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**Meeting Users in Their Spaces:
Key Findings on Discovery to Delivery**

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Discovery and Access Project: How do academic library users navigate the path from discovery through to access?

- What do academic users do when searches don't result in fulfillment?
- What differentiates searches that lead to access from searches that don't?
- What demographic characteristics influence the access of users?
- How does access correlate with success?

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Methodology

- We want to understand aggregate user behavior to inform impact and roadmap prioritization
- However, we also want to understand the 'why'

How do we get the best of both quantitative and qualitative research methods? **Combine them!**

Tandem use of log analysis and user interviews.
Librarian Resource Sharing interviews, too.

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HIGH LEVEL DISCOVERY AND ACCESS FINDINGS

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INTUITIVE
Convenience is king, queen, the whole court

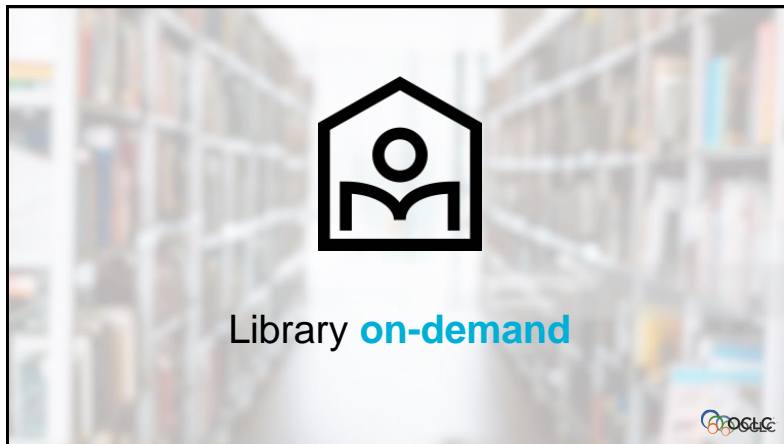OCLC

SMART
Context and situation matter

PERSONAL
Delight users

Library **on-demand**

WORLDCAT DISCOVERY SEARCH LOG ANALYSIS

"Log analysis is everything that a lab study is not."

(Jansen 2017, 349)

What do the raw logs tell us?

"source_request_id": "97ze5a9d=c8022=4770=b547=7fc810574d36",
"caller_file_name": "StatsNotificationBroadcaster.groovy",
...

1. Did a keyword search but mistyped it
   - Had 0 results

2. Redid keyword search with correct spelling
   - Had 759,902 results

3. Began typing in additional keyword

4. Selected one of the autosuggested keyword phrases
   - Had 1,761 results

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Ways of evolving a search

Corrected search	**Shows greater than 90% similarity with the previous search string**
Refined search	**Shows 80–90% similarity with the previous search string, with the first string contained in the second, or an index change**
New search	**Shows less than 80% similarity with the previous search string**

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Summary of results

- Average of **5 minutes** per session
- Average of **2.2 searches** per session
- Average of **5.1 words** per search
- **12%** of sessions had search refinements
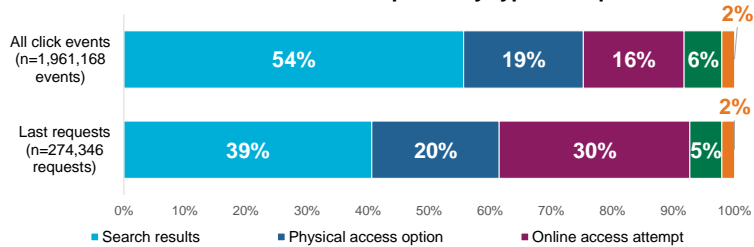- **33%** of sessions had multiple searches

n=282,307 sessions

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Types of Requests

Search results	The user **made a request for search results**. This could include a new search, refinement of an existing search, or the addition of limiters.
Physical access options	Some users left the system after looking at a holding, where they were able to identify the physical item call number and/or location. These users were categorized as **having the option to physically access the item.**
Online access attempt	The user clicked an item or made a request to **digitally access the full text** of the item.
Attempt to save	The user attempted to **export or otherwise save the citation**.
Physical access attempt	The user clicked an item or made a request to **place a hold** on a physical copy of the item.

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While search results account for over half (54%) of all click events, they account for just over a third (39%) of last requests

All click events vs. Last requests by type of request

Probability of fulfillment

Number of searches	2	Number of searches	2
Number of search refinements	0	Number of search refinements	0
Words per search	2	Words per search	2
Results per search	1000	Results per search	1000
Keyword limiter (1 if yes, 0 if no)	1	Keyword limiter (1 if yes, 0 if no)	1
Author limiter (1 if yes, 0 if no)	0	**Author limiter (1 if yes, 0 if no)**	**1**
Title limiter (1 if yes, 0 if no)	0	Title limiter (1 if yes, 0 if no)	0
Chance of Fulfillment	69.09%	Chance of Fulfillment	84.76%

Number of searches	2
Number of search refinements	0
Words per search	**7**
Results per search	1000
Keyword limiter (1 if yes, 0 if no)	1
Author limiter (1 if yes, 0 if no)	0
Title limiter (1 if yes, 0 if no)	0
Chance of Fulfillment	70.32%

USER INTERVIEWS

"User interviews can help capture search and discovery behavior as the user understands it, rather than as a computer system understands it."

(Connaway, Cyr, Brannon, Gallagher, and Hood 2019)

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Example questions

- "Please tell us what you were looking for and why you decided to do an online search."

- "Did the item you were searching for come up in your search results? In other words, did you find it?"

- "I'd like to understand how you felt about your search experience overall. Would you say you were delighted with your search experience?"

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What do the interviews tell us?

What 'just the logs' told us:
- Began keyword search but mistyped it
  - Had 0 results
- Redid keyword search with correct spelling
  - Had 759,902 results
- Began typing in additional keyword
- Selected one of the autosuggested phrases
  - Had 1,761 results

What logs and interviews told us:
- Just starting work on a paper on a broad topic; didn't yet have a direction for the paper
- Was overwhelmed with number of search results
- Abandoned "library search" to do "Google searching" to better determine a direction for the paper
- Later came back to the library search and found it useful
- Also received help from student workers in the library
- Felt "prepared" to use the library search due to 1st-year library instruction

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METHODOLOGY CHALLENGES AND BENEFITS

"The methodology used for this study also could be extended beyond discovery systems. Other computerized activities that leave digital traces could be studied using interview protocols based on log analysis."

(Connaway, Cyr, Brannon, Gallagher, and Hood 2019)

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Challenges of methodology

(Tandem use of log data and user interviews)

- **Resource intensive**
  Time consuming
  Multiple team members
  Multiple IRBs

- **High level of expertise required**

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Benefits of methodology

(Tandem use of log data and user interviews)

- Provide context for quantitative data
- Clarify qualitative data
- Most effective when digital traces are present

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Impact of Study

- Collaborate internally in new ways
- Identify why and what users did during the search and when acquiring resources
- Develop a new methodology for studying user behaviors
- Influence product and system development

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Thank you!

Jay Holloway

**Because
what is
known must
be shared.**^{SM}

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