RE: Search
New Technologies for Improving OPAC Search and Retrieval

Presented by
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The evolution of OPACS

- Very primitive online catalogs emerge from the primordial soup beginning in the 1960s
- Essentially electronic versions of the card catalog
- Initially these were strictly text-based
- As DOS gave way to windows, GUI interfaces appear
Indexing and abstracting services catch the wave

- Print indexes begin to give way to electronic indexes
- Content could be loaded locally onto a mainframe, or accessed on individual PCs, or on CD “jukeboxes”
- Simultaneous users still problematic
- Labor intensive in terms of hardware maintenance and frequent content updates
Prior to the explosion of the World Wide Web, electronic library applications were still mostly just replications of the traditional card catalog and print indexes.

Now, full text of some resources can be delivered, and made searchable.

Content need not be “stored” locally, remote access to articles, ebooks, other electronic targets suddenly increases.
What is the paradigm of the future?

“Ultimately, the entire universe will become saturated with our intelligence.”

-Ray Kurzweil, on the evolution of human-machine intelligence and the prospect of human “thinking” and artificial intelligence becoming one and the same.
Okay, so maybe we’re not quite there yet...

- In our struggle to keep up, we are seeing more products all the time that are designed to streamline search and retrieval of the Library’s disparate resources
- Portal concept is an attempt to more effectively integrate resource search and discovery
- Patrons still want Google
What kinds of tools are we currently using?

- **iLink**—primarily for the materials “owned” by the Library—print materials, audiovisual materials, government documents, archival collections
- **A-Z List of journal titles**
- **LinkSource** to direct the user from the citation to the full-text target
- **WebFeat** to search across various databases simultaneously
Let’s focus on the OPAC for now

- iLink—searches all indexed fields in the MARC record
- No full-text searching
- Some “guided search” type features
- “You found titles in categories”
- “Try these too”
- Hypertext links in the catalog record
It’s a good start, but…

- Relevance ranking is imperfect
- Limited browsing functionality
- Still limited (mostly) to physical items that the library owns
- Content like MARC records for online journals & Netlibrary records has to be loaded separately & maintained
- Lack of Library 2.0 or social networking functions that Millennials desire
One advantage of the OPAC as a module of the ILS

- Integration with Circulation functions means that patrons can view their charges, renew, view and pay bills, place holds, see if an item is charged out, etc.

- Adopting some “standalone” type of search engine might result in the loss of this functionality
Considerations for replacement OPAC products

- Better search and retrieval
- Better relevance ranking
- Improved methods for guiding the search
- Better integration of all of the Library’s resources into one search interface
- Must include user functionality in terms of “My Account” type features
Who are the players?

- Endeca—In production in several libraries, including NCSU
- AquaBrowser—In production in even more libraries, including some Louisiana publics
- WorldCat Local—still in pilot phase
- Primo—very recently released (Ex Libris)
- Encore—very recently released (III)
Endeca and AquaBrowser

- These are “search engines”
- Both employ “faceted searching”
- AquaBrowser includes a visual search function
- Both appear to have better relevance determination than iLink, along with customizable relevance functionality
- Both offer some nice features to guide searching
- Both offer improved browsing
What do we mean by faceted searching?

- Faceted searching is a concept designed to guide the user from a broad to a narrow search.
- "Facets" are defined as attributes or properties of the retrieved items, like media type, or geographic location, language, subject or year.
- Not quite the same as "You found titles" or "Try these too"—no dead ends.
What about visual searching?

- Some visual search engines have been around for a long time, i.e. Kartoo
- Less of a “drill down” approach
- Often described as a “stepping stone” or “lily pad” approach to searching
- Instead of “facets,” the visual display will include terms that occur frequently near the searched term, along with synonyms, alternate spellings, foreign words, etc.
Real world examples of faceted and visual searching

- Comparing Endeca & AquaBrowser
  - with OPAC
  - with each other
LOUIS Libraries have some databases already with visual or faceted searching.

Search on "global warming".

Submit search.
EBSCOhost visual searching powered by Grokker

- Creates visual maps
- Broad subjects as circles
- Journal articles as squares
- LinkSource options ?

JSTOR faceted search prototype
(in JSTOR sandbox)
**iLink LOUIS Samp. db search**

= no grouping by “aspect,” user must browse pages

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**words or phrase "ouachita" search found 170 titles.**

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<th>#1</th>
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<td><strong>Details</strong></td>
<td>The reproductive ecology and life history of Graptemys ouachitensis (testudines: emydidae) in the Red River of Louisiana: a thesis submitted to the faculty of the University of Louisiana at Monroe in partial fulfillment of the requirements for the degree of Master of Science in the Department of Biology</td>
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<td>A comparison of groundwater analytical data collected from probe wells versus permanently installed monitoring wells : a thesis submitted to the faculty of The University of Louisiana at Monroe in partial fulfillment of the requirements for the degree of Master of Science in the Department of Geosciences, May 2003</td>
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<td><strong>Details</strong></td>
<td>A Preliminary Survey of the Vascular Flora of Ouachita County, Arkansas</td>
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The geology of the Ouachita Mountains
a symposium
Lewis Manning Cline, Ardmore Geological Society
Cover title: Ouachita
Year: 1959
Subject: Geology, Ouachita Mountains (Ark. and Okla.)
Found: Ouachita (3)

Ouachita field trip guidebook
Ardmore Geological Society, American Association of Petroleum Geologists, Society of Economic Paleontologists and Mineralogists
Cover title: ;Issued in box.;On box: Ouachita Symposium guidebook and figures
Year: 1959
Subject: Geology, Ouachita Mountains (Ark. and Okla.), Guidebooks
Found: Ouachita (3)

Symposium on the geology of the Ouachita Mountains
Charles G. Stone, Boyd R. Haley, Arkansas Geological Commission
Year: 1977
Subject: Geology, Ouachita Mountains (Ark. and Okla.)
Found: Ouachita (2)

Lower Ouachita and Black Rivers, Arkansas and Louisiana, general geology
How & what does AquaBrowser search?

- Harvests a copy of catalog & indexes it overnight
- Search/Discover/Refine functions supported by own set of specialized indexes
- Includes both visual search and faceted search
- Retrieves real-time holdings/circ data from ILS
“Classic search” at ASUB

1 to 20 of 152 titles found searching Subjects that contain ozark mountains.

1. Along the Osage Trace: "Schoolcraft in the Ozarks" : Journal of a tour into the interior of Missouri and Arkansas, from Potosi, or Mine à Burton, in Missouri Territory, in a south west direction, toward the Rocky Mountains, performed in the years 1 (2001)

   Subject: Ozark Mountains Region -- Social life and customs.
   Found: mountains(1) ozark(1)

   Location: Multiple: Multiple / Multiple

2. And green grass grows all around / by Marguerite Lyon ; with illustrations by Ronald Bean.

   (1942)

   Subject: Ozark Mountains
   Found: mountains(1) ozark(1)

   Location: Abington Library: Arkansas Reference / REF F472 .O9 L75 1942


   (1957)

   Subject: Cook-books -- Ozark Mountains.
   Subject: Cookbooks -- Ozark Mountains.
   Subject: Cookery -- Ozark Mountains.
   Subject: Cooking -- Ozark Mountains.
AquaBrowser at ASUB

Word Cloud

Ranked by Relevance

Focus by Categories
• Word Cloud suggests:
  – Associations w/term
  – Spelling variants
  – Translations of term
  – Thesaurus (antonyms & synonyms)
  – Word variations (stemming)
  – Discovery Trail
  – Distance from initial term = no significance
  – Larger a word is, more relevant it is
Endeca at NCSU

“North Carolina State University (NCSU) Libraries purchased Endeca’s Information Access Platform to give its users relevance-ranked keyword search results and to leverage the rich metadata trapped in the MARC record to enhance collection browsing.”

–Kristin Antelman, Emily Lynema, and Andrew K. Pace

New catalog deployed in January, 2006
Endeca at NCSU (cont.)

“The principal functionality gained by implementing an advanced search-and-navigation technology such as the Endeca IAP falls in three main areas:

- relevance-ranked results
- new browse capabilities
- and improved subject access.”

-Kristin Antelman, Emily Lynema, and Andrew K. Pace
Browse entire collection without entering a search term

We found 1749355 matching items. Limit results to currently available items.

Narrow By Call Number Range:
A - General Works (4431)
B - Philosophy, Psychology, Religion (77083)
C - Auxiliary Sciences of History (5654)
D - History (General) and History of Europe (68709)
E - History: America (30944)
F - America: local history (17773)
G - Geography, Anthropology, Recreation (29315)
H - Social sciences (167300)
J - Political Science (26196)
K - Law in general, Comparative and uniform law. Jurispruden ... (15726)
L - Education (62521)
M - Music (12643)
N - Fine Arts (39585)
P - Language and literature (187565)
Q - Science (193607)
R - Medicine (45059)
S - Agriculture (52624)
T - Technology (148871)
U - Military science (General) (7002)
V - Naval science (2000)
Z - Bibliography, Library Science, Information resources (ge ... (20733)

Narrow Results By:
Subject: Topic
- History (131666)
- United States (53752)
- Politics and government (40272)
- History and criticism (29912)
- Law and legislation (28973)
Show More ...

Subject: Genre
- Congresses (98385)
- Fiction (47923)
- Early works to 1800 (39381)
- Biography (37457)
Show More ...

Format
- Book (1416310)
- Microform (222487)
- Online (189006)
- Journal, Magazine, or Serial (53871)

Brief View | Full View

1. VFR terminal area chart, Las Vegas.
   Published: -2000.
   Format: Map
   Satellite Shelving Facility
   TD 4.79/12:L 33/ 2000-2
   Map Collection
   Available

2. Boat crew training manual
   Author: United States. Coast Guard.
   Published: [1986?]-
   Format: Book
   D.H. Hill Library
   TD 5.8:B 63/2/986
   U.S. Documents (2nd floor)
   Available

3. AMERICAN WOOD PRESERVERS ASSOCIATION ANNUAL MEETING 91ST 1995
   Format: Book
   D.H. Hill Library
   On Order
   Stacks
   Order in Process
Search 'blue ridge' X:

We found 276 matching items. Limit results to currently available items.

Narrow By Call Number Range:
B - Philosophy. Psychology. Religion (1)
D - History (General) and History of Europe (1)
E - History: America (9)
F - America: local history (36)
G - Geography. Anthropology. Recreation (17)
H - Social sciences (20)
K - Law in general. Comparative and uniform law. Jurisprudence (1)
L - Education (9)
M - Music (3)
N - Fine Arts (2)
P - Language and literature (35)
Q - Science (35)
S - Agriculture (10)
T - Technology (33)

Narrow Results By:

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<td>1. Preliminary research survey for the Blue Ridge Parkway Folklife Project</td>
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<td>Author: Barts, Peter.</td>
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| 2. Walking the Blue Ridge: a guide to the trails of the Blue Ridge Parkway |
| Author: Adkins, Leonard M. |
| Published: c2003. |
| Format: Book |
| Natural Resources Library |
| GV199.42 .B65 A34 2003 Stacks Available |

| 3. Blue Ridge folklife [electronic resource] |
| Author: Olson, Ted. |
| Published: c1998. |
| Format: eBook |
| Online: View resource online |

<p>| 4. Walking the Blue Ridge: a guide to the trails of the Blue Ridge Parkway |
| Author: Adkins, Leonard M. |
| Published: c1994. |
| Format: Book |
| D.H. Hill Library |</p>
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<td>Mica deposits of the Blue Ridge in North Carolina,</td>
<td>Lesure, Frank Gardner, 1927-</td>
<td>1968</td>
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<td>5</td>
<td>Blue Ridge Music Center, Blue Ridge Parkway, North Carolina, Virginia</td>
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<td>1986</td>
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Satisfaction at NCSU

“Comments have ranged from how much superbly better it is than the old catalog, all the way down to what I call the "deafening silence"...that is, the common expectation that a catalog should have worked this well to begin with, and everything else on the web does, so why should I comment about the library catching up to the 21st century.”

-Andrew K. Pace email
Aspects of faceted searching (Endeca)

- Self-directed navigation answers disparate needs
- Searcher can use own terminology
- Traditionally “hidden” values revealed to user
- Navigates within retrieved set, while visual search offers other search options
- Offers only populated categories (displays count), no “dead-ends”
- Drill down by facet (e.g., subject→call number→collection)
Features of AquaBrowser

- Word Cloud suggests potential new searches
  - An exploration tool (contrasting with faceted navigation)

In common with Endeca

- Offers refined navigation (facets)
- Breadcrumb history
- “Did you mean …?” suggestions
Links

- Endeca at the NCSU Libraries
  http://www.lib.ncsu.edu/endeca

- Medialab Solutions – AquaBrowser Library
  http://www.medialab.nl/index.asp