
Change location

All results

Related searches

[Digital Video Preservation: Further Challenges for Preserving Digi...](#)

[siarchives.si.edu/.../digital-video-preservation-further-challenges-pres...](http://siarchives.si.edu/.../digital-video-preservation-further-challenges-pres...)

More search tools

Aug 16, 2011 – While innovative **preservation** strategies and technical **standards** developed for digital imaging and sound certainly apply to **digital video**, ...

[DV Preservation: Data or Video? | AVPreserve](#)

[www.avpreserve.com/dvanalyzer/dv-preservation-data-or-video/](http://www.avpreserve.com/dvanalyzer/dv-preservation-data-or-video/)

Dec 2, 2009 – **Digital Tape Preservation** Strategy: **Preserving Data or Video?** ... the time and date of the **recording** device, camera and lens settings, closed captioning data, information on audio specification, **video standards**, the relationship ...

# New Roles for New Times:

## Digital Curation for Preservation

March 2011

Tyler Walters  
Katherine Skinner





# **CODE OF BEST PRACTICES IN FAIR USE FOR ACADEMIC AND RESEARCH LIBRARIES**

**JANUARY 2012**



# Storage Needs

Original Color Film	
35mm	50 MB
120 square	80 MB
120 6x4.5	60 MB
120 6x9	90 MB
4x5	135 MB
8x10	240 MB



# Bit-level, Content, and Format Preservation

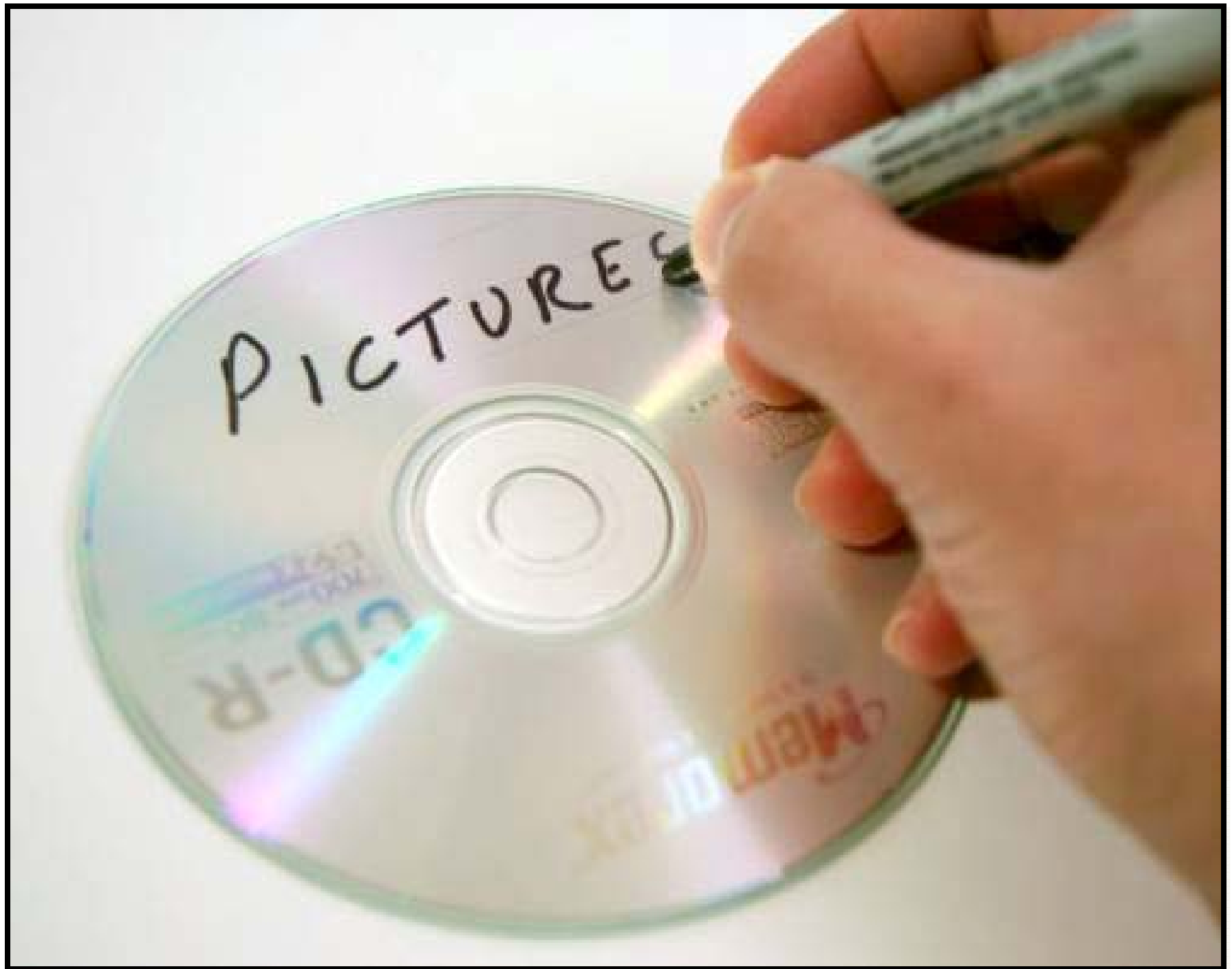
- Store
- Refresh
- Migrate
  - LC's Sustainability Formats
- Emulate
  - mimeTypeypes
  - Pronom, Global Digital Format Registry
- Encapsulation
- Preserve the Technology
- Digital Forensics
- “3-3-3” Strategy



# Preservation Infrastructure Strategies

- Redundancy
- Disaster recovery planning
- Diversify funding sources
- Document activities
- Maintain and grow skill sets and knowledge bases
- Policies, Policies, Policies
- Planning, Planning, Planning...
- Saving for a “Rainy Day”









**Amazon S3**■ **Amazon S3 Overview**

- [FAQs](#)
- [Pricing](#)
- [Amazon S3 SLA](#)

**Developer Resources**

- [Getting Started Guide](#)
- [AWS Management Console](#)
- [Documentation](#)
- [Release Notes](#)
- [Sample Code & Libraries](#)
- [Developer Tools](#)
- [Articles & Tutorials](#)
- [Community Forum](#)

**Not a Developer?**

Looking for a consumer or business storage solution?

- [Search for consumer storage solutions built on Amazon S3.](#)
- [Search for business storage solutions built on Amazon S3.](#)

## Amazon Simple Storage Service (Amazon S3)

Amazon S3 is storage for the Internet. It is designed to make web-scale computing easier for developers.

Amazon S3 provides a simple web services interface that can be used to store and retrieve any amount of data, at any time, from anywhere on the web. It gives any developer access to the same highly scalable, reliable, secure, fast, inexpensive infrastructure that Amazon uses to run its own global network of web sites. The service aims to maximize benefits of scale and to pass those benefits on to developers.

Easy to sign up,  
pay only for what you use

[Sign Up Now](#) 

This page contains the following categories of information. Click to jump down:

- ↓ [Amazon S3 Functionality](#)
- ↓ [Protecting Your Data](#)
- ↓ [Pricing](#)
- ↓ [Getting Started with Amazon S3](#)
- ↓ [Transferring Large Amounts of Data](#)
- ↓ [Common Use Cases](#)
- ↓ [Resources](#)
- ↓ [Amazon S3 Design Requirements](#)
- ↓ [Intended Usage and Restrictions](#)

### Amazon S3 Functionality

Amazon S3 is intentionally built with a minimal feature set.

- Write, read, and delete objects containing from 1 byte to 5 terabytes of data each. The number of objects you can store is unlimited.
- Each object is stored in a bucket and retrieved via a unique, developer-assigned key.
- A bucket can be stored in one of several Regions. You can choose a Region to optimize for latency, minimize costs, or address regulatory requirements. Amazon S3 is currently available in the US Standard, EU (Ireland), US West (Northern California), Asia Pacific (Singapore), Asia Pacific (Tokyo) and GovCloud (US) Regions. The US Standard Region automatically routes requests to facilities in Northern Virginia or the Pacific Northwest using network maps.
- Objects stored in a Region never leave the Region unless you transfer them out. For example, objects stored in the EU (Ireland) Region never leave the EU.
- Authentication mechanisms are provided to ensure that data is kept secure from unauthorized access. Objects can be made private or public, and rights can be granted to specific users.
- Options for secure data upload/download and encryption of data at rest are provided for additional data

*"A place for everything, everything in its place, and seven secure copies."*

The Digital Ben Franklin



THE COOPERATIVE

HOW IT WORKS

RESOURCES

HOW TO JOIN

CONTACT US

PRESERVED COLLECTION

## Georgia Tech Photograph Collection

The collection includes more than 5,400 images that document the institution's rich history. These scanned images are stored as JPG and TIFF files in the Archives' instance of DSpace (viewable at [Georgia Tech History Digital Portal](#)).



Search

### UPCOMING EVENTS

Katherine Skinner  
[Community-sourcing Collections Care](#)  
Digital Directions 2012  
Boston Massachusetts, June 13-15, 2012

Katherine Skinner, Matt Schultz & Bill Donovan  
[Providing the ETDs of Today to the Researchers of Tomorrow](#)  
USetA 2012  
Boston Massachusetts, June 13-15, 2012

### RECENT PUBLICATIONS

Gail McMillan, Matt Schultz, and Katherine Skinner, [Digital Preservation, SPEC Kit 325](#), Association of Research Libraries, October 2011.

Emily Gore and Katherine Skinner, [The MetaArchive Cooperative: Chronicles in Distributed Digital Preservation](#), 2010 Conference Proceedings from US Workshop on Roadmap for Digital Preservation Interoperability Framework, ACM Digital Library, October 2011.





(cc) kvitlauk

URL: Google Forms for Contact Info

<http://is.gd/DVNssh>