Less Code, More Product: Leveraging Open Source Technologies to Develop Digital Library Collections

Robert Cartolano, Stephen Davis, Carole Ann Fabian
Columbia University
April 13, 2015
Digital Preservation & Access

“Digital preservation is the active management of digital content over time to ensure ongoing access.”

Library of Congress

“Digital preservation is a challenge for all of society because we all benefit from reliable, authentic information now and into the future. Done well, all of society will reap the benefits of digital stewardship.”

Distributed Preservation & Access, Radical Collaboration

“Long-term preservation of digital information on a scale adequate for the demands of future research and scholarship will require a deep infrastructure capable of supporting a distributed system of digital archives.”

"Preserving Digital Information“

"Conditions in technology, economics, and expanding service requirements demand a more radical approach to collaboration."

"Advancing From Kumbaya to Radical Collaboration: Redefining the Future Research Library"
Strategic Challenges

- **Organization** – local and distributed
- **Technical Infrastructure** – durable, interoperable, flexible
- **Collections** – collect, aggregate, manage, discover and deliver, over time
Approach

• **Close Partnerships** – develop and sustain technology platforms over time

• **Strategic Investment** – local and shared staff, infrastructure, services
The Five Opens

• Open Code – sustainable platforms
• Open Data Standards – manage over time
• Open API/Protocols – foster interoperability
• Open Communities – go further together
• Open License – share knowledge broadly

Based on Mara Hancock’s Three Opens
“Open” Fosters Preservation & Access

Digital preservation and access is greatly fostered by adopting the “Five Opens” and partnering to develop local and distributed systems.
Key Benefits of Open

• **Less Code** – Reduce local efforts, leverage community development

• **More Product** – build better services for today

• **Contribute** – local development, support entire community over time

• **Work together** – solve hard problems (e.g. interoperability, migration)
Columbia Strategic Investments

- **Fedora** – durable object repository
- **Blacklight** – common discovery layer
- **Hydra** – building, sharing apps & tools
- Multiple data centers
- Columbia private network
- Risk-averse vendor technologies
Implementing

…. Less Code MORE PRODUCT!
Columbia Digital Collections Scope

- Digitized special & archival collections
- Born-digital content
- Institutional repository content
- Research data sets
- Numeric data files
- *Learning objects (to come)*
Some Pre-2014 Standalone Special Collections Projects

- Papers of John Jay
- Architectural Vignettes
- Japanese Bunraku Puppet Theater
- NYC Real Estate Brochures
- Omeka Online Exhibitions
- NYC Oral Histories
- Lindquist Native American Photos
- Herbert Lehman Papers
- Community Service Society Photos
- Chinese Paper Gods
- Joseph Urban Stage Models
- Human Rights Web Archive
But under the surface ...
Challenges

- Unique, custom code for each project
- Deprecated and unsupported software versions
- No longer best “best practices”
- Passé “state of the art”
- Divergent metadata and content models
- Maintenance and security problems
Consolidated Digital Collections Infrastructure

- SOLR 4.7
- Hydra 7
- Blacklight 5.5

FEDORA 3.8.1

- 4-Node EMC Isilon Cluster (on campus) 384 TB
- EMC Isilon Cluster (Syracuse, NY) 384 TB
- Off-site Tape System (Indiana U.)

Digital Collections Viewer

- Durst Subsite
- Ford IFP Subsite
- Other Subsites
  - Exhibitions
- Staff Collections Viewer

Columbia University Libraries / Information Services
Consolidated Digital Collections Infrastructure
Benefits

• Common code base, release versions
• Easier software upgrades and bug fixes
• Faster implementation of new projects
• New features shared across projects
• Better asset management
• Easier metadata curation
• Ability to benefit from - and contribute to - other institutions’ work
Less Code

Result of moving Columbia DL applications from custom code to Hydra framework:

ca. 10,000 lines of local code removed so far

And many 10s of thousands as we retire legacy sites
More Product

Sample DL project development time, 1.5 FTE developers:

5-6 weeks

New DL project development time for comparable project, 1.5 FTE developers:

2-3 days
Staff Collection Viewer, 300,000+ items

Fedora Staff Collection Viewer 1.1

You may browse via the facets on the left or enter keywords above to search the entire repository.

The Fedora Staff Collection Viewer (SCV) provides an administrative window into CUL's digital library and preservation assets. Its primary purpose is to allow technical and curatorial staff to identify and view preserved content.

The SCV serves up content from our Fedora Digital Repository using the Blacklight open source software product, which has been configured to accommodate searching of MODS-formatted metadata and the display of single and multipart digital items.

For more information, see:

- Fedora Staff Collection Viewer Wiki

For questions not answered here, please email: scv@libraries.cul.columbia.edu

The Fedora Staff Collection Viewer was developed by Libraries Digital Program Division. A beta version was launched in March 2011; version 1.0 in April 2011.
Less Code, More Graph
“I don’t collect books out of nostalgia, but out of a love of information and history”

Seymour B. Durst
The Collection

- **Book-like materials**
  - Books & Pamphlets 8,676
  - Landbooks 30
  - Serials 519

- **Visual materials**
  - Photographs 3,000
  - Thomas Nast Collection 1,200
  - Lantern & 35mm slides 75
  - Postcards 22,594

- **Maps**
  - Oversize maps 450
  - Bound & folded maps, and guides 150

- **Ephemeral materials**
  - Brochures, programs, menus, etc 1,091

**TOTAL OBJECTS: 36,592**
Durst project goals

① Support *planning*
② Add *capacity*
③ Implement *projects* to ensure broad access:

• Catalog & house the collection
• Digitize the public domain content
• Provide digital access
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Add capacity
Project: data development

9,839 bibliographic records
  • 3,151 copy
  • 6,688 original

23,780 metadata records
  • 23,780 geo-location
  • 15,153 subject headings
Project: digitization

- Acceptable copy: 1,559
- Internet Archive: 2,997
- Backstage: 843
- CUL-PRD: 368
- Avery contract photographer: 87

CUL Project digitized: 5,852
CUNY digitized 14,559

TOTAL digitized objects 20,421
LETTER
FROM THE
Secretary of War,
TO THE
CHAIRMAN OF THE COMMITTEE,
Appointed on the 9th of December last,
ON SO MUCH OF THE
SPEECH OF THE PRESIDENT,
AS RELATES TO
“A System of National Defence, Commensurate with our Resources, and the situation of our Country.”

13th February, 1800.
Ordered to lie on the Table.

schools; consequently no charge has been made in the estimate for these objects.

If, therefore, we oppose the sums thus annually liberated to the annual salary of the professors and original cost of the buildings, whichever of the plans is adopted, we shall find the measure proposed, viewed merely in the light of an operation of finance, to result in a considerable saving to the United States.

An individual would think it a good bargain to receive twenty-five thousand two hundred and ninety-one dollars, annually, the sum liberate, and to give in lieu thereof ten thousand four hundred and sixty-fix dollars, annually, the salary of the professors, and a principal sum equal to the cost of the buildings. In other words, he would receive fourteen thousand seven hundred and twenty-five dollars, annually, which is equivalent at five per cent, to a capital or principal of two hundred and forty-five thousand four hundred and sixteen dollars, a sum greatly exceeding the estimated cost of the buildings upon either estimate.

The committee while they perceive that the fund which it is now proposed to save, is to yield a future harvest, will at the same time, judiciously appreciate the various beneficial consequences which will result from the immediate adoption, and the saving of inconvenience and danger to be apprehended from a postponement of the measure.

Whether our country is to be plunged into a war or enjoy for a length of time the blessings of peace and interior tranquility, whether the pernicious events which have afflicted Europe, and in their progress threaten the United States are to issue into a fertile field of things, whether the blessings of peace and the dispensations which the benevolent relations among the transatlantic powers, are to take place; or hostilities shall be continued protracted and extended beyond their present limits, in either view it is equally an object of policy and wisdom to improve our measures of defence, and give as much perfection as possible to our establishments as may be conceived essential to the maintenance of our rights and security from insult.

The unavoidable collisions growing out of trade and the reciprocal restrictions of great commercial states; the apprehensions and jealousies mutual and protecting contiguous territory; the inefficacy of religion and morality to control the passions of men, or the interests and ambition of nations; the impossibility at times, for governments to adjust their differences or preserve their rights without making sacrifices more to be dreaded than the hazards and calamities of war, all these considerations, illustrated by volumes of examples, reach the foundations of the axiom, Sit tus pacem para bellum.

And what time more proper to prepare the materials for war, than a time of peace, or more urgent than that in which a nation is threatened with war.

I have the honor to be,
With the greatest respect,

Your most obedient servant,

JAMES M. HENRY,
Secretary of War.

Harrison G. Otis, Esq.
Chairman of the Committee of Defence.
The Convenient Location of the Waldorf-Astoria
THE EMPIRE STATE BUILDING is the tallest structure in the world. Standing on the site of the famous old Waldorf-Astoria Hotel, at Fifth Avenue and 34th Street, it rises 1,250 feet from the street to the top of the mooring mast. In its construction, 60,000 tons of steel, 10,000,000 bricks and 17,000,000 feet of communication wire were used. Less than 20 months were required to erect this magnificent tribute to modern engineering. The glorious views from the windows of its twin observatories, 1,021 feet high, make it literally true that the entire city of New York lies at your feet.
FIFTH AVENUE AND 44TH STREET
1905

Save The Stores
Stop The Rent Increases

COMMERCIAL RENT CONTROL LAWS
COULD HAVE SAVED TYSON'S FIFTH AVENUE MARKET
AND LOST THE CITY'S TAX REVENUES
AND PLACES TO WORK

Fig. 4. Grand Central Depot, c. 1886. This photograph of the 42nd Street facade also shows the annex of 1885 along the western flank of the building.

Fig. 5. Train shed, Grand Central Depot, R.G. Hadfield, engineer. This 1873 view shows the arched ribbed shed shortly after opening. Note the horse-drawn cars at the right and the glass-and-metal curtain wall at the northern end.
Project: ensure broad access
Discovery pathways
Single record display


Physical Description: Monochromatic
Subjects: Interiors
          Wall Street (New York, N.Y.)
          National City Bank of New York
Format: postcards
Image palette

Pan/Zoom  Full Screen  Data Display  Citation
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<td></td>
<td>G.H. Buek &amp; Co</td>
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<tr>
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<td>Manhattan (New York, N.Y.) &gt; Pictorial works.</td>
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<td>books</td>
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<td>Lith. by G.H. Buek &amp; Co., N.Y.</td>
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<td>Includes watercolor illustrations of the Statue of Liberty, Trinity Church, New York Post Office, New York Life Insurance Building, Washington Memorial Arch, Union Square, Obelisk in Central Park, St. Patricks Cathedral, Union League Club, Washington Bridge, and Grant's Tomb.</td>
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<td>Avery Classics (Offsite) copy: Unbound</td>
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<td>Avery Classics (Offsite) copy: Pages for Feb. and Dec. wanting</td>
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<td>Avery Classics (Offsite) copy: From the library of Seymour Durst with his bookplate</td>
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<td>Online</td>
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<td>Catalog Record</td>
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Related content
Place-Based Discovery

- Biggert Architectural Vignettes
- New York Real Estate Brochure Collection
- Seymour B. Durst Old York Library
- Built Works Registry
The Robert Biggert Collection of Architectural Vignettes on Commercial Stationery was donated to the Avery Architectural and Fine Arts Library by Robert Biggert in honor of Lisa Ann Riveaux. This unique collection of printed ephemera contains over 1,300 items with architectural imagery spanning the dates 1850 to 1920, in more than 350 cities and towns in forty-five states, as well as the District of Columbia and U.S. possessions. The collection's billheads, letterheads, envelopes, checks, and business cards document the rise of the United States as an industrial nation, in often elaborate vignettes of factories, warehouses, mines, offices, stores, banks, and hotels.
Your search for **lancaster and "Pennsylvania" (state)** returned 4 hit(s)

**D. P. Locher & Son, Bankers (Check)**
- Company: D. P. Locher & Son, Bankers
- Medium: Check
- City/state: Lancaster, PA
- Date: 1870-1879
- Side: Recto
- Call no.: ava_biggeter_01374

**Reilly Bros. & Raub (Letter)**
- Company: Reilly Bros. & Raub
- Medium: Letter
- City/state: Lancaster, PA
- Date: 1936
- Side: Recto
- Call no.: ava_biggeter_01375

**Downey Bros. Spoke & Bending Co. (Bill)**
- Company: Downey Bros. Spoke & Bending Co.
- Medium: Bill
- City/state: Lancaster, PA
- Date: 1912
- Side: Recto
- Call no.: ava_biggeter_01697

**Reilly Bros. & Raub (Bill)**
- Company: Reilly Bros. & Raub

---

**LIMIT RESULTS**

**Cities/States**
- Lancaster, PA (4)

**Companies**
- Reilly Bros. & Raub (2)
- D. P. Locher & Son, Bankers (1)
- Downey Bros. Spoke & Bending Co. (1)

**States**
- Pennsylvania (4)

**Media**
- Bill (2)
- Check (1)
- Letter (1)

**Date**
- 1870-1879 (1)
- 1910-1919 (2)
- 1930-1939 (1)
The New York Real Estate Brochure Collection

Search the collection

Find building information, architects, floorplans, and more.

Search:  All Locations  Go

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About the Collection

The New York Real Estate Brochure Collection was donated to Avery Architectural & Fine Arts Library by Yale Robbins, Henry Robbins, and David Magier in 1986. The collection consists of over 9,200 advertising brochures, floor plans, price lists, and related materials that document the development of the city's real estate and architectural history.

News

Christopher Gray in the New York Times' Streetscapes writes about the NYRE Brochure Collection (August 26, 2010).

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NYRE Brochure Collection site receives the Worldwide Books Award for Electronic Resources

Read more >

Browse the collection

The Real Estate Brochure Collection is divided into places, such as buildings or...
locational data
**Brooklyn Heights - Cobble Hill**

**Neighborhood information**

**Name:** Brooklyn Heights - Cobble Hill  
**Borough:** Brooklyn  
**City:** New York

**Buildings in this neighborhood (38)**

Displaying neighborhoods 1 - 38 of 38

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<td><strong>135 Willow St.</strong></td>
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Map data ©2013 Google
ABOUT THE OLD YORK COLLECTION
The Seymour B. Durst Old York Library collection at the Avery Architectural & Fine Arts Library consists of more than 40,000 objects including historic photographs, maps, pamphlets, postcards, books, and New York City memorabilia from the 18th century to the 1980s. Learn More »

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Discovery: mapping interface
Discovery: neighborhood facet

- Todd Hill-Emerson Hill-Heartland Village-Lighthouse Hill
- Brooklyn Heights-Cobble Hill
- Manhattanville
- Charleston-Richmond Valley-Tottenville
- East Harlem North
- Fort Greene
- Morrisania-Melrose
- Washington Heights
- Chelsea
- Hamilton Heights
- Marble Hill-Inwood
- Clinton Hill
- East Harlem
- East Harlem South
- Financial District
- Flatlands
- Harlem
- Kow Gardens Hills
- Middle Village
- North Corona
Course integration

“History of Real Estate Development in New York City”

GSAPP – RED program
Summer session: 2012, 2013, 2014
~100 grad students each year

2014 summer course interactions:
- basic instruction session (90 students)
- reference interaction (67 students)
- research consultation (35 students)
Symposia

GSAPP CURE: The Center for Urban Real Estate

May 11, 2012
Megaprojects:
An Urban Planning and Development Conference

April 11, 2013
Mind the Gap:
Transit Lessons from New York and London

April 25, 2014
From Port to People:
Reinventing Urban Waterfronts
Publications

Plan of lower Manhattan.
A plan of the city of New York from an actual survey made by James Lyne.
New York: Charles Magnus, ca. 1800.
Seymour B. Durst Old York Library
Avery Architectural & Fine Arts Library, Columbia University

Bird’s eye perspective over Long Island City, Queens, Roosevelt Island, to midtown Manhattan.
Seymour B. Durst Old York Library
Avery Architectural & Fine Arts Library, Columbia University

South Street Seaport: a plan for a vital new historic center in Lower Manhattan. New York:
South Street Seaport Museum, ca. 1969.
Seymour B. Durst Old York Library
Avery Architectural & Fine Arts Library, Columbia University

The port of New York, proposals for redevelopment; comprehensive planning report.
Seymour B. Durst Old York Library
Avery Architectural & Fine Arts Library, Columbia University

Aerial view of the future site of Battery Park City.
Seymour B. Durst Old York Library
Avery Architectural & Fine Arts Library, Columbia University
Q & A
References


