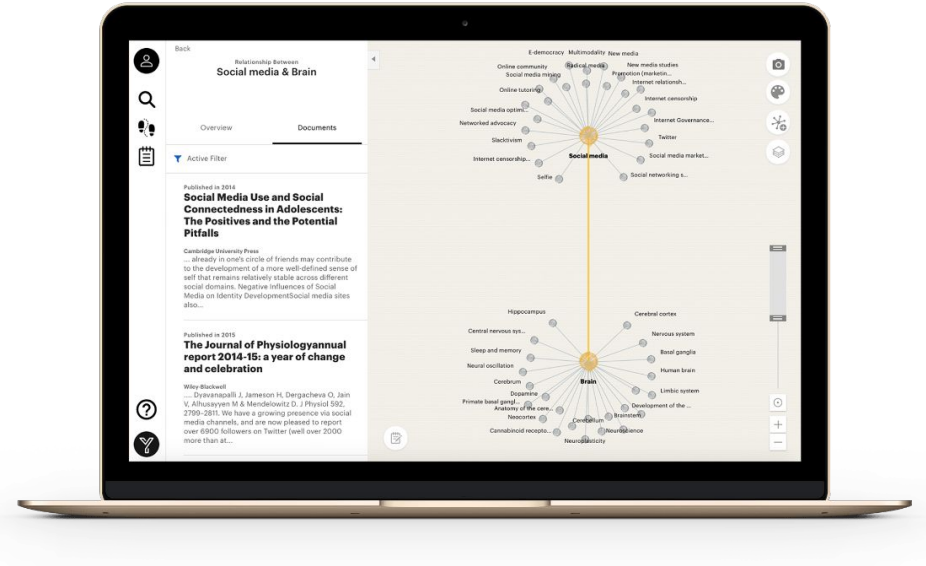
CHALLENGES and OPPORTUNITIES in Library Discovery

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

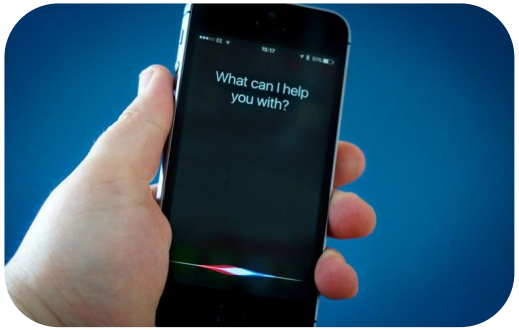
CHALLENGE: Little research is available on the effectiveness of these technologies within higher education

"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)

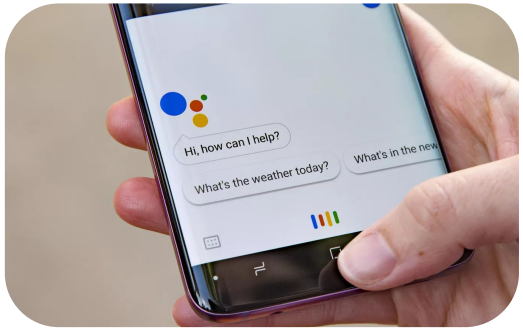


https://library.educause.edu/~/media/files/library/2017/10/eli7149.pdf

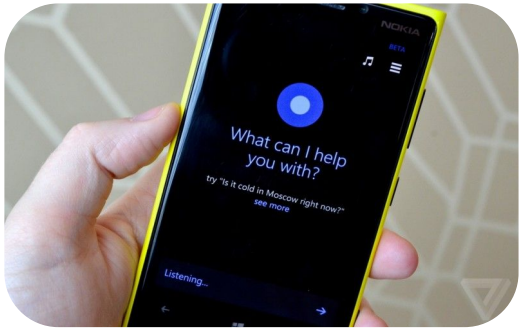
OPPORTUNITY: Voice-activated personal assistants + Discovery



Apple's Siri



Google's Assistant



Microsoft's Cortana



Amazon Echo and Alexa

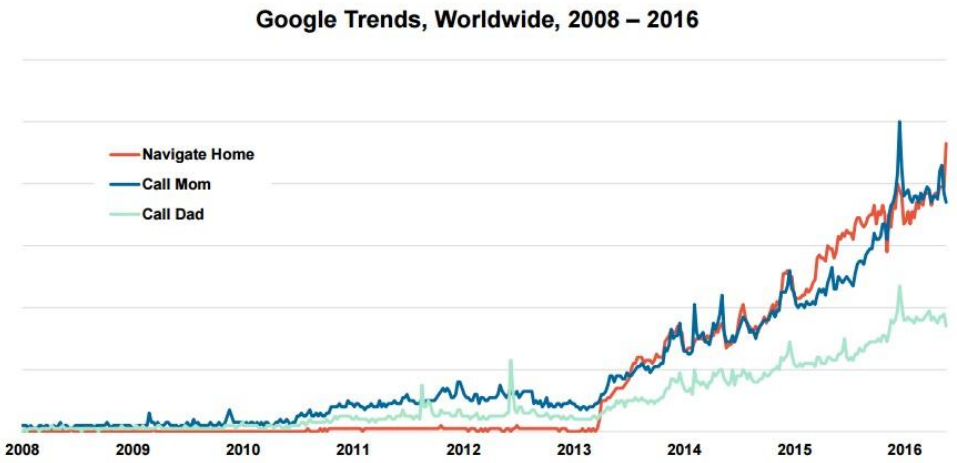


Google Home

OPPORTUNITY: The number of voice search queries is increasing rapidly

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

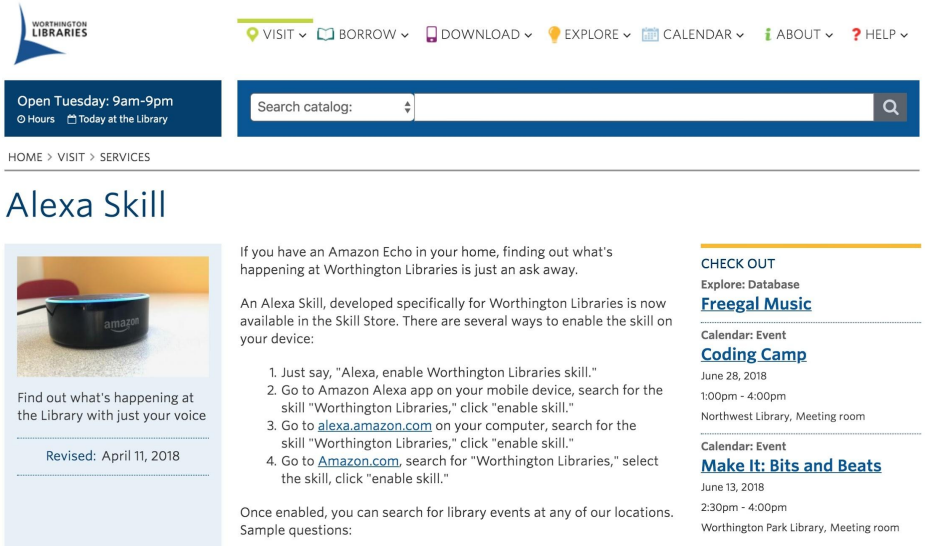
Google Trends imply queries associated with voice-related commands have risen >35x since 2008 after launch of iPhone & Google Voice Search



@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.

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

OPPORTUNITY: Voice design API kits available



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)

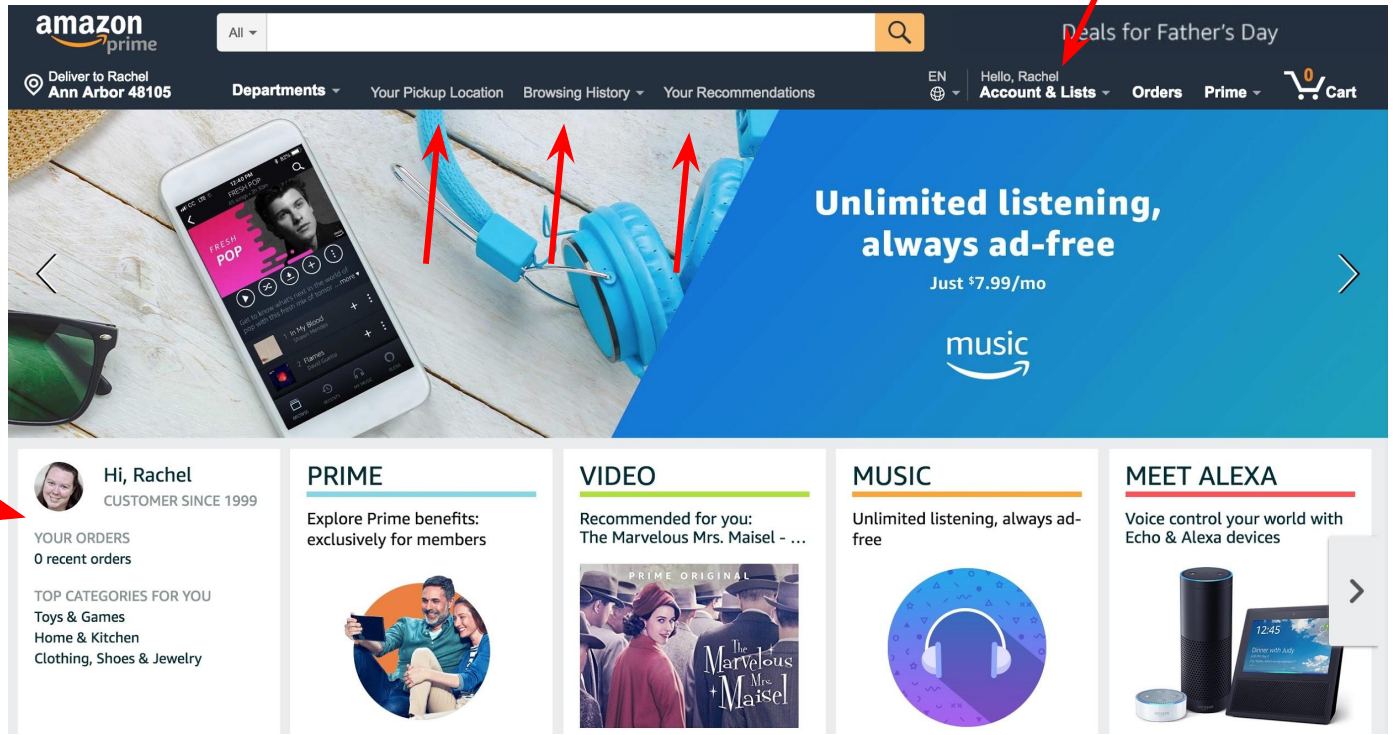
https://www.worthingtonlibraries.org/visit/services/alexa-skill

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

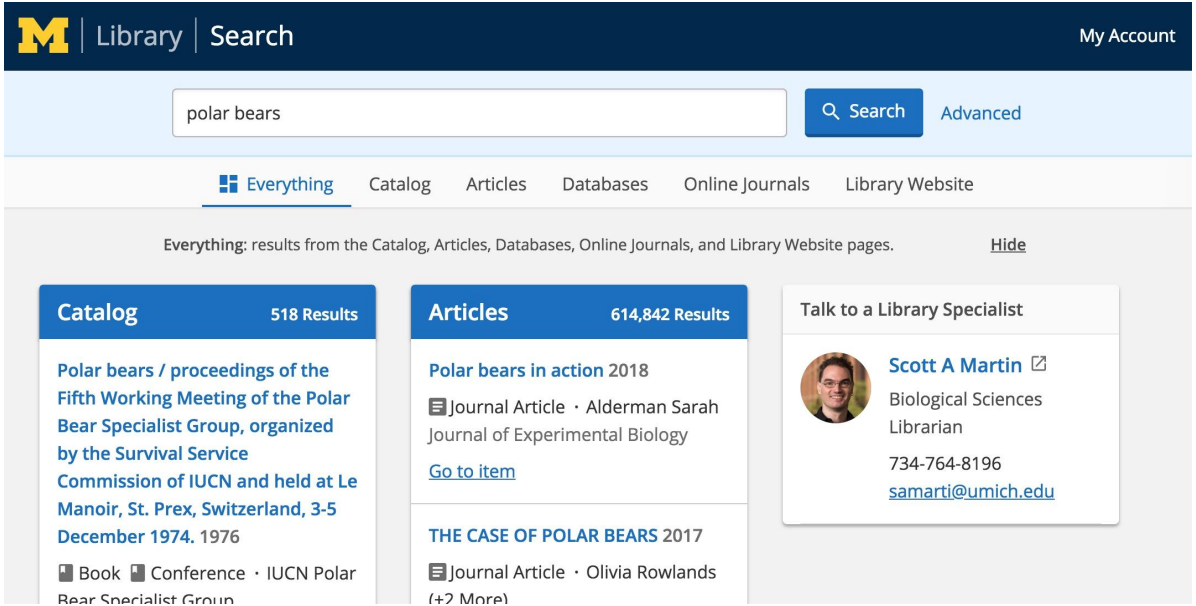


CHALLENGE: Privacy, ethical, security concerns

- 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



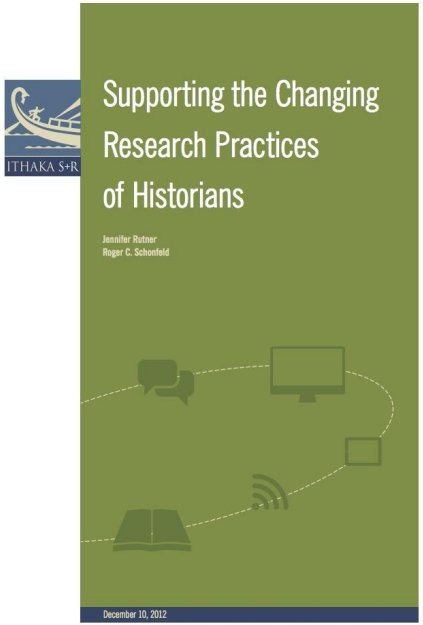
Full library discovery: http://orweblog.oclc.org/full-library-discovery/

CHALLENGE: Making “all the things” discoverable is hard

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



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



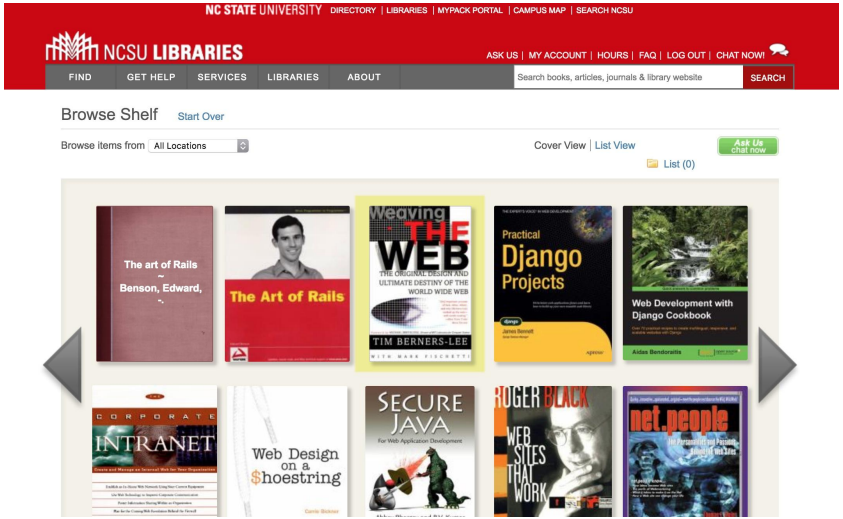
"While most historians recognize that Google has limited access to materials—it doesn't actually search "everything"—it was generally seen as the **most comprehensive discovery tool available** for certain types of searches. Google discovery tools' **convenience**, **ease of use**, and **overwhelming 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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