Web Archiving for Music Librarians

Kent Underwood
New York University
kent.underwood@nyu.edu

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Definitions

What is web archiving?

- Static snapshots of websites
- Preserved in a digital repository
- “monographic” or “serial”

Definitions

- Archive
- Library
- Records
- Papers
- Original order

Definitions (cont.)

- Webpage
- Website
- Web (“the”)
- Internet

Definitions

Web archives, not “web archives”:

- Web caches
- Web-based collections of digitized analog originals
- Web-based collections of born-digital materials
- Hyperlink compilations

True "Web Archive"

- Contains copies of websites as archival objects unto themselves
- Treats websites as historical documents
- Snapshots preserve the contents, appearance, and behavior of each website as it existed at particular points in time

Example

New York University Archive of Contemporary Composers' Websites

(archive-it.org)

Angélica Negrón

The Conundrum of Web Archiving

How can static snapshots preserve a dynamic system?

(its content, appearance, and behavior)?

Why archive the web?

- To preserve historically important material for posterity

- The WWW is unstable

Types of Websites of Interest to Music History

- Composers
- Performers
- Ensembles
- Performing Venues
- Festivals
- Educational institutions
- Teachers
- Agents
- Publishers
- Record Companies
- Fans
- Critics
- Historians

Component analysis of 200 composers' websites

• Biography	95%
• List of compositions	92%
• List of recordings	84%
• Portrait photos	90%
• Calendar of events	69%
• Audio recordings	93%
• Scores (sale, perusal, download)	58%
• Social media	39%
• "Web spheres"	24%

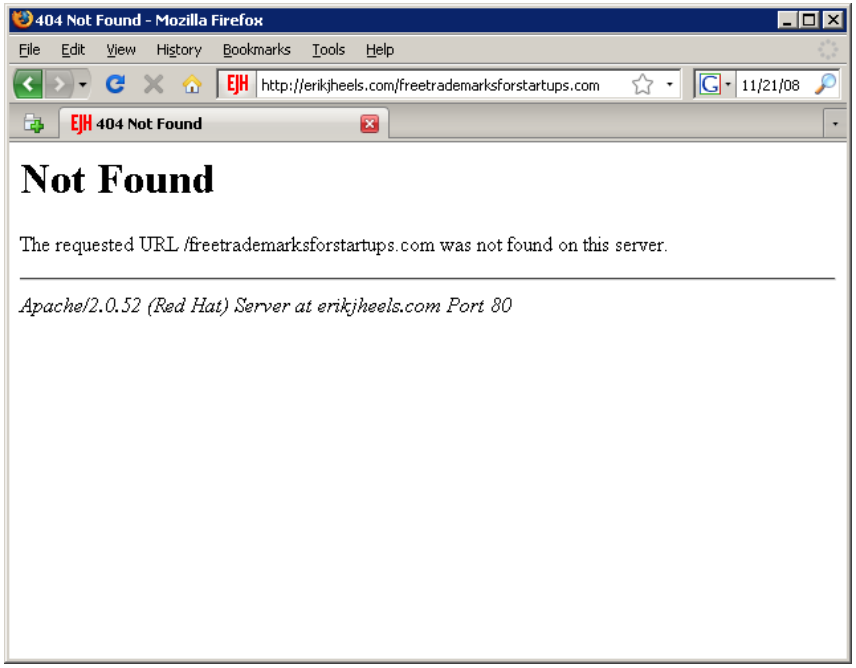
The Web is Unstable!

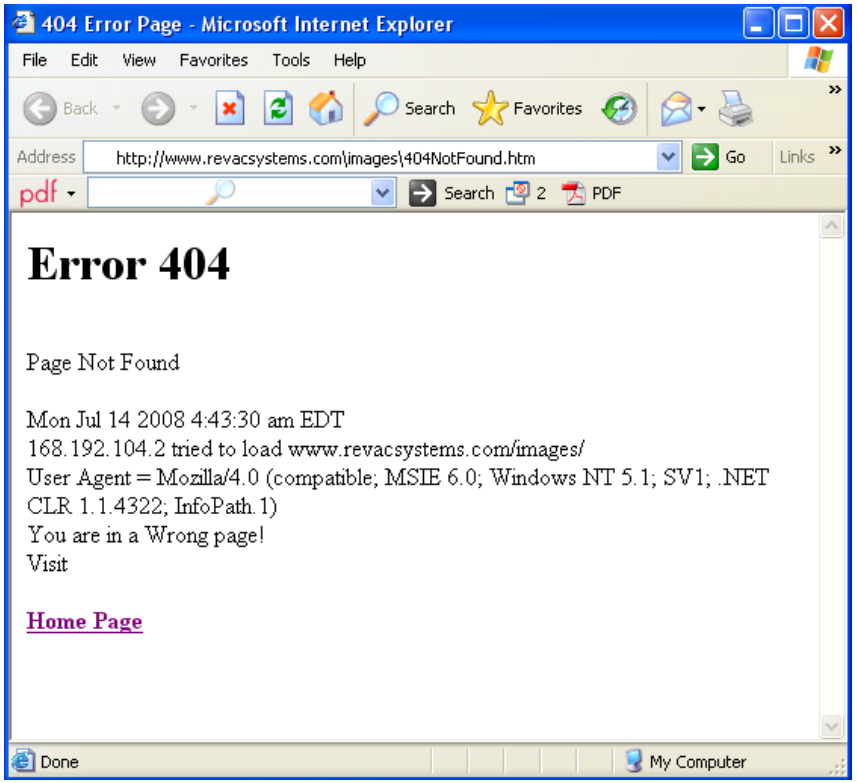
Modes of death and decay:

Link rot

Updating

The Web is unstable!





How unstable is the web?

What is the average lifespan of a webpage?

(Link rot + updating)

44-100 days

How unstable is the Web?

What percentage of the entire WWW is the same as it was a year ago?

20% same

40% changed

40% disappeared

Link Rot Vaccines

WebCite

http://www.webcitation.org/

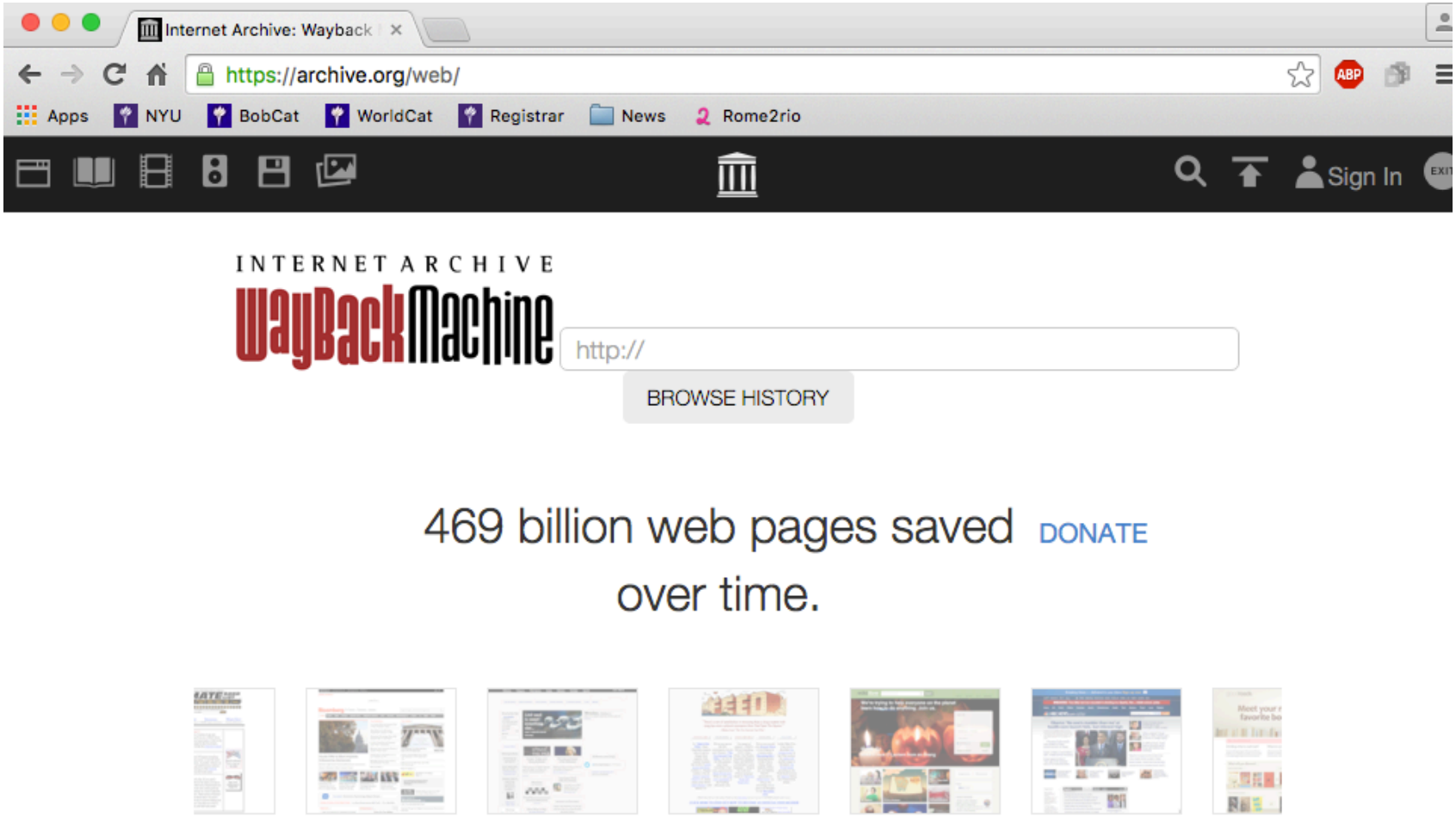
SavePageNow

https://archive.org/web/

But isn't the WWW archiving itself?

- What about browser caches?

- What about the Wayback Machine?



* As of March 4, 2016. (466 billion on March 1).

Passive vs. Active Curation

"Wayback Machine"

- Automatic process
- Software robot
- Broadly selective but still not exhaustive
- Passive curation

"Archive-It"

- Manual process
- Human being
- Very selective
- Active curation

Benefits of active Web archiving

- Curators (instead of a robot) can apply their skills and expertise to:
  - Selection
  - Organization
  - Description
  - Management
- Passive and active are complementary

Brief History of Web Archiving

6 August 1991

First website

Tim Berners-Lee & Robert Cailliau

(It's been archived!)

Brief History of Web Archiving

1993

Mosaic

The first commercial web browser

Brief History of Web Archiving

1994

Web crawlers

(foundational technology for Web archiving)

Brief History of Web Archiving

1995

Amazoncom

MP3 audio

Brief History of Web Archiving

1996

Internet Archive founded

Internet Archive-Smithsonian collaboration to archive websites of the 1996 presidential campaign

Brief History of Web Archiving

2001

Wayback Machine goes live

Wikipedia launches

Brief History of Web Archiving

2004

Estimated total number of websites:

51.6 million

Brief History of Web Archiving

2006

Archive-It Partners program launches

Brief History of Web Archiving

2009

Yahoo discontinues Geocities service

Internet Archive steps in to save its history

Brief History of Web Archiving

2014

Estimated total number of websites:

1 billion

(4-fold increase since 2004)

Web Archiving Projects in Music

- L'institut national de l'audiovisuel (INA)
- Netherlands Institute for Sound and Vision
- British Library
- National Library of New Zealand
- University of Texas. Tejano and Conjunto
- Curtis Institute Social Networks
- Oklahoma Music Hall of Fame & Jazz Hall of Fame
- "Borrow Direct" Libraries' Contemporary Composers Web Archive
- NYU Archive of Contemporary Composers' Websites

Technological Components

- Specialized software and hardware
- Web Archiving is a type of digital archiving
- Collaboration between curators and IT within the library
- Partnering outside the institution is common

Software Tools

Web archiving crawler

- Makes a "3D" scan of a live website
- Copies both the content and relational data
- Reconstitutes the site as a simulacrum, frozen in time
- Saves and stores the copy in a digital repository

Archive-It

- Both a utility and partnership program
- Developed and supported by the Internet Archive
- Adopted by institutions both large and small
- Subscription fees based on data storage
- Integrated suite of tools & services
- De facto national Web archive for the USA

Other Web archiving tools/services

- **Web Curator Tool** (Britain, New Zealand)
- **Archivethe.net** (Internet Memory Foundation)
- **Netarchivesuite** (Denmark, Austria)
- **California Digital Library** (defunct 2015)

Web Archiving Organizations

- Internet Memory Foundation
- International Internet Preservation Consortium (IIPC)

Curating a Web Archive: Planning

- Basic theme
  - Immediate goals
  - Scalability
  - Sustainability
- Models to emulate
- Collection Development Policy Statement
  - Standard best practice
  - ALA & IIPC Guidelines

Collection Development Policy Statement

- Name
- Summary Description
- History
- Audience & potential users (near- & short-term)
- Scope & boundaries (inclusions, exclusions)
- Relationships to other collections
- Hosting
- Quality assurance procedures
- Conditions for access and use

Curating a Web Archive: Website Component Analysis

- What are the constituent elements?
  - Text, images, audio, video, etc.
- Private/self administered vs. organizational
- Non-commercial vs. commercial
- Freely accessible vs. password
- Internal vs. imported content
- "Web spheres"

Web Spheres

- Contextual relationships to other sites and to the Web at large
- Authorial (hyperlink compilations)
- Curatorial (informed by curator's educated knowledge and understanding)
- New and more expansive approach to provenance

Curating a Web Archive: Outreach

- Contact site authors
  - Explain project
  - Solicit their cooperation
- Not mandatory but advisable
  - Ethical
  - Courteous
  - Fosters collegial relations generally between donors and archives

NYU Outreach Letter

- Explanation and rationale for project
- Asks permission (opt in)
- Questionnaire

Contemporary composers questionnaire

- Administer the site yourself (82% yes)
- Taking preservation measures already (33% yes)
- Frequency of additions?
- Frequency of deletions?
- Agree to override robots.txt script? (92% yes)

Technical Implementation (in Archive-It)

- Seeds
- Scoping
  - Informed by the website component analysis
- Crawl frequency
  - Informed by the website component analysis
  - Capture all important "editions"
  - Sweet spot between too few and too many crawls

Technical Implementation: Quality Assurance

- Goal: Capture and preserve the contents, appearance, and behavior of the site as it exists on the live Web
- Easier said than done
- NYARC guidelines

Quality Assurance Process

- Test crawls
- Crawl reports
- Human eye making side by side comparisons
- Document the process
- Assume and plan for QA to be ongoing

Internet Archive's "Five Challenges"

1. Javascript navigation functions
2. Recorded media
3. Password protection
4. Interactive databases and forms
5. Robots.txt scripts

Web Archiving and Copyright

- "Original works of authorship, fixed in a tangible medium of expression" (US Code)
- Is a website a protectable "work"?
- Copyright Office says yes!

Is Web archiving "fair use"?

- Metaphysical certitude?
  - NO
- Nuanced calculations of risk tolerance and management?
  - YES
- Much depends on the type & content of site

Intellectual Property Best Practices

- Work with site authors/owners
- Work with intellectual property advisor to stay within your institution's comfort zon
- Obtain permission as much as possible
- Take-down (opt-out) policy as second line of defense

Access

- Potential levels of access
  - Open (identical to live Web)
  - Open-plus (includes walled-off material)
  - Open selective (targeted exclusions)
  - Restricted (material complete but user access limited)*
  - Dark storage (no access until expiration date)*

*adopt existing archival best practices

Discovery

- Finding aid ("landing page")

- Metadata
  - Collection level vs. Item level
  - Descriptive
  - Administrative
  - Technical

Metadata Schemes

- Dublin Core
  - Descriptive, Administrative, Technical
  - Collection-level & Item-level
  - Example: NYU Archive of Contemporary Composers' Websites
- MARC
  - Example: Borrow Direct Contemporary Composers Web Archive

What next?

What causes professional Web archivists anxiety?*

- Social media 79%
- Databases 74%
- Video 73%
- Interactive Media 56%
- Audio 45%
- Blogs 36%
- Art 17%

*2012 Internet Archive survey

What next?

- More powerful back-end tools (solutions to the "5 challenges")
- More powerful front-end tools (data & text mining)
- "Macro" coalescing with "micro" archiving (Niels Brügger)
- Music Encoding Initiative

What next?

MORE WEB ARCHIVING!

Composers
Performers
Ensembles
Performing Venues
Festivals
Educational Institutions
Teachers
Agents
Publishers
Record Companies
Fans
Critics
Historians

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