Using an Availability Study to Assess Access to Electronic Articles

Presented at the 2010 Library Assessment Conference by Janet Crum, Director of Library Services, City of Hope

With special thanks to Carla Pealer, Oregon Health & Science University Library, Portland
The setting: Oregon Health & Science University Library, Portland, OR

- Freestanding academic health sciences center: medicine, dentistry, nursing, allied health, basic sciences, biomedical engineering
- Library serves faculty, staff, students, patients, unaffiliated health practitioners, and walk-in users
What I’ll talk about today

- Availability study – what and why
- Methodology
- Summary of findings
- Conclusions and take-aways
Products/tools used

- Catalog: Millennium from Innovative Interfaces
  - Integrated with Innovative’s Electronic Resources Management (ERM) module
- Link Resolver: WebBridge from Innovative Interfaces
- Remote access: EZProxy
- Most electronic holdings maintained by library rather than purchased
The problem – incomplete information

- Available data provided incomplete picture
  - Usage data measures quantity, not quality, of access
  - User support requests -> anecdotal data
  - Usability tests contrived, don’t use actual user requests
  - LibQUAL+ data -> know there’s a problem but need more information to fix it

- How often are users able to get full text of desired articles?
- What gets in their way? And how often?
The solution – an availability study

- Oversimplified summary of method
  - Gather actual user requests (or simulate them)
  - Try to fill them the way a user would
  - Record and analyze results
- Measures how well library satisfies user requests
- Identifies and quantifies barriers to satisfying requests
- First described by Kantor in 1976
Very short review of literature on availability studies

- Lots of studies of print materials summarized in review articles by Mansbridge (1986) and Nisonger (2007).
- Nisonger (2007 and 2009) provides excellent introduction to availability studies
- Very few published availability studies involve electronic articles
- None include link resolver
Summary of our methodology

- Get sample of user requests from link resolver log
- Try to retrieve article via link resolver and catalog
- Record results + information about article
- Analyze results
The data

- Link resolver logs each user request
  - Date/time
  - OpenURL
  - Which link(s) the user clicks
- Requested log files from vendor
  - Parts of selected days during two 3-week periods (fall 2009 and spring 2010)
- Removed extraneous entries
  - Web page elements (e.g. images)
Sampling

- Tested random sample of 414 entries
  - Every 3rd entry
  - Skipped obvious duplicates
  - Skipped entries for items other than articles
Testing – link resolver

- Paste openURL in browser
- Attempt to retrieve full text using menu provided by resolver
- Test links in order they appear
- Stop when successful or when run out of links to test
Testing - catalog

- Search for journal
- Review holdings information
- If catalog indicates electronic availability, attempt to retrieve full text using catalog link(s)
Recording results in Excel

- Link resolver availability
  - Whether or not article could be retrieved electronically via article- or journal-level links
  - Nature of any problems encountered
- Catalog availability
  - Whether or not article could be retrieved electronically
  - If not, is it available in print?
  - Nature of any problems encountered
Other data recorded

- Link resolver info
  - Origin of request (e.g. PubMed, Scopus)
  - Whether or not user clicked any links
- Article info
  - Journal title
  - Year of publication
- Testing info
  - Date tested
  - Initials of tester
Analyzing results

• Availability
  • Via catalog and resolver
  • By publication date
  • By origin

• Problems
  • Nature
  • Frequency
  • Used Pareto charts
## Results: Availability

<table>
<thead>
<tr>
<th>Availability via link resolver</th>
<th>Available electronically</th>
<th>Available in print only</th>
<th>Not available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available with no problems</td>
<td>261</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Available with problems</td>
<td>19</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Not available</td>
<td>27</td>
<td>21</td>
<td>83</td>
</tr>
<tr>
<td>Availability unclear due to incomplete data</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>310</strong></td>
<td><strong>21</strong></td>
<td><strong>83</strong></td>
</tr>
</tbody>
</table>
## Results: Barriers to accessing articles via the catalog

<table>
<thead>
<tr>
<th>Reasons Articles Were Unavailable</th>
<th>Count</th>
<th>% of Total Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>No holdings for title</td>
<td>42</td>
<td>40.38%</td>
</tr>
<tr>
<td>Available in print only</td>
<td>21</td>
<td>20.19%</td>
</tr>
<tr>
<td>Newer than most recent holdings</td>
<td>21</td>
<td>20.19%</td>
</tr>
<tr>
<td>Older than oldest holdings</td>
<td>9</td>
<td>8.65%</td>
</tr>
<tr>
<td>Article missing from target site</td>
<td>4</td>
<td>3.85%</td>
</tr>
<tr>
<td>Gap in holdings</td>
<td>2</td>
<td>1.92%</td>
</tr>
<tr>
<td>Subscription/payment problem</td>
<td>2</td>
<td>1.92%</td>
</tr>
<tr>
<td>Supplement/special issue not available</td>
<td>1</td>
<td>0.96%</td>
</tr>
<tr>
<td>Problem with proxy configuration</td>
<td>1</td>
<td>0.96%</td>
</tr>
<tr>
<td>Unknown error in source citation</td>
<td>1</td>
<td>0.96%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>104</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>
Barriers to Accessing Articles via the Catalog

- No holdings for title: 40%
- Available in print only: 61%
- Older than most recent holdings: 81%
- Article missing from target site: 89%
- Gap in holdings: 93%
- Subscription/payment problem: 95%
- Supplement/special issue: 97%
- Problem with proxy configuration: 98%
- Unknown error in source citation: 99%
- Total: 100%

% of Total: Barred articles as a percentage of total articles.
Cumulative %: Cumulative percentage of articles barred by the catalog's barriers.
## Results: Barriers to accessing articles via link resolver

<table>
<thead>
<tr>
<th>Problem</th>
<th>Count</th>
<th>Percent of Total Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete or inaccurate metadata</td>
<td>38</td>
<td>57.58%</td>
</tr>
<tr>
<td>Article missing from provider site</td>
<td>6</td>
<td>9.09%</td>
</tr>
<tr>
<td>CrossRef down or unable to process request</td>
<td>4</td>
<td>6.06%</td>
</tr>
<tr>
<td>Subscription/payment problem</td>
<td>3</td>
<td>4.55%</td>
</tr>
<tr>
<td>Holdings incorrect in knowledge base</td>
<td>3</td>
<td>4.55%</td>
</tr>
<tr>
<td>Resolver configured incorrectly</td>
<td>2</td>
<td>3.03%</td>
</tr>
<tr>
<td>Concurrent user limit reached</td>
<td>2</td>
<td>3.03%</td>
</tr>
<tr>
<td>Article-level link led to journal page</td>
<td>2</td>
<td>3.03%</td>
</tr>
<tr>
<td>Unknown problem</td>
<td>2</td>
<td>3.03%</td>
</tr>
<tr>
<td>Broken link in knowledge base</td>
<td>1</td>
<td>1.52%</td>
</tr>
<tr>
<td>Target site down</td>
<td>1</td>
<td>1.52%</td>
</tr>
<tr>
<td>Target not set up in resolver</td>
<td>1</td>
<td>1.52%</td>
</tr>
<tr>
<td>Incorrect or incomplete citation</td>
<td>1</td>
<td>1.52%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>66</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Barriers to accessing articles via link resolver

- Metadata problem
- Article missing
- CrossRef problem
- Subscription/payment problem
- Resolver configured incorrectly
- Concurrent user limit reached
- Article-level link led to journal page
- Broken link in knowledge base
- Target site down
- Incorrect or incomplete citation

Percent of Total
Cumulative Percent

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Conclusions and take-aways

- Availability studies provide
  - Useful data to support decisions re: allocating resources
  - A powerful way to assess the quality of collections and access to them
- Link resolver logs are a gold mine of information about what users are trying to access
- Don’t know if you can get resolver log data? Ask!
Questions? Please get in touch.

Thank you!

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