Challenges and Opportunities in Customizing Library Repository User Interfaces

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Challenges and Opportunities in Customizing Library Repository User Interfaces

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Library As Publisher, Part Two: UX and UI for the Library's Digital Collections
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Hi! I’m Rachel.

I’m passionate about improving the user experience across our web presence.
Outline

Comparing Repositories

Challenges Impacting Repository UI

Opportunities for Improving Repository UI

Recap
Comparing Repositories
### Comparing repository features and user interfaces

<table>
<thead>
<tr>
<th>Out-of-the-Box Repositories</th>
<th>Open Source Repositories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td><strong>Advantages</strong></td>
</tr>
<tr>
<td>● “Ready” to go after installation</td>
<td>● Modular design through APIs</td>
</tr>
<tr>
<td>● Customer support exists</td>
<td>● Large development communities</td>
</tr>
<tr>
<td>● Discovery included</td>
<td>● Scalable, sustainable, and extensible</td>
</tr>
<tr>
<td>● Some handle 1 format type, but do it fairly well</td>
<td>● Handle any file format</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>● Limited APIs</td>
<td>● Steep learning curve</td>
</tr>
<tr>
<td>● Typically poor user interfaces</td>
<td>● Might need additional tools for discovery</td>
</tr>
<tr>
<td>● Not scalable or extensible</td>
<td></td>
</tr>
</tbody>
</table>
So many content types / formats

- Images
- Maps
- Text
- Articles
- Ebooks
- Dictionaries
- Papyrus
- Video

- Audio
- Theses and Dissertations
- Newspapers
- Finding Aids
- Bibliographic Materials
- Scrolls
- Data
- So many more...
Challenges Impacting Repository UI
Driving forces in digital scholarship

- Growing demand of digitized primary sources
- Researcher collaboration changes rapidly
- Lots of uncertainty and ambiguity around:
  - What future services might look like, and what tools are needed to support those services
  - Federal and state funding for grants, budgets, projects
- Longstanding norms in the library profession around privacy are being challenged
Driving forces in digital scholarship, cont.

- An increase in researchers’ potential audience
- Standards for scholars to be considered successful are evolving
  - Altmetrics, publication practices, public engagement, non-monograph projects, etc.
- Researchers want easy connections to other related resources

#FOMO
“Research tools need to be flexible enough so it ultimately does not matter whether historians access materials online or in person... it will become essential that they can seamlessly integrate tools for organizing, annotating, and analyzing primary source materials into their workflows.”

“Historians ... would like to have full text search of digitized books, archival finding aids, and non-textual sources ... as comprehensively as possible through their main discovery services. They would also like to have services that help them not only find some items in [response] to their query, but to ensure that they have been comprehensive in their research on a given topic.”

Archival context implies hierarchy

Archivists’ need for accuracy vs. User needs and expectations
Changes in platforms and tools

- DSpace
- CONTENTdm
- Greenstone
- Omeka
- Fedora
- Hydra
- Samvera
- Islandora
- Rosetta

- bePress
- Digital Commons
- Spotlight
- CollectionSpace
- Fulcrum
- Avalon
- Blacklight
- IIIF
- So many more...
“Old” digital collections

- The older the repository (repositories), the more complicated it is to keep the interfaces current, usable, and consistent
- Michigan’s digital library platform (DLXS) was created over 20 years
  - Focus was on being a production service to create digital collections
- Today, people have higher expectations of systems
  - Shouldn’t need training on how to use or navigate the interface - it should be intuitive and familiar
- Sometimes collections had more items added, but most became stagnant - the interfaces were never updated
- Challenges in migrating old content and features to a new system
Database of Twentieth Century American Poetry (AMPO20)

This database contains modern and contemporary American poetry from the early twentieth century to the present. It includes the works of most major poets of the twentieth century, beginning with the traditionalists, continuing through the American modernists represented by such poets as Wallace Stevens, and moving onward to the contemporary poetry of America’s 1990s. The broad coverage of Twentieth-Century American Poetry includes collected works and individual volumes of poetry from all of the major movements and schools of twentieth-century American poetry, including modernism, the New York School, the Chicago School, the Southern School, the Confessionals, the Beats, and the Black Mountain poets.

- **Simple Searches**: Single word and phrase searches throughout the entire AMPO20.
- **Proximity Searches**: Find the co-occurrence of two or three words or phrases.
- **Boolean Searches**: Find combinations of two or three words in a given paragraph or page.
- **Word Index**: Browse through lists of all unique words in the texts.
- **Citation Searches**: Identify works by author and title.
- **Browse**: Browse works by author and title.
- **About the AMPO20**: AMPO20 editorial policy, access restrictions, lists of authors, etc.

**UMDL Help**
Last content update April 7, 2000.

Example of a digital collection homepage and one of its search pages within the University of Michigan Digital Collections.
Example of a more modern interface of a digital collection homepage within the University of Michigan Digital Collections.

APIS (Advanced Papyrological Information System) at the University of Michigan is a “virtual library” that provides online access to our papyrological collection. Users are able to view digital images and detailed catalog records containing information on papyrus characteristics, corrections to published papyri, and replications.

APIS, funded in part by the National Endowment for the Humanities, grew from the digitization of papyrus collections from a consortium of universities, including Columbia, Duke, Yale, and Michigan in the early ‘90s, overseen by the American Society of Papyrologists. Though the APIS project no longer continues, the images and metadata created from this joint project are still maintained by the institutions involved and are available through Papyri.info. The University of Michigan Library continues to digitize papyri in our collection and add to the records available in our database.

- Copyright Policies
- Technical Specifications (including Database Template and DTD)
- The University of Michigan Papyrology Collection
- How to Find and Access Items
“...systems should be easy to learn, tolerant of errors, flexible, adaptable, and appropriate and effective for the task.”

“Large” digital collections

- Similarly, the bigger the repository (repositories) the more complicated it is to keep the interfaces current, usable, and consistent
- Hard to communicate size and scope to users through the interface
- Perhaps visualizations could help explain large amounts of data (collections, records, formats) to our users
- Discovery across collections is more challenging
## Collections sizes at Michigan

<table>
<thead>
<tr>
<th></th>
<th>Collections</th>
<th>Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>Images</td>
<td>107</td>
<td>1,490,236</td>
</tr>
<tr>
<td>Text</td>
<td>164</td>
<td>37,045,804</td>
</tr>
<tr>
<td>Finding Aids</td>
<td>8</td>
<td>6,338</td>
</tr>
<tr>
<td>Bibliographic &amp; Reference Collections</td>
<td>13</td>
<td>4,197,968</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>292</strong></td>
<td><strong>42,740,346</strong></td>
</tr>
</tbody>
</table>

Back to talking about format again...

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Opportunities for Improving Repository UI
Increase in UX support and user research

- Libraries are paying more attention to users’ motivations
  - Data-driven research and learning analytics
  - Assessment and demonstrating impact

- More UX librarians and UX departments are showing up in libraries
  - Support user research and usability on website and digital library projects → expanding to all applications integrated across a library’s web presence
  - Bring consistency and universal design principles to interfaces
  - Improve accessibility
“[Researchers] were frustrated by the lack of general uniformity of interface presentation related to search, both across types of materials and across databases. One researcher was bothered by a lack of standardization in presentation due to content being aggregated for multiple sources, noting that the variation can be disorienting.”

Search and discovery is improving

- Library discovery systems are providing more open tools and APIs, enabling libraries to customize or personalize their search experience for users
- Algorithms in search engines are becoming smarter, more intuitive, and feature rich
- Tools like Blacklight, a discovery platform framework, let libraries customize discovery interfaces
- More opportunities to improve discoverability across related items and collections
“...it is still necessary for historians to locate each collection independently. This lack of collocation and collection presents efficiency challenges and deepens scholars’ concerns about comprehensiveness. The anxiety over “missing something” was quite common across interviews, and historians often attributed this to the lack of comprehensive search tools for primary sources.”

Increase in cross-institutional partnerships

Just a few examples...

- Indiana University, Northwestern University
- Over 40 founding members
- Stanford University, University of Virginia, So many more...
- University of Virginia, So many more...
If you want to go fast, go alone.
If you want to go far, go together.

- African Proverb
“We need more user testing like this, especially from an accessibility standpoint, so we can build Sufia to be user friendly to implement and use.”

Mike Giarlo, in an email to Ben Howell, a University of Michigan Library’s User Experience and Accessibility Specialist, about his usability testing of an early version of Deep Blue Data with students and staff with disabilities.
Extensibility and providing just enough customization

How far should libraries should go in providing customizations to meet both stakeholder and user needs?

- Focus UI development on major user features that won’t go away anytime soon
- Build solutions that are flexible so systems and their components can evolve at different rates
  - This lets interfaces be more flexible and able to be changed more frequently in response to researcher’s needs
- Consider using format specific repositories to have more UI customizations
- Keep in mind the constraints on your environment
“Repositories need to be modular and extensible. We said these things years ago, but today there are different ways to achieve it. Applications need to be more adaptable and not constrained by system architecture unnecessarily.”

Deep Blue Data is a repository offered by the University of Michigan Library that provides access and preservation services for digital research data that were developed or used in the support of research activities at U-M.

https://deepblue.lib.umich.edu/data/
Fishrappr

- Browser for newspaper archives
- Available at https://github.com/mlibrary/fishrappr
- Developed for a particular project, but built so it can potentially be used for additional newspaper repositories
Recap
Recap

- Challenges in customizing user interfaces still exist and will continue to exist, but more solutions are being created and explored everyday
  - Better tools and platforms
  - Enhanced discovery
  - Growing interest in UX
  - Community sourced development projects
- It’s important to find balance between meeting user needs and meeting the needs of your environment
- Building tools that are extensive is critical to keeping your UI adaptable with rapid changes
Resources

https://doi-org.proxy.lib.umich.edu/10.1108/00242530310476689


Paul Alonso Gaona-García, David Martin-Moncunill, Carlos Enrique Montenegro-Marín, (2017) "Trends and challenges of visual search interfaces in 


NISO Framework Working Group with support from the Institute of Museum and Library Services, A Framework of Guidance for Building Good Digital 
Collections (Baltimore, MD: National Information Standards Organization (NISO), 2007).
Resources, cont.


Thank you!

Questions? Contact me!
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