2016

 Territory Folks Should all be Pals: Qualitative Use of Search Logs to Improve Confidence in and Communication about a Library Discovery Service

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Territory Folks Should all be Pals

Qualitative Use of Search Logs to Improve Confidence in and Communication about a Library Discovery Service
Questions about Primo

Do perceptions of search relevance vary by department?

Can conversations about these perceptions improve inter-departmental relationships?

Can this all lead to a better discovery service?
The Project

Random selection of anonymized Primo user queries

Library staff from different departments repeat searches and rate relevancy

Scores are compared and discussed

Replicate at a second research library
# Two Universities

<table>
<thead>
<tr>
<th></th>
<th>University of Tennessee (UT)</th>
<th>Virginia Commonwealth University (VCU)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enrollment</strong></td>
<td>26,737 (6,400 FT Grad)</td>
<td>26,106 (4,984 FT Grad)</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td>$261 million</td>
<td>$270 million</td>
</tr>
<tr>
<td><strong>Doctor's Degrees</strong></td>
<td>1,141</td>
<td>329</td>
</tr>
<tr>
<td><strong>Carnegie Profile</strong></td>
<td>Public Research University (Very High)</td>
<td>Balanced arts &amp; sciences/professions, high graduate coexistence Comprehensive programs, with medical/veterinary school</td>
</tr>
</tbody>
</table>

Source: Carnegie Classification; ASERL Fall 2105 Statistical Index
## Two Libraries

<table>
<thead>
<tr>
<th></th>
<th>UT</th>
<th>VCU</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARL</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Titles Held</td>
<td>2,674,798</td>
<td>2,543,274</td>
</tr>
<tr>
<td>Library Expenditures</td>
<td>$27 million</td>
<td>$21 million</td>
</tr>
<tr>
<td>Staff</td>
<td>248 (103 professional)</td>
<td>179 (64 professional)</td>
</tr>
<tr>
<td>Gatecount</td>
<td>2,087,299</td>
<td>2,058,082</td>
</tr>
<tr>
<td>Initial Circ Transactions</td>
<td>150,528</td>
<td>62,154</td>
</tr>
<tr>
<td>Database Searches</td>
<td>4.6 million</td>
<td>4.1 million</td>
</tr>
</tbody>
</table>

Source: ASERL Fall 2105 Statistical Index
## Two Library Systems

<table>
<thead>
<tr>
<th></th>
<th>UT</th>
<th>VCU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alma</td>
<td>2014</td>
<td>2012</td>
</tr>
<tr>
<td>Primo</td>
<td>2009</td>
<td>2011</td>
</tr>
<tr>
<td>Search approach</td>
<td>Tabbed</td>
<td>All in one</td>
</tr>
</tbody>
</table>
The Project @ VCU | Context

Fall 2013 Library Confidence in Primo Low

Instruction Librarians stranded in classes when system under load

Performance issues addressed, concerns remained on relevancy

Spring 2014 Relevancy study to both improve Primo and interdepartmental relations

4 Systems Librarians | 3 Instruction Librarians
Selected and anonymized search queries from “typical week” October 2013
Started with 200 queries for test run, scaled back to 100
Refined query selection and relevancy scale
1: Very Poor (no relevant items, misleading results, known item not findable)
2: Below Average (few relevant items, known item buried)
3: Average (some relevant items; known item on first page or accessible from reasonable use of facets)
4: Above Average (topic search returned mostly relevant results, known item on top 5 results)
5: Excellent (topic search returned very relevant results; known item search retrieved item in top 2 results)
Please indicate how strongly you agree with the following statement: Primo produced relevant results for this search:

1 = Strongly Disagree
2 = Disagree
3 = Neither Agree nor Disagree
4 = Agree
5 = Strongly Agree
Flag for follow-up: Yes/No
Comments (optional)
Results shared prior to followup meeting

<table>
<thead>
<tr>
<th>Departments</th>
<th>Average</th>
<th>Individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems</td>
<td>3.57</td>
<td>3.27, 3.56, 3.54, 3.94</td>
</tr>
<tr>
<td>Teaching</td>
<td>3.76</td>
<td>3.77, 3.66, 3.86</td>
</tr>
</tbody>
</table>
After meeting to review findings and discuss specific examples flagged for followup

1. Forwarded problematic searches to Ex Libris
2. Several librarians report Google Scholar or Summon benchmarking
3. Pursued local customizations including “AdWords”
4. Qualitative improvement in search perception and collegiality
The Project @ VCU | Round Two

Spring/Summer 2015, another round of ratings with previous search terms

Ex Libris launched a significant improvement in the relevancy ranking algorithm

4 Systems Librarians, 2 Teaching Librarians (repeats)

Outreach Liaison Librarian, Digitization Librarian (new)

Eager to see differences (system performance or opinions)
<table>
<thead>
<tr>
<th>Departments</th>
<th>Average Round 1</th>
<th>Average Round 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems</td>
<td>3.57</td>
<td>3.84</td>
</tr>
<tr>
<td>Teaching</td>
<td>3.76</td>
<td>3.96</td>
</tr>
<tr>
<td>Other Librarians (Outreach &amp; Digitization)</td>
<td></td>
<td>3.48</td>
</tr>
<tr>
<td>Search Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Known Item</td>
<td>3.9</td>
<td>4.24</td>
</tr>
</tbody>
</table>
The Project @ VCU | Round Two Discussion

Summary results not shared before discussion

Systems librarian pulled samples for discussion (many comments or large variations in ratings)

Perceptions

- Performance of the discovery tool was better (for those repeating)
- Biggest gap in broad topic searches
- Known item searching ok
- Appreciation for the project
Is it too much to ask to anticipate these types of searches:

- **1960s School Segregation** (want 1960s or 1960’s etc)
- **Proc Natl Acad Sci USA 69:907-911** vs **Google Scholar** (citation search)

Or to do something better with a broad search like **journalism**

Library search is hard. Good or bad result? **Tennis shoes**

Round two unanticipated local adwords boost: **scifinder**
The Project @ Tennessee | Context

2009 - Implemented Primo

- "Out-of-the-box" Approach
- Departmental upheaval left us without a *true* Primo administrator

2013 - Discovery & Access Working Group (DAWG)

- Improve discovery interface
- Implement Primo Central
- Anticipate that the Aleph Web OPAC would eventually go away

2016 - Perceptions of Primo as a Discovery Tool

- Understand the differences in perception of Primo between "public" and "technical" services staff
- Conduct quantitative survey
- Perform qualitative post-survey discussion
The Project @ Tennessee | The Plan

Programmatically selected and anonymized search queries from all queries in February 2016

Started with 100 queries, scaled back to 50 (Advice of Departmental Review Committee)

Programmatically assigned strings related to each query (One Search, UT Collections, Advanced Search, Browse, Deep Link, Internal Search)

Invited all DAWG committee members (19) to participate

Asked to self identify as public services or technical services
## The Project @ Tennessee | Snapshot of Logs

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Queries</th>
<th>Percentage of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (February 2016)</td>
<td>122570</td>
<td>100%</td>
</tr>
<tr>
<td>One Search</td>
<td>108069</td>
<td>88%</td>
</tr>
<tr>
<td>UT Collections</td>
<td>13333</td>
<td>11%</td>
</tr>
<tr>
<td>Advanced Search</td>
<td>7753</td>
<td>6%</td>
</tr>
<tr>
<td>Browse</td>
<td>1168</td>
<td>~1%</td>
</tr>
<tr>
<td>Deep Links</td>
<td>42715</td>
<td>35%</td>
</tr>
</tbody>
</table>
1: Very Poor (no relevant items, misleading results, known item not findable)
2: Below Average (few relevant items, known item buried)
3: Average (some relevant items; known item on first page or accessible from reasonable use of facets)
4: Above Average (topic search returned mostly relevant results, known item on top 5 results)
5: Excellent (topic search returned very relevant results; known item search retrieved item in top 2 results)

Respondents were allowed to skip queries where they found the query results difficult to interpret.
### Survey Results

<table>
<thead>
<tr>
<th>Departments</th>
<th>Average</th>
<th>Individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Services</td>
<td>3.54</td>
<td>3.74, 2.9, 3.63, 3.49, 3.3, 4.18</td>
</tr>
<tr>
<td>Technical Services</td>
<td>3.9</td>
<td>4.18, 4.12, 3.94, 4.02, 3.22</td>
</tr>
</tbody>
</table>
## Comparing Averages Across Query Types

<table>
<thead>
<tr>
<th>Query Type</th>
<th>Public Services Avg.</th>
<th>Technical Services Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OneSearch</td>
<td>3.38</td>
<td>3.75</td>
</tr>
<tr>
<td>UT Collections</td>
<td>4.1</td>
<td>4.24</td>
</tr>
<tr>
<td>Advanced Search</td>
<td>3.6</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Even though we all used the same rubric, there were some issues with inter-rater reliability.

Public Services:

- 58% of queries had at least a 2 point swing in the high and low rating in the group
- 8% of queries had at least 1 person rate the results a 5 and at least 1 person rate the results a 1

Technical Services:

- 56% of queries had at least a 2 point swing in the high and low rating in the group
- 4% of queries had at least 1 person rate the results a 5 and at least 1 person rate the results a 1
Survey respondents were allowed to skip queries where the results were difficult to interpret.

7 queries were skipped by respondents in public services.

2 queries were skipped by respondents in technical services.

0 queries were skipped by more than one individual regardless of group.
In order to better understand concordance issues, eleven queries were selected for discussion.

Six queries were ones where one person in the group rated a query a 1 and another rated it a 5.

Five questions were queries where there was more than a one point swing between the two groups on average.
Do you feel you have a good understanding of the searcher’s intention?

Are the results returned from the query satisfactory? Why? Why not?

Based on the query, do you think the results should be better?

How do you expect a discovery tool to handle a search like this?

Why do you think respondents rated the query results differently?
A known-item that we don’t have

- Public Services: “Since results are returned, I’d think this would insinuate that we have this but I’m doing something wrong.”
- Technical Services: “We’re following the Google model, and Google always returns something.”
- Public Services: “Students have similar issues when they search for articles or books we don’t have, and reviews are returned.”

It’s not about words; it’s about “aboutness.”

- Both groups: “This looks like a known item search.”
- Public Services: “The results returned here have the words but I question the distance between them.” “The sources of some of these results make no sense.” “Technical services just sees the words; they don’t think about the aboutness.”

Results that invoke an emotional response

- Public Services: “This is an advanced search for couples and infertility. The first result says Female Infertility. I found that offensive.”
- Public Services: “There is nothing inherently wrong with the results here, but that first result invoked an emotional response and I threw the rubric out the window.”
- Matthew Reidsma’s “Algorithmic Bias in Library Discovery Systems”
The Project @ Tennessee | Challenges and Next Steps

- Known item searches
- Search quality
- DAWG-wide discussion
Conclusions: UT | VCU Compare

Discovery: Better than average! UT 3.71 | VCU 3.62

Context matters, defining and determining relevancy

Quantitative vs Qualitative (sample size, form size, for understanding differences in perspectives)

Comparison with other search expectations
Conclusions: General Takeaways

Pinpointing potential areas for search improvement

Effective vehicle for productive conversations about discovery

Dialog, research, and replication across institutions
References

“Building Bridges with Logs: Collaborative Conversations about Discovery across Library Departments” Code4Lib Issue 32. Jimmy Ghaphery, Emily Owens, Donna Coghill, Laura Gariepy, Megan Hodge, Thomas McNulty, Erin White

GitHub repository - https://github.com/vculibraries/primo-log-sampler
Thanks

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Emily Owens  eaowens@vcu.edu

Thomas McNulty  tmcnulty@vcu.edu

Questions and comments welcome