

# Next generation catalogs: What do users think? Conclusions from the beluga project in Hamburg

Anne Christensen  
State and University Library Hamburg, Germany  
[anne.christensen@sub.uni-hamburg.de](mailto:anne.christensen@sub.uni-hamburg.de)

## Abstract

*Take metadata out of the ILS, if needed, map it to Mods, Dublin Core etc., index it with Solr, add a webservice: These are the common and standard-driven steps in the development of homegrown discovery layers and other catalog 2.0-tools that have started replacing the ever-sucking OPAC. However: What are the standards for the development of user interfaces and Web 2.0-features for next generation catalogs? Libraries benchmark their search tools against Google, LibraryThing, delicious and other services, but what do users think? Focus groups and usability tests play a vital role the development of beluga, a next generation research tool from Hamburg, Germany. beluga features faceted browsing, mashups with non-librarian generated metadata and a wide range of export functionalities, particularly for local learning communities. The presentation will focus on the users' reaction to these features, as well as the conclusions of this and similar research for the development of next generation research tools.*

Libraries worldwide have started rethinking and reworking their catalogs in order to increase the attractiveness and efficiency of their core information product. Accordingly, both vendors and libraries (or consortia) themselves have begun to develop so called next generation catalogs. In the last couple of years, all main vendors of Integrated Library Systems (ILS) have come up discovery tools, while the emergence of open source indexing solutions like Solr have inspired many libraries around the world to start their own, homegrown systems.<sup>1</sup>

The next generation catalogs comprise features such as

- The possibility to explore any given results set through , for instance with drilldowns that allow navigation through metadata.
- The enrichment of librarian-generated metadata with book covers, tables of contents, reviews and more
- The ability for users to contribute to the librarian generated metadata and to connect with other users
- The provision of innovative interfaces that encourage discovery and exploration
- The promotion of the re-usability of metadata and content through interfaces and linked data<sup>2</sup>

## ***beluga – a next generation catalog project in Hamburg, Germany***

The development of a homegrown next-generation catalog is also the aim of the beluga project in Hamburg.<sup>3</sup> The project is partially funded by a grant from a local E-Learning

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<sup>1</sup> Breeding, Marshall. "Discovery Layer Interfaces." Library Technology Guides. 22 May 2009 <<http://www.librarytechnology.org/discovery.pl?SID=20090522541107177>>

<sup>2</sup> Linked Data - Connect Distributed Data across the Web. 22 May 2009 <<http://linkeddata.org/>>.

<sup>3</sup> Christensen, Anne. beluga - ein katalog 2.0-projekt der hamburger bibliotheken. State and University Library Hamburg. 22 May 2009 <<http://beluga-blog.sub.uni-hamburg.de/>>.

consortium, and its main objectives are the development of a new discovery tool for bibliographic data from all libraries in the Hamburg area and the connection of this tool to course management systems used at the five public universities (OLAT, Blackboard, StudIP, Moodle, and CommSy). A third prototype has gone online in April 2009, several more are to follow until beluga can replace the traditional OPAC. It currently features an index with 4.7 million entries (mostly metadata, some fulltext), a simple search interface, drilldowns and drillups, mashups with LibraryThing for book covers and Google Book Search for tables of content, a homegrown relevance ranking algorithm and numerous export functionalities, especially for course management systems.<sup>4</sup>

### ***Methods of user-driven development***

All prototypes of beluga have been and will be tested by different user groups. Including users in the development of services is a very important pillar of the library 2.0-idea; moreover and working together with users has proven to be a source of inspiration and motivation for the beluga team. Other projects are also following the same principles of agile development and user-centered design.<sup>5</sup>

The user-centered design process potentially comprises three methods, two of which can be employed with reasonable effort: Firstly, new or planned features are presented to focus groups where users can discuss and comment these features. Secondly, usability tests are conducted where users are given typical tasks and being interviewed while solving them. The third method are extensive anthropological studies, which have examined the information seeking behaviour of students and researchers very closely. Such studies have for instance been conducted at the University of Rochester (NY, USA)<sup>6</sup> and in Arhus (Denmark)<sup>7</sup>. Obviously, such extensive research cannot be financed everywhere, but these two studies in particular are so insightful for any library 2.0-project as they help to understand next generation students and their needs.

### ***Findings of focus groups and usability tests***

We tested and discussed prototypes of beluga and typical next generation catalog ideas with 16 faculty members and 21 students in 4 focus groups and 7 usability tests. All participants were enthusiastic about the idea of a new catalog and happy to be included in the development process. What are our findings?

Personalization, specifically the opportunity to create lists and thus keep track of one's literature, seems to be a very promising feature. However, when it comes to sharing lists with others, users are not so enthusiastic. Reservations abound: Faculty members felt that their lists were often very personal and would need revision and continued updating before being made public. Students said that they would not want others to profit from lists that had been a lot of work to compile in the first place.

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<sup>4</sup> [beluga](http://beluga.sub.uni-hamburg.de/). 23 May 2009 <<http://beluga.sub.uni-hamburg.de/>>.

<sup>5</sup> Lindström, Henrik, and Martin Malmsten. "User-Centred Design and Agile Development: Rebuilding the Swedish National Union Catalogue." *Code4Lib* 5 .2008-12-15. 22 May 2009 <<http://journal.code4lib.org/articles/561>>.

<sup>6</sup> Foster, Nancy Fried, and Susan Gibbons. *Studying Students: The Undergraduate Research Project at the University of Rochester*. Chicago: Association of College and Research Libraries, 2007.

<sup>7</sup> Denmark's Electronic Research Library (Deff), Kongelige Bibliotek (Denmark), Handelshøjskolens Bibliotek (Copenhagen, Denmark), Syddansk Universitetsbibliotek, and Statsbiblioteket (Århus, Denmark). *The Hybrid Library*. Århus: Statsbiblioteket, 2006. <<http://www.statsbiblioteket.dk/publ/fieldstudies.pdf>>.

Users also dismissed the idea to enrich the catalog with metadata from Amazon. We figured that people would be happy to see as much information about a title as possible, especially since studies showed that online bookstores like Amazon are the go-to place when looking for literature.<sup>8</sup> Yet both students and faculty members made a strong case for the neutrality of the catalog, accepting only „neutral“ information like tables of content and renouncing the inclusion of reviews and ratings from non-academic users.

The motivation of users to contribute to the catalog - either with ratings, reviews or tags – is low: In the unlikely event of their adding any significant content, they would feel uncomfortable sharing this with strangers. It also became clear that as far as recommendations are concerned, opinions of people from a trusted network actually do matter. Obviously the idea of sharing content and lists is not bad in the first place, it just seems as if the catalog was not the right context to do it, but rather course management systems or social networks. A possible direction for the further development of next generation catalogs is the aggregation of this content. Standards for a future exchange of social metadata are already under development.<sup>9</sup>

Quite surprisingly, users in the usability tests for beluga complained about the simplicity of the user interface, specifically the lack of an advanced search interface. This strook the team as very odd, given how seldomly the advanced search is used in the current catalog. Obviously it seems to be very surprising for users to see such a simple interface in a library catalog. However, when people started using the simple search, they quickly forgot about the advanced options because the drilldowns seemed to help them a lot.

The fact that users kept looking for an advanced search interface may indicate that users don't benchmark library catalogs against Google – at least not consciously. But what do they expect? We asked students to write down everything they always wanted to know about library catalogs and put their questions in a black box. The results of this survey showed that users are oftentimes very insecure about the underlying search mechanisms of a catalog and feel that they need to get some sort of feedback regarding the terminology they employed in a search. A next generation catalog can react to those suggestions by offering features like relevance ranking, spell checking and the integration of controlled vocabulary in the search – the latter, however, with a focus on providing the users with a clear feedback about what the machine is doing.

Users also seem keen on discovering resources in the OPAC and experiencing what is often referred to as serendipity. The drilldowns invite users to browse a collection, and if named understandably, are a feature that is very quickly understood. Apart from that, displaying new or very popular titles seems to be a very good idea. Students in particular also call for starting points for topic-related searches. Interestingly, our suggestion to embed selected bibliographies compiled by professors to meet this demand was declined by about half of the participants. Students have reservations concerning the timeliness of professoral lists. But there still is an obvious potential for both faculty and subject specialists to work together on selected bibliographies for certain topics, thereby transforming the next generation catalog into a knowledge hub.

As far as recommendation services are concerned, the mining of circulation data seems to be a reasonable idea since students especially seem to be very interested in learning

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<sup>8</sup> De Rosa, Cathy. Perceptions of Libraries and Information Resources: A Report to the OCLC Membership. Dublin, Ohio: OCLC Online Computer Library Center, 2005.

<sup>9</sup> Majjala, Ere. "SODA : Simple Objects for Describing Activities." 12 May 2009. ELAG 2009. 23 May 2009 <<http://internal.ulib.sk/indico/elag/prezentacie/1workshop.pdf>>.

about the resources that are used extensively by their peers. Librarians are often harboring reservations about the usage of circulation data for this purpose, but a scholarly recommendation service based on usage statistics from a large number of libraries, still seems to be a possibility to improve catalogs that is worth exploring.<sup>10</sup>

The search interface of beluga also features a visualization of the database's content by media type. Users have proven to be very fond of visualizations in general, but they did not approve this particular one. Instead, they suggested a shelf browsing functionality and graphical representations of topics and contexts. Attractive visualizations are essential when it comes to providing a better user experience – another aim of next generation catalogs which, alongside with the provision of mobile services, seem to be gaining importance very quickly.<sup>11</sup>

## **Summary**

The findings of this research are very similar to other studies, for example an implementation von vuFind at Yale University<sup>12</sup> as well as an implementation of Bibliocommons at Queens University.<sup>13</sup> The rejections regarding the production of user-generated content may disappoint some people in the library 2.0 movement. It does not look as if the next generation catalog would yet emerge into a conversational tool.<sup>14</sup> There is however evidence that interfaces and web standards in next generation catalogs will leverage the dissemination of bibliographic data and digital content from libraries to other platforms, especially course management systems and social networks. The participation of users in the design of these export processes as well as the design of search interfaces and visualizations is a way of bringing the idea of library 2.0 into life.

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<sup>10</sup> Pattern, Dave. "Free book usage data from the University of Huddersfield." Self-plagiarism is style 12 Dec. 2008. 23 May 2009 <<http://www.daveyp.com/blog/archives/528>>.

<sup>11</sup> Bell, Steven, Brian Mathews, John D. Shank, and Jill Stover. Designing Better Libraries. 23 May 2009 <<http://dbl.lishost.org/blog/>>.

<sup>12</sup> Bauer, Kathleen. "Yale University Library VuFind Test—Undergraduates." Studies of Yale University Library Digital Services and Resources. May 2008. Yale University Library. 23 May 2009 <<http://www.library.yale.edu/libepub/usability/yulstudies.html>>.

<sup>13</sup> Whitehead, Martha, and Steve Toub. "User-Generated Content and Social Discovery in the Academic Library Catalogue: Findings From User Research." Oct. 2008. Access 2008, Hamilton, Ontario, Kanada. 23 May 2009 <<http://www.slideshare.net/stoub/usergenerated-content-and-social-discovery-in-the-academic-library-catalogue-findings-from-user-research-presentation>>.

<sup>14</sup> Lankes, R. David, and Joanne Silverstein. Participatory Networks: The Library As Conversation. [Chicago]: American Library Association, 2006.