# Research on the Next-Generation Catalog

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# Call for research

- 2008 - Library of Congress Working Group on the Future of Bibliographic Control issued the report "On the Record"

- 2010 - ALCTS Task Group responding to the report declares the "Year of Cataloging Research"

# Agenda and methodology

- What is a next-gen catalog?

- Why research in this area?

- Areas of needed research/research questions
  - Scope: next-gen catalog design and functionality
  - Sources: formal literature and discourse on library mailing lists (especially NGC4Lib)
  - Caution: Undertake literature review!

# What is a next-gen catalog?

- Catalog 2.0/3$^{rd}$ generation OPAC?
- Web 2.0 features?
  - faceted browsing, federated search, ability to handle several metadata schemas, alternative displays
- Architecture?
  - faceted browsing search interface, current generation catalog with community features, hosted catalog, open-source software, open source components, commercial ILS products (Lindahl, 2007)
- Other?

# Why research in this area?

- "Build-it and they will come" approach has been used

- Outside discovery tools not integrated with the catalog

- Next-gen catalog features not based on large-scale evidence

- Rich content contained in library records not being exploited

# Areas of needed research

- Functionality and features
  - general function of the next-gen catalog; usefulness of various features

- Cost-benefit
  - libraries seek for economies of scale with shrinking budgets

- System design
  - indexing, file and index design and structure, and display/interface

# Functionality and features (1)

- Are we willing to have PACs that work the same way, that have the same conceptual underpinnings, so that customers might have a chance at understanding how library interfaces work? (Steven L. Carr, NGC4Lib, June 22, 2006)
  - Evaluation of a particular next-gen catalog across institutions
  - Offer a vetted next-gen "test catalog" to libraries and survey how many would use it if they knew it would be used by other similar libraries
  - Using sandboxes (common testing environments) to create collaborative and open-source next-gen catalogs

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# Functionality and features (2)

- How do existing tools in catalogs help quantify customer use and satisfaction? (Mark Andrews, NGC4Lib, July 7, 2006)

  – Identification of libraries using a specific qualitative measure in next-gen catalog and results of these libraries' studies

  – Identification of available user evaluation measurement tools in use in next-gen catalogs and studies of the benefits/drawbacks of each

  – Report findings of specific qualitative measure used in live next-gen catalog

# Functionality and features (3)

- Are there things users expect next-gen catalogs to do that they don't? What are those things? (Jonathan Rochkind, 2009)
  - Observing user behaviors in catalogs to identify "hidden agendas" of users
  - Survey of catalog users to identify catalog deficiencies in features or functionality
  - Using catalog-related reference question analysis to identify deficiencies in next-gen catalogs

- What features are necessary in a catalog to support the user's tasks?
  - Using observation techniques to identify key features in next-gen catalogs
  - Aligning next-gen features with FRBR (or other conceptual model) user tasks : a comparative study of popular next-gen catalog features with user tasks

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# Functionality and features (4)

- Which features are more heavily used in next-gen catalogs? Which features are not? What implications does this use have for efficiency? Is heavy use indicative of usefulness, or inefficiency?
  - Next-gen catalog features : a comparison of their use across different types of institutions
  - Using search logs to analyze the efficacy of heavily used features in next-gen catalogs

# Functionality and features (5)

- Does patron tagging in next-gen catalogs improve search results?
  - Comparison of subject search results in next-gen catalogs with/without patron tags
  - LibraryThing tags vs. controlled vocabulary in next-gen catalogs : a comparison of search results

- Has the faceting of subject headings in next-gen catalogs improved results for users?
  - Subject strings vs. facets : search results across next-gen catalogs

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# Cost-benefit (1)

- What are the quality of service indicators for next-gen catalogs? What are the quality of experience indicators? (Andrew Houghton, NGC4Lib, June 21, 2006)
  - Using QoS and QoE indicators to evaluate next-gen catalogs, via a communications ecosystem analysis (methodology described by Kilkki, 2008)

- What catalog enhancements get the biggest bang for the buck? (Kevin Kierans, NGC4Lib, July 11, 2006)
  - Identify cost/benefit ratios for various catalog features via analysis of usage logs and cost of feature

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# Cost-benefit (2)

- Do next-gen catalogs increase usage of the catalog? Do they increase circulation? What other impacts on usage of collections do next-gen catalogs have– e.g. use of full-text, ILL loans, etc.? (David Walker and Michael Doran, NGC4Lib, Sept. 24, 2009)
  - Longitudinal studies of:
    - Circulation statistics in libraries with next-gen catalogs
    - Full-text usage in libraries with next-gen catalogs
    - ILL requests in libraries with next-gen catalogs

- What is the cost/benefit ratio of a next-gen catalog in terms of staff in a library, resources, etc. vs. the current catalog?
  - Longitudinal study on staff patterns, task times, personnel costs, training, etc. required for next-gen catalog compared to earlier studies of catalog

# Cost-benefit (3)

- Which next-gen catalogs currently available are more efficient, user-friendly, and cost-effective?
  - Identify factors to use in analysis, then cross-vendor/ cross-institutional study of catalogs

- What barriers currently exist for libraries to switch to a next-gen catalog?
  - Survey of library directors, interviews, focus groups to identify barriers
  - Identify obstacles found in previous studies on library automation projects, and compare with obstacles encountered in transitions to next-gen catalog

# System design (1)

- How many (MARC or other metadata schema) fields are not currently indexed in library catalogs? Which fields might be useful to index? (MCDU project)
  – Fielded search comparison of several next-gen catalogs; indexed field comparison of several next-gen catalogs

- Are there fields which could be utilized better in the display? Which fields? (MCDU project)
  – Using MARC fields identified by OCLC study (Smith-Yoshimura, et al., 2010) as high occurrence, compare with LC and other catalogs display of fields

- How do next-gen catalogs display infrequently used (MARC or other metadata schema) fields?
  – Using MARC fields identified by OCLC study (Smith-Yoshimura, et al., 2010) as low-occurrence, compare with LC and other catalogs display of fields

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# System design (2)

- What are some issues of authority control in catalogs with faceted browsing? How can these be overcome?
  - Analysis of search logs for name and subject searches vs. click analysis of facets
  - Analysis of false hits in facet browsing in next-gen catalogs

- How closely do next-gen catalog designs match the IFLA *Guidelines for Online Public Access Catalogue Displays (2005)*? Do these guidelines need to be adapted?
  - Compare several next-gen catalogs with IFLA guidelines and report results
  - Critical analysis of IFLA Guidelines against a successful next-gen catalog

# System design (3)

- Should a customer be able to choose a user interface?
  - Develop customizable user interface with user-centered design approach
  - Graphical interfaces in online catalogs : their use and efficacy
  - User personalization features in next-gen catalogs : a survey and analysis
  - An experiment of user modeling of search queries in next-gen catalogs
- How do next-gen catalogs meet the challenges presented by new/emerging technologies?
  - Mobile catalog interfaces : an analysis of challenges for interface design (ALA session June 26, 2010 sponsored by ALCTS Form and Function Interest Group may discuss this)
  - A survey and search log analysis of next-gen catalog search widgets (e.g., widgets placed on social networks, LibGuides, course management sites, etc.)
  - Next-gen catalogs and touch screen technology: an exploratory study

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# System design (4)

*Remaining questions derived from Yee and Shatford-Layne's Improving Online Public Access Catalogs (1998).

- What are the best default settings for searches of different types (author/name? work? subject)? What are the best backup strategies to suggest to users for whom these defaults are not working?
  - Survey and analysis of default search settings in existing next-gen catalogs
  - Alternative offerings in next-gen catalogs for no-hit search results : an analysis
  - Evaluation of guided, formulaic, and natural language searching in next-gen catalogs

- What is the most effective method of providing authority and bibliographic file integration in catalogs, while still preserving access to the syndetic structure of the authority files?
  - Analysis of authority and bibliographic file integration in next-gen catalogs

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# System design (5)

- What is the most effective method of displaying cross-references? Displaying relationships among serials?
  - Display of authority and bibliographic record cross references/serial relationships in next-gen catalogs : an exploratory study and guidelines for improvement

- Can relator terms found in bibliographic records be used to improve display of relationships?
  - Using search logs/focus groups to evaluate the implementation of relator terms in display of name heading search results

# System design (6)

- What is the most effective display and arrangement for multiple bibliographic records? What is the most effective summary display of multiple bibliographic records?
  - Testing of several different models of display and arrangement of multiple bibliographic records in focus group settings
  - Offering multiple views of large-hit result sets (clusters, ranked lists, graphical, FRBR-ized, etc.) : a study and analysis

- What is the most effective display of a single record?
  - User ratings of single record displays currently in use in next-gen catalogs
  - Extraneous and missing information in single record displays in next-gen catalogs : a focus group study

# System design (7)

- Do human-readable translations of classification notation integrated into the catalog improve search/browse? (For example, taking terminology of LCC class numbers [textual facets present in the LCC schedules] and using them in displays to improve results?
    - An analysis of search/browse behavior in catalogs using textual facets from LCC schedules
    - Using textual facets from multiple classification schemes (LCC, Dewey, NLM, Sears, etc.) to improve search/browse : a study and analysis

- What are the most effective public-facing names for search fields/ facet terminology in online catalogs? (Ex. Authors vs. Name, Subject vs. Topic, etc.)
    - Focus group studies of terminology used in a particular next-gen catalog, and analysis of improvements in user satisfaction based on altered terminology
    - Cross-institutional study of terminology used in next-gen catalogs

# System design (8)

- What is the most effective method of allowing a user to limit a search to the topic desired as a primary topic? Is it possible to utilize the first subject heading in the bibliographic record (the one assigned by the cataloger to most resemble the primary topic of the work)?
  - Implement a "primary topic" (e.g., 1st subject heading in MARC bibliographic record and/ or text representation of classification number) search in a next-gen catalog and report of results based on searches before and after implementation
  - Using "primary topic" as a ranking method in next-gen catalogs : experiment and results

- What is the most effective indexing and/or display for genre vs. subject headings?
  - Study of separate vs. combined genre/subject headings in next-gen catalogs, via search log analysis and focus groups

# System design (9)

- What is the most effective indexing and/or display for works by and works about an author?
  - Analysis of biography and literary criticism searches in next-gen catalogs
  - Analysis of false hit/no result name searches in next-gen catalogs
  - User evaluation of author search result sets : opportunities for improvement

- Which search limiting features are most effective? Does providing limits and search on physical format data (such as that provided in coded data in the MARC record) improve search results?
  - Comparison of search limit features of several catalogs, and testing use of additional limits using MARC codes

# Comments? Questions?

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Thank you, and good luck with your research!


Slides available at:

http://facstaff.gpc.edu/~aeklund/

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