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Challenges and Opportunities in Library Discovery

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<https://hdl.handle.net/2027.42/143855>

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Downloaded from Deep Blue, University of Michigan's institutional repository

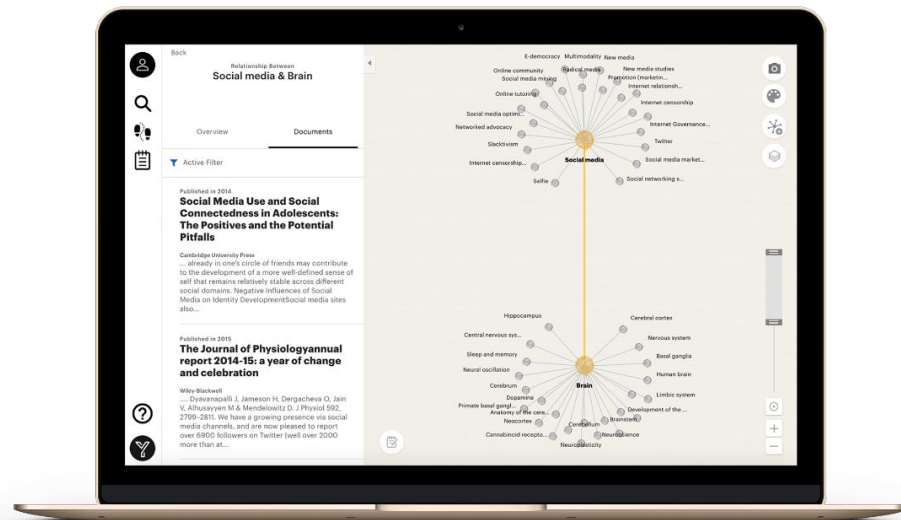
CHALLENGES and OPPORTUNITIES in Library Discovery

Rachel Vacek, Head of Design & Discovery
University of Michigan Library

Big Ten Academic Alliance Academic Libraries Conference on Discovery
May 30-31, 2018

OPPORTUNITY: Concept-mapping discovery tools

- Diagrams that depict suggested relationships between concepts
- Helps users uncover connections in research they may not know existed - a fancy topic explorer
- Helps visual thinkers



<https://yewno.com/>

OPPORTUNITY: XR technologies + Discovery



- XR = eXtended Reality technologies
 - Virtual, augmented, immersive, and mixed reality
- Not just a gaming fad
- Used in learning environments
- “Armchair adventures”
- Libraries are using these technologies to enable users to explore and discover new things

OPPORTUNITY: XR technology usage in the classroom is increasing

\$700 million will be invested in AR/VR applications in education by **2025** (Goldman Sachs)

60% of all higher education institutions in America will be using virtual reality in the classroom by **2021** (Gartner)

<https://www.forbes.com/sites/forbestechcouncil/2018/01/16/virtual-and-augmented-reality-in-college-classrooms-more-hype-than-help/#3f7b6f12d15a>

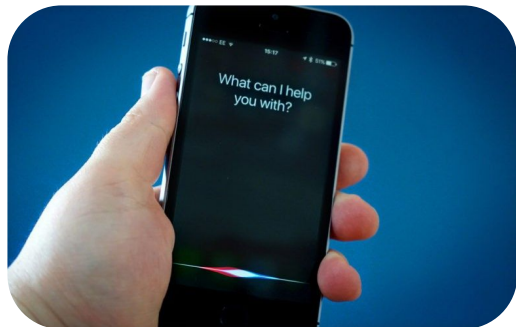
CHALLENGE: Little research is available on the effectiveness of these technologies within higher education

“The user experience in some AR, VR and MR applications can be intensely emotional and even disturbing, which raises further questions about the ethical and psychological responsibilities of offering such technologies.” (EDUCAUSE)

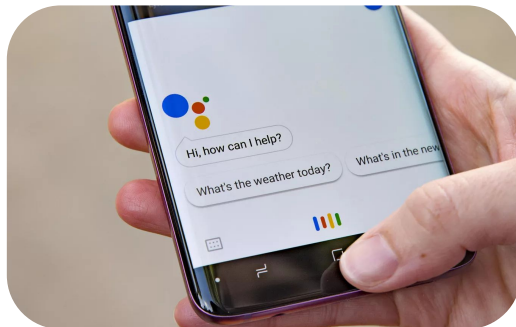


<https://library.educause.edu/~media/files/library/2017/10/eli7149.pdf>

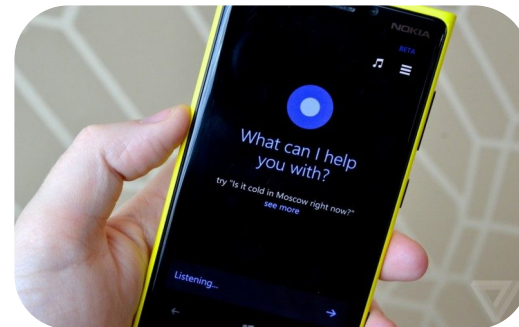
OPPORTUNITY: Voice-activated personal assistants + Discovery



Apple's Siri



Google's Assistant



Microsoft's Cortana



Amazon Echo
and Alexa



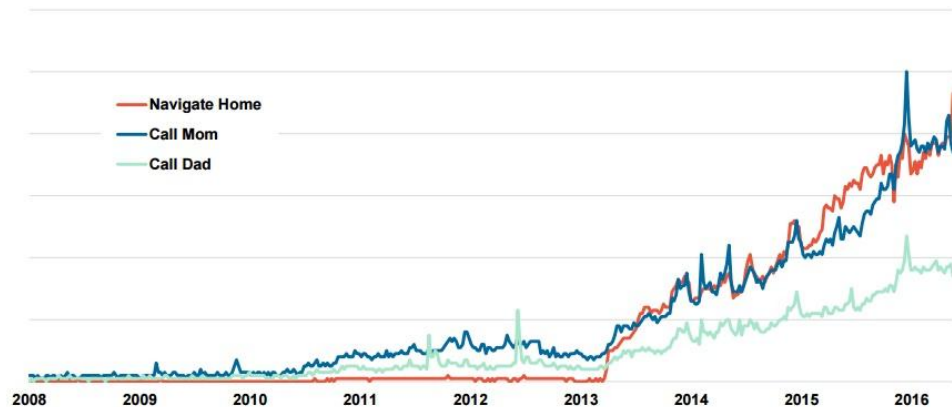
Google Home

OPPORTUNITY: The number of voice search queries is increasing rapidly

Google Voice Search Queries =
Up >35x Since 2008 & >7x Since 2010, per Google Trends

Google Trends imply queries associated with voice-related commands have risen >35x since 2008 after launch of iPhone & Google Voice Search

Google Trends, Worldwide, 2008 – 2016



@KPCB

Source: Google Trends
Note: Assume command-based queries are voice searches given lack of relevance for keyword-based search. Aggregate growth values determined using growth in Google Trends for three queries listed above.

KPCB INTERNET TRENDS 2016 | PAGE 122

<https://searchenginewatch.com/2016/06/03/what-does-meekers-internet-trends-report-tell-us-about-voice-search/>

OPPORTUNITY: Voice design API kits available

The screenshot shows the top navigation bar of the Worthington Libraries website with links for VISIT, BORROW, DOWNLOAD, EXPLORE, CALENDAR, ABOUT, and HELP. Below the navigation is a search bar and a banner for library hours. The main content area is titled "Alexa Skill" and includes an image of an Amazon Echo device. Text on the page explains that an Alexa Skill is available for Worthington Libraries and provides a list of four steps to enable it. It also lists two events: "Freegal Music" and "Coding Camp".

WORTHINGTON LIBRARIES

VISIT BORROW DOWNLOAD EXPLORE CALENDAR ABOUT HELP

Open Tuesday: 9am-9pm
Hours Today at the Library

Search catalog:

HOME > VISIT > SERVICES

Alexa Skill

If you have an Amazon Echo in your home, finding out what's happening at Worthington Libraries is just an ask away.

An Alexa Skill, developed specifically for Worthington Libraries is now available in the Skill Store. There are several ways to enable the skill on your device:

1. Just say, "Alexa, enable Worthington Libraries skill."
2. Go to Amazon Alexa app on your mobile device, search for the skill "Worthington Libraries," click "enable skill."
3. Go to alexa.amazon.com on your computer, search for the skill "Worthington Libraries," click "enable skill."
4. Go to [Amazon.com](https://amazon.com), search for "Worthington Libraries," select the skill, click "enable skill."

Once enabled, you can search for library events at any of our locations.
Sample questions:

CHECK OUT
Explore: Database
[Freegal Music](#)

Calendar: Event
[Coding Camp](#)
June 28, 2018
1:00pm - 4:00pm
Northwest Library, Meeting room

Calendar: Event
[Make It: Bits and Beats](#)
June 13, 2018
2:30pm - 4:00pm
Worthington Park Library, Meeting room

Find out what's happening at the Library with just your voice
Revised: April 11, 2018

Libraries and vendors are exploring this technology and experimenting with Alexa Skills Kit. A few examples:

- OverDrive
- EBSCO
- Demco
- Worthington Libraries (OH)
- Framingham Public Library (MA)

<https://www.worthingtonlibraries.org/visit/services/alexa-skill>

<https://lj.libraryjournal.com/2018/04/technology/voice-activated-technology-focus/#>

CHALLENGE: Making non-traditional forms of discovery accessible

- Concept mapping tools, XR technologies, and voice-activated tools clash with universal design concepts
- The technologies may aid some people with vision, hearing, physical, mental, intellectual, and learning disabilities, and be 100% inaccessible to others

OPPORTUNITY: Personalization + Discovery

The screenshot shows the Amazon Prime homepage with several personalized elements highlighted by red arrows:

- Navigation Bar:** A red arrow points to the Amazon Prime logo. Another red arrow points to the "Deals for Father's Day" text in the top right corner.
- Header:** The header includes the delivery location "Ann Arbor 48105", a search bar, and navigation links for "Departments", "Your Pickup Location", "Browsing History", and "Your Recommendations".
- Music Banner:** A large blue banner for Amazon Music features a smartphone displaying a music player and blue headphones. The text reads "Unlimited listening, always ad-free" and "Just \$7.99/mo". A red arrow points to the headphones.
- Personalized Recommendations:** A red arrow points to the "Hi, Rachel" greeting and "CUSTOMER SINCE 1999" text. Below this, there are sections for "YOUR ORDERS" (0 recent orders), "TOP CATEGORIES FOR YOU" (Toys & Games, Home & Kitchen, Clothing, Shoes & Jewelry), "PRIME" (Explore Prime benefits: exclusively for members), "VIDEO" (Recommended for you: The Marvelous Mrs. Maisel), "MUSIC" (Unlimited listening, always ad-free), and "MEET ALEXA" (Voice control your world with Echo & Alexa devices).

CHALLENGE: Privacy, ethical, security concerns

- Compromises are a real possibility
 - Devices could be hacked without an owner's knowledge
 - Devices could become real-time wiretaps
 - Some services / applications have security vulnerabilities
- Clash between improving the UX and privacy
 - Longstanding norms in the library profession around privacy are being challenged
 - Encryption and determining what types of data can / should be stored and used to improve interfaces and experiences
 - We shouldn't make ourselves easy targets

OPPORTUNITY: Discover all the things!

- Resources
- Expertise
- Services
- Locations
- News & Events

The screenshot shows the University of Michigan Library search interface. At the top, there is a dark blue header with the 'M' logo, 'Library | Search', and 'My Account'. Below this is a light blue search bar containing the text 'polar bears' and a 'Search' button. To the right of the search bar is an 'Advanced' link. Below the search bar is a navigation menu with tabs for 'Everything', 'Catalog', 'Articles', 'Databases', 'Online Journals', and 'Library Website'. The 'Everything' tab is selected. Below the navigation menu, there is a summary line: 'Everything: results from the Catalog, Articles, Databases, Online Journals, and Library Website pages.' with a 'Hide' link. The main content area is divided into three columns. The first column is titled 'Catalog' and shows '518 Results'. It features a blue header and a list of results, including 'Polar bears / proceedings of the Fifth Working Meeting of the Polar Bear Specialist Group, organized by the Survival Service Commission of IUCN and held at Le Manoir, St. Prex, Switzerland, 3-5 December 1974. 1976'. Below the title, it indicates 'Book' and 'Conference' and 'IUCN Polar Bear Specialist Group'. The second column is titled 'Articles' and shows '614,842 Results'. It features a blue header and a list of results, including 'Polar bears in action 2018' and 'THE CASE OF POLAR BEARS 2017'. Below the title, it indicates 'Journal Article' and 'Olivia Rowlands (+2 More)'. The third column is titled 'Talk to a Library Specialist' and features a blue header. It includes a profile picture of Scott A. Martin, his name 'Scott A Martin' with a checkmark icon, his title 'Biological Sciences Librarian', his phone number '734-764-8196', and his email address 'samarti@umich.edu'.

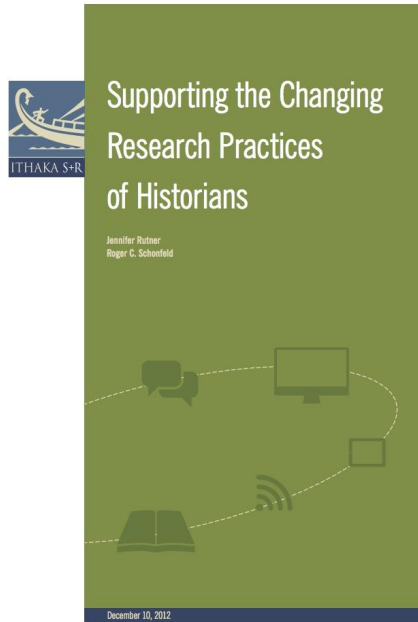
Full library discovery: <http://orweblog.oclc.org/full-library-discovery/>

CHALLENGE: Making “all the things” discoverable is hard

- Resources
- Expertise
- Services
- Locations
- News & Events



CHALLENGE: Google is still many's preferred tool for discovery



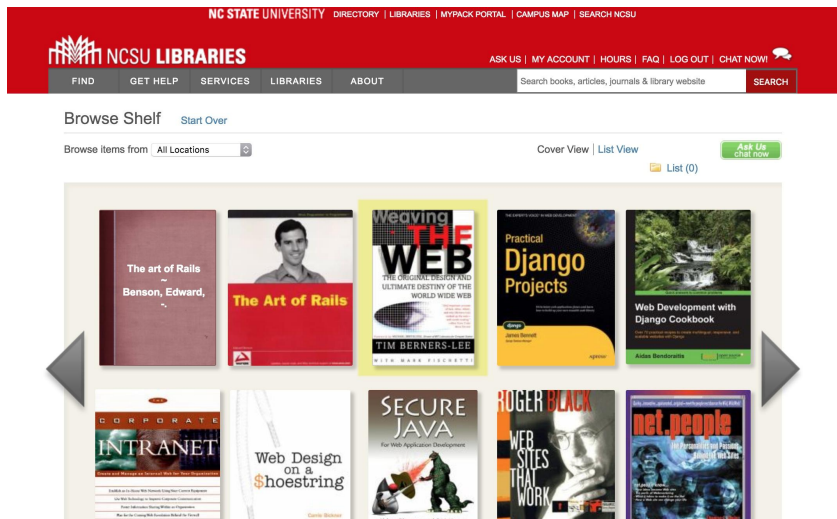
“While most historians recognize that Google has limited access to materials—it doesn’t actually search “everything”—it was generally seen as the **most comprehensive discovery tool available** for certain types of searches. Google discovery tools’ **convenience, ease of use, and overwhelming scope** of searchable material clearly outweigh the limitations of its search.”

Jennifer Rumer and Roger C. Schonfeld, (2012) “Supporting the Changing Research Practices of Historians: Final Report from ITHAKA S+R”: 18.

OPPORTUNITY: Increase in user research and UX support

- Libraries are paying more attention to users' motivations
 - Libraries are needing to demonstrate to campus administration data-driven research and library analytics to show impact
 - User research is supporting assessment efforts in libraries
- More UX librarians and UX departments are showing up in libraries
 - Support user research and usability on discovery interfaces
 - Bring consistency and universal design principles
 - Improve accessibility

CHALLENGE: Serendipitous discovery



Lynema, Emily & Lown, Cory & Woodbury, David. "Virtual Browse: Designing User-Oriented Services for Discovery of Related Resources." *Library Trends*, vol. 61 no. 1, 2012, pp. 218-233.

- As books move to offsite storage, and as we purchase more virtual resources, providing opportunities for serendipitous discovery is getting more challenging
- There are very few online virtual browsing tools that replace and enhance physical access to library stacks

CHALLENGE: Researchers have evolving needs because of changes in digital scholarship

- Growing demand of digitized primary sources
- Need for discovery interfaces to better represent the complex relationships between collections or entities represented in collections
- Want easy connections to other related resources

OPPORTUNITY: Linked data + Discovery

- Shareable, extensible, and easily re-usable
- Supports multilingual functionality for data and user services
- Improve capabilities for discovering and using data
- Structured data adds richer sets of pathways for browsing
- Creates an opportunity for libraries to improve the value proposition of describing and making more discoverable their assets



<https://www.w3.org/2005/Incubator/lld/wiki/Benefits>

Summary

Opportunities for library discovery are vast

- Concept mapping, voice-activated, and extended reality technologies
- Personalization
- Full library discovery
- More UX support
- Linked data

But there are still many challenges

- Making interfaces and technologies accessible
- Privacy, security, ethics
- Serendipitous discovery
- Digital scholarship and scholarly publishing changing at a rapid pace
- Not enough research available

Resources Consulted

- <https://www.forbes.com/sites/forbestechcouncil/2018/01/16/virtual-and-augmented-reality-in-college-classrooms-more-hype-than-help/#4c41ad0fd15a>
- <https://library.educause.edu/~media/files/library/2017/10/eli7149.pdf>
- http://dq756f9pzlyr3.cloudfront.net/file/2016_internet_trends_report_final.pdf
- <https://scholarlykitchen.sspnet.org/2018/01/08/discovery-delivery-user-centric-principles-discovery-service/>
- <http://www.sr.ithaka.org/wp-content/uploads/2015/08/supporting-the-changing-research-practices-of-historians.pdf>
- http://downloads.alcts.ala.org/ce/180215_Library_resource_Discovery_slides.pdf
- <http://www.infotoday.com/cilmag/dec17/Breeding--Five-Key-Technology-Trends-for-2018.shtml>
- <https://www.retaildive.com/ex/mobilecommercedaily/kayak-lands-on-amazon-alexa-bringing-voice-search-to-travel-discovery>
- <https://lj.libraryjournal.com/2018/04/technology/voice-activated-technology-focus/>
- <https://www.lib.ncsu.edu/projects/virtual-shelf-index>
- <https://www.worthingtonlibraries.org/visit/services/alexa-skill>
- <https://www.branded3.com/blog/google-voice-search-stats-growth-trends/>

Thanks!

Questions? Contact me:



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