CatalogWS Library Catalog as Versatile Discovery Platform

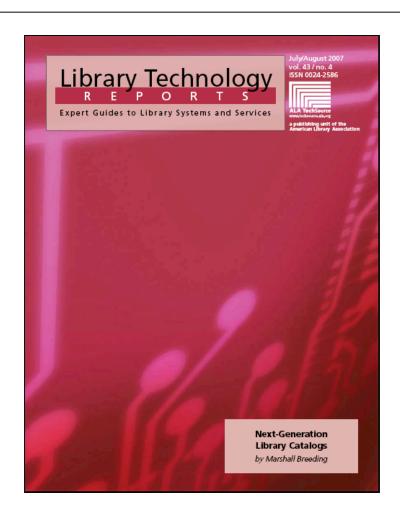
Tito Sierra and Joseph Ryan
Digital Library Initiatives
NCSU Libraries

Outline

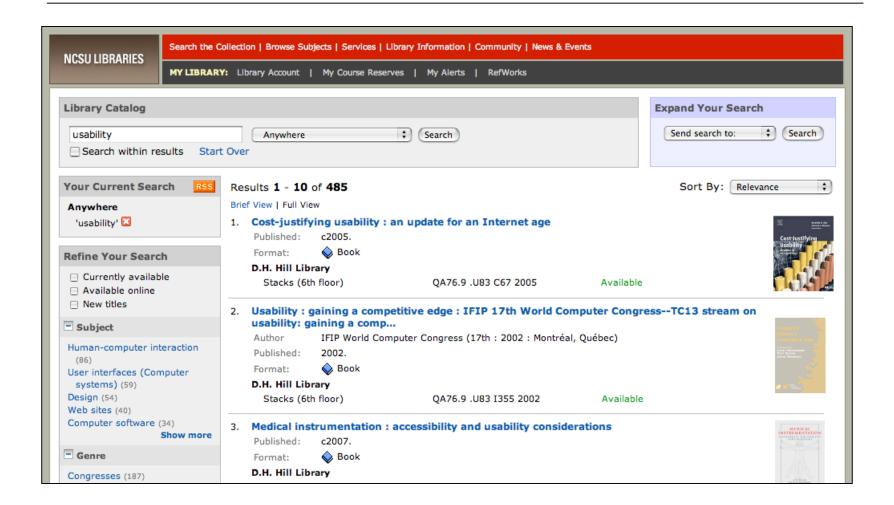
- Next Generation OPACs
- Catalog as Discovery Platform
- CatalogWS API
- CatalogWS Applications
- Catalog Research Testbed

Next Generation OPACs

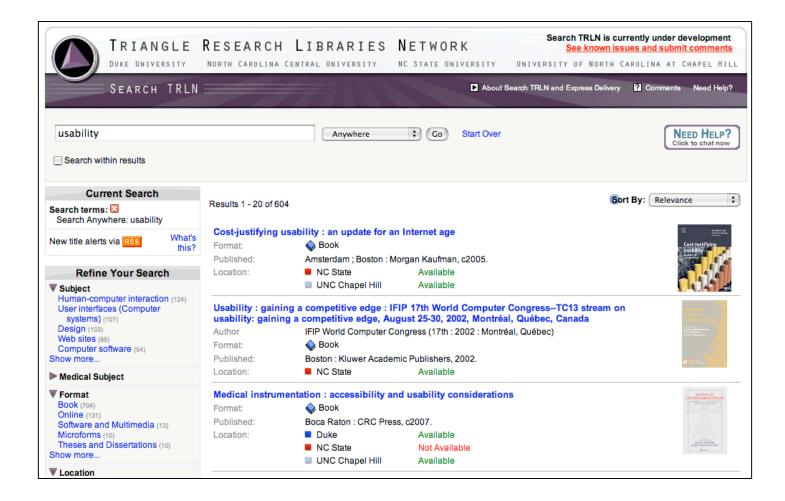
Library OPACs - Hot Topic



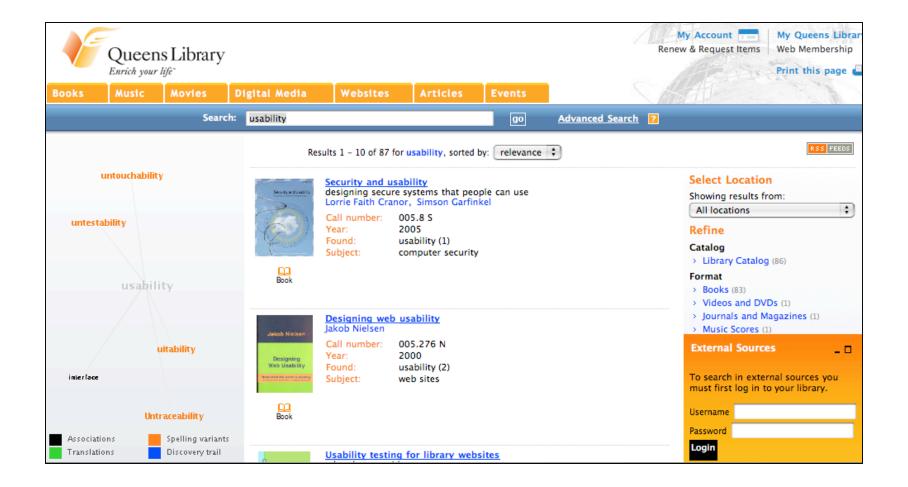
Examples - Endeca



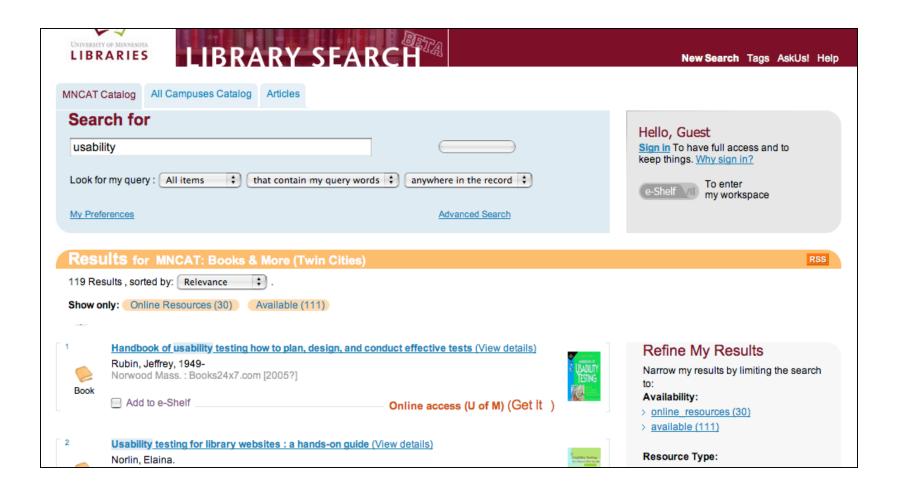
Examples - Endeca



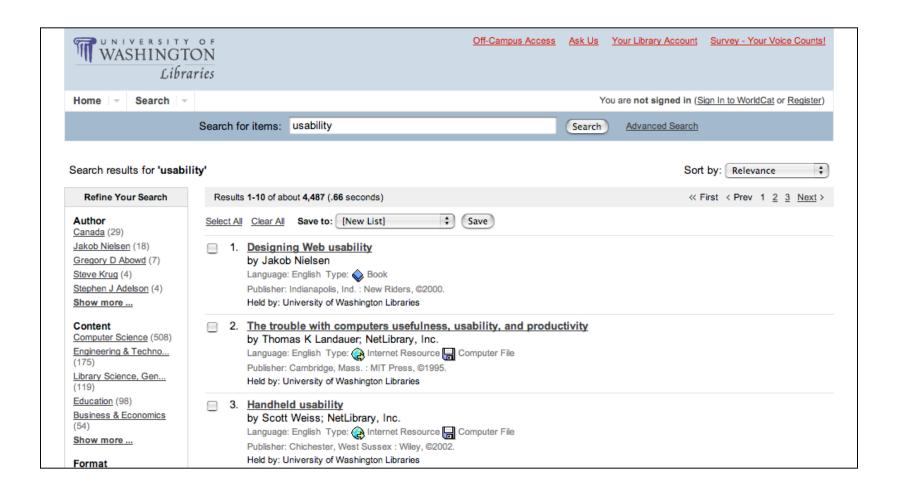
Examples - AquaBrowser



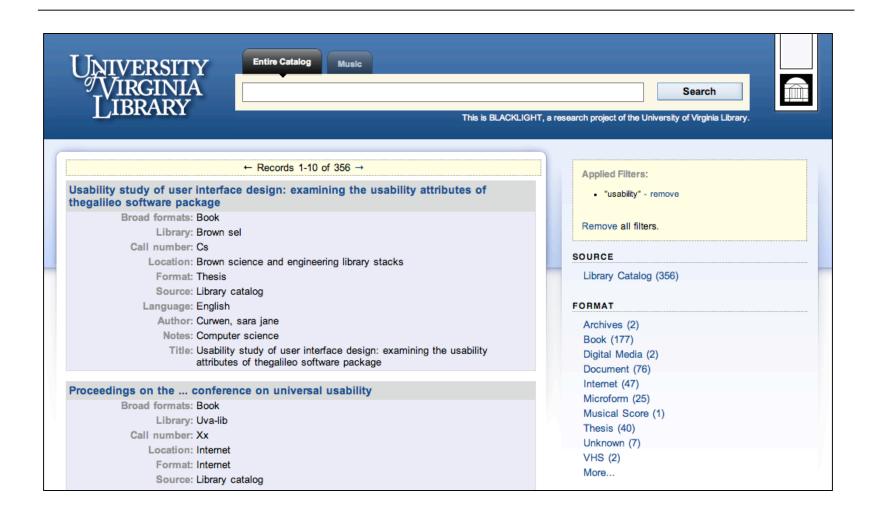
Examples - Primo



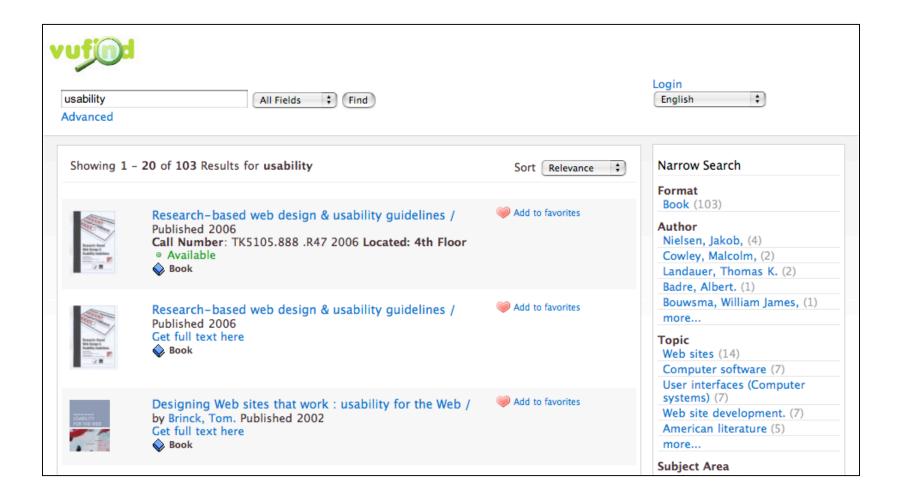
Examples - WorldCat Local



Examples - Solr-powered



Examples - Solr-powered



Next Generation Catalogs

- Modern search options
 - Relevance ranking
 - Faceted search
 - Tag/word clouds
- New content and functionality
 - User contributed content, social features
 - Enriched content (book covers, reviews)
 - Current awareness (RSS feeds)

Next Generation Catalogs

Current "next generation catalog" systems are largely focused on optimizing a single discovery context... the OPAC

Question...

Why should the discovery of cataloged library collections be limited to user interaction with a single catalog application?

Catalog as Discovery Platform

Platform?

- ... a "platform" is a system that can be reprogrammed and therefore customized by outside developers -- users -- and in that way, adapted to countless needs and niches that the platform's original developers could not have possibly contemplated, much less had time to accommodate.
- In contrast, an "application" is a system that cannot be reprogrammed by outside developers. It is a closed environment that does whatever its original developers intended it to do, and nothing more.
- Marc Andreessen, "Analyzing the Facebook Platform, three weeks in" (http://blog.pmarca.com/2007/06/analyzing_the_f.html)

Discovery Happens Elsewhere

No single website is the sole focus of a user's attention. Increasingly people discover websites, or encounter content from them, in a variety of places. These may be network level services (Google, ...), or personal services (my RSS aggregator or 'webtop'), or services which allow me to traverse from personal to network (Delicious, LibraryThing, ...).

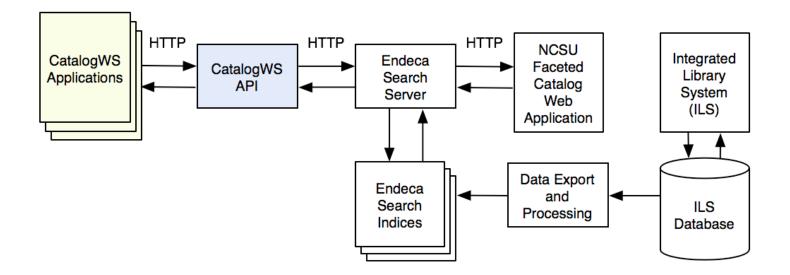
— Lorcan Dempsey, "Discovery happens elsewhere" (http://orweblog.oclc.org/archives/001430.html)

Motivation for Catalog Platform

- Move beyond the "one-size-fits-all" approach to catalog discovery
- Make it easier to reuse and repurpose catalog data outside the ILS/OPAC
- Build catalog interfaces optimized for different use contexts

CatalogWS API

NCSU Catalog Architecture



API Functionality

Technical documentation:

http://www.lib.ncsu.edu/catalog/ws/

- Discovery-oriented
- Not an API to the ILS!
- Catalog availability
 - Focus on known-item lookup (isbn)
- Catalog search
 - Support known-item and exploratory searching
 - Mimic functionality available on catalog search results page

Example Request (Search)

http://www.lib.ncsu.edu/catalogws/?
service=search&query=deforestation

Required Parameters

service

'availability' | 'search'

query

Any search terms (including NULL)

Optional Parameters

output

['xml'] | 'rss' | 'opensearch' | 'json'

count

default: 30, max: 300

offset

default: 0

Optional Parameters

N

Endeca facet node constraint(s)

sort

 [relevance] | date_desc | date_asc | call_number | most_popular | date_added

style

URL of XSL to transform to custom output

XML Response

Discovery-centric:

- Search metadata (e.g. # of results)
- Matching items
 - Basic bibliographic metadata (not MARC)
 - Holdings / Item metadata
- Facet metadata
- Links

```
<item id="1683670">
   <catalogLink>
       http://catalog.lib.ncsu.edu/web2/tramp2.exe/do_ccl_search/guest?se
   </catalogLink>
    <title>Causes of deforestation of the Brazilian Amazon</title>
    <author>Margulis, Sérgio.</author>
    <pubDate>2004.
    <format>Book</format>
   <isbn>0821356917</isbn>
   <holdings institution="ncsu">
        library name="D.H. Hill Library">
            <holdingsItem>
                <callNumber>SD418.3 .B6 M27 2003</callNumber>
                <location>Stacks (8th floor)</location>
                <status>Available</status>
            </holdingsItem>
        </library>
        library name="Natural Resources Library">
            <holdingsItem>
                <callNumber>SD418.3 .B6 M27 2003</callNumber>
                <location>Stacks</location>
                <status>Available</status>
            </holdingsItem>
       </library>
   </holdings>
</item>
```

```
<facet id="topic">
    <title>Subject: Topic</title>
   <catalogLink>
        http://www2.lib.ncsu.edu/catalog/?Ntt=deforestation&Ntk=Keyword&
   </catalogLink>
   (value)
        <requestUri>
            http://www2.lib.ncsu.edu:9921/catalogws/?service=search&quer
        </requestUri>
        <catalogLink>
            http://www2.lib.ncsu.edu/catalog/?Ntt=deforestation&Ntk=Keyw
        </catalogLink>
        <title>Deforestation</title>
        <count>205</count>
   </value>
   (value)
        <requestUri>
            http://www2.lib.ncsu.edu:9921/catalogws/?service=search&quer
        </requestUri>
        <catalogLink>
            http://www2.lib.ncsu.edu/catalog/?Ntt=deforestation&Ntk=Keyw
        </catalogLink>
        <title>Environmental aspects</title>
        <count>73</count>
   </value>
(/facet)
```

CatalogWS Applications

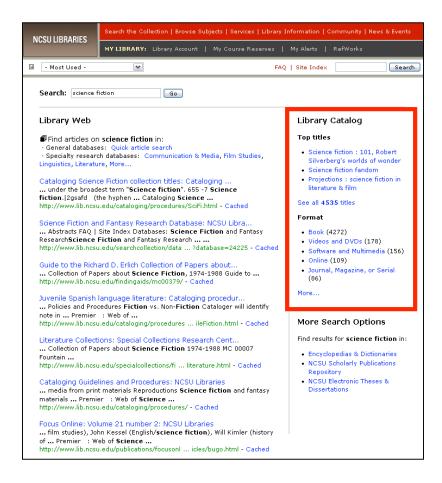
CatalogWS Applications

Categories

- Integration with other applications
- Alternative catalog interfaces
- Collection promotion
- Platform for research

QuickSearch

- Website Search Tool
- Combines:
 - Catalog search
 - Journal finder
 - Databases
 - Website search
 - Library FAQs



Quick Search

- Top matching titles
- Format facet results
- Links to full catalog search results

Library Catalog

Top titles

- Science fiction: 101, Robert Silverberg's worlds of wonder
- · Science fiction fandom
- Projections : science fiction in literature & film

See all 4535 titles

Format

- Book (4272)
- Videos and DVDs (178)
- · Software and Multimedia (156)
- Online (109)
- Journal, Magazine, or Serial (86)

More...

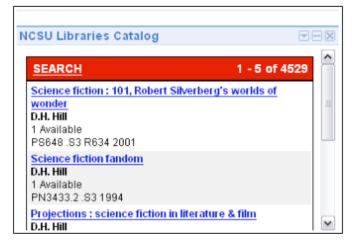
Google Widget



Google Widget

 Search and display catalog results within iGoogle





MobiLIB Catalog

- Usage scenario: Known-item search on mobile device (smart phone, PDA, ...)
- Bare-bones search interface
- Only one facet: Availability

http://www.lib.ncsu.edu/m/catalog

MobiLIB Catalog

Search fields:

- Keyword
- Title
- Author
- ISBN



MobiLIB Catalog

Results display:

- Short title
- Library
- Availability
- Call number if only one copy



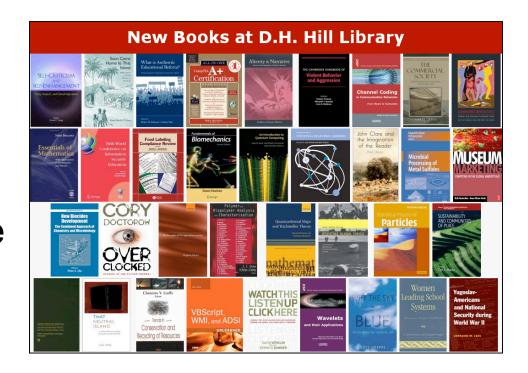
FacetBrowser

- Experimental interface for exploratory search
- Focus on browsing with facets



New Books Bookwall

- Newest books in catalog
- Automatically generated
- Maintenance free



Catalog Research Testbed

Catalog Research Testbed

- A platform for controlled user research on
 - Library catalog interfaces
 - Faceted search interfaces
 - User search behavior
- Data source is 1.8M indexed catalog records
- Focused on use by researchers

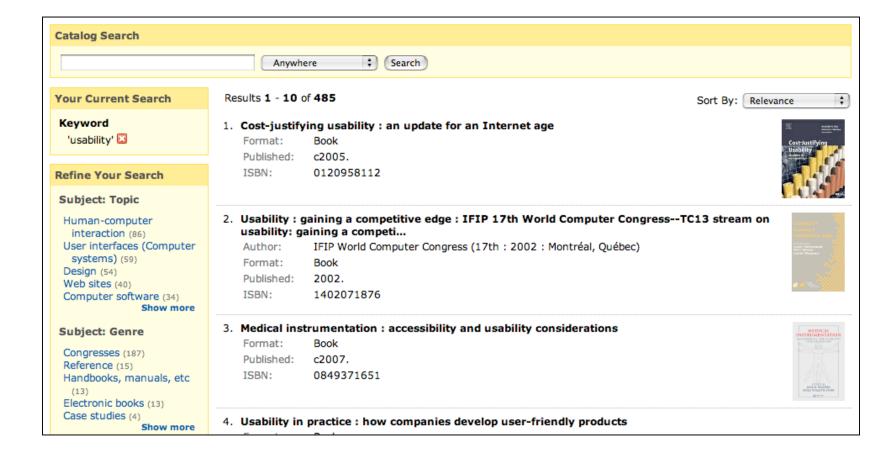
Testbed Features

- Custom interface(s) for each study
- Transaction logging (in development)
 - Participant identifier
 - Search term(s)
 - Facets clicked
 - Items selected
 - Timestamp

Testbed Configurability

- Customized interface via XSL and CSS
- Configurable display elements
 - Selection and display of item bibliographic and holdings metadata
 - Selection and placement of facets
 - Placement of cover images
 - Basic styling, including fonts, colors, alignment, etc.

Catalog Research Testbed



Example Research Questions

- How does the number of facets on the page affect search performance?
- What is the optimal placement and ordering of facets in a library catalog?
- To what extent is a faceted search interface more useful to a subject matter expert than to a non-expert?

Summary

Summary

- Library catalog as a data platform, rather than just a destination
- A simple open data infrastructure can enable a multiplicity of uses
- Many of the uses were not anticipated in the original design (this is good!)

Thank you!

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More Information

Article:

http://journal.code4lib.org/articles/10

CatalogWS API:

http://www.lib.ncsu.edu/catalog/ws/

CatalogWS Applications:

http://www.lib.ncsu.edu/dli/projects/catalogwsapps/