

Findings from WorldCat Local usability tests

July, 2009 – September 2010



WorldCat Local continues to evolve to provide academic and public library users with access to print, digital and electronic items from local, group, and global collections in ways that people increasingly expect. Our users expect WorldCat Local to be accommodating—offering a simple search box, an advanced search page, the absence of silos for different types of material—and to be revealing—with relevance ranking, different editions of the same work clustered together, evaluative content (like summaries and cover art) and faceted browsing.

The User Experience Research and Design group at OCLC helps shape that evolution through studies we conduct in collaboration with member libraries. Over the past eighteen months we have conducted five tests at seven institutions: Northeastern Illinois University, The Ohio State University, The Pennsylvania State University for the HathiTrust Digital Library, The University of California, San Francisco, The University of California, Santa Barbara, The University of Illinois, Springfield, and The University of Washington. In addition, we benefit from studies of WorldCat Local others conduct, including, recently, those by Western Washington University and York St John University. This summary of selected findings of recent tests supplements one we prepared in 2009, “Some Findings from WorldCat Local Usability Tests Prepared for ALA Annual, July 2009.”

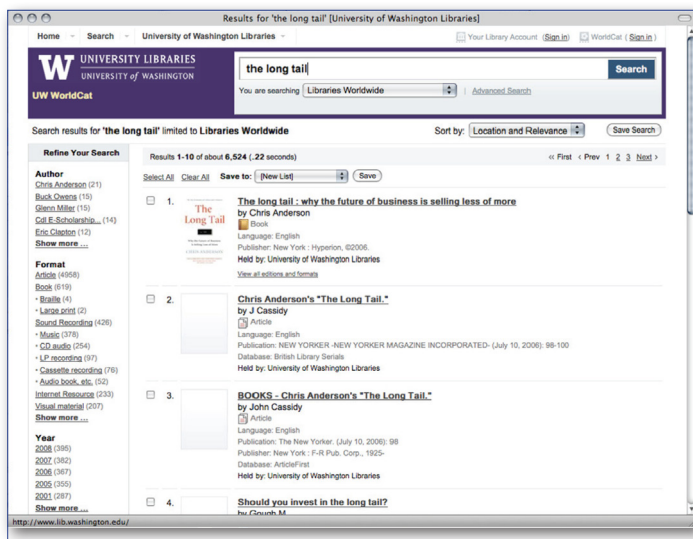
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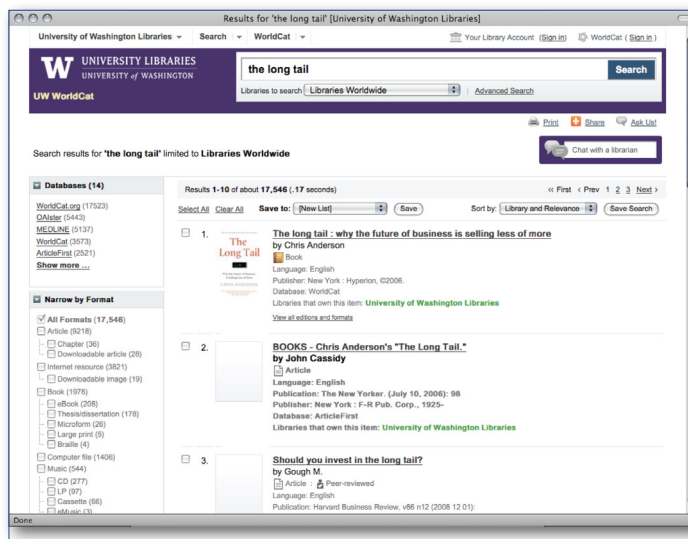
Our main areas of focus in these recent assessments have included: access to licensed content; single search across databases; making the path to content shorter and clearer; and improvements to facets. In addition, we have tested a WorldCat Local instance customized for the HathiTrust Digital Library, addressing issues including viewing and searching full text, the relation between print and electronic versions, and a traverse that moves back and forth between a discovery environment and a full text viewing environment—under the particular circumstances of HathiTrust content (those results are not summarized here). In recent tests we have focused more on known-item searching than on exploratory searching or browsing. The tasks we’ve given participants in these tests have been associated with academic work—study, teaching, and research—rather than with leisure. Our forty test participants were college undergraduates, graduate students and faculty about evenly divided between the sciences, social sciences, health sciences and the humanities.

Although recent tests did not include public library patrons or reference staff, we do try overall to have the roles of

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Search result, July 2009



Search result, December 2010

participants and the tasks we give them reflect what we've learned in ongoing work to develop personas for the principal users of WorldCat Local: academic library users at work, public library users at leisure, library staff supporting users. In these recent tests we have sought participants from the sciences, social sciences, health sciences, and education in a way that reflects the popularity of those disciplines.

Most of these tests were conducted as hour-long task-based sessions with one participant using a production or prototype system, accompanied by a facilitator. Some were conducted in libraries with a facilitator present in the room. Others were conducted remotely with a participant in an office, a departmental lounge, or at home with a facilitator on the phone. Observers—OCLC and member library staff—could view tests via WebEx and review recordings made with Camtasia. In tests conducted in the OCLC Usability Lab we've begun to use eye-tracking to reveal patterns in the ways our test participants pay attention to the parts of pages.

This sort of test, with participants working alone, thinking aloud, and then answering questions produces performance data where patterns can give us some confidence about what works and what doesn't. Meanwhile, we notice different participants making the same points again and again across tests:

- licensed journal article content is very important to academic users;
- getting items, not just finding out they exist, is what matters;
- current content is a primary criterion for academic users;

- known-item searching is very important: faculty and graduate students ordinarily, and undergraduates often, know what they want before they come to the library catalog;
- a short, predictable, reliable, path to content is a primary criterion for library catalogs;
- libraries are highly valued for making materials available, and not so highly valued for providing guidance to them.

These patterns are striking and suggestive. But we can't learn from the tests we conduct, with their small convenience samples, whether these views are broadly representative. Different methods and much larger samples are needed to produce reliable findings about the goals, values, practices, and concerns of various user groups. A number of large scale studies conducted by others have improved our understanding of our users and their practices, and placed what we've observed in context. Among them are several interesting recent studies:

- Project Information Literacy at the University of Washington. "Truth be Told: How College Students Evaluate and Use Information in the Digital Age." A study of more than 8,000 undergraduates on 25 campuses
- Ithaka S + R. Faculty Survey 2009: "Key Strategic Insights for Libraries, Publishers, and Societies." Fourth in a series of surveys conducted every three years, covering faculty attitudes and practices
- Connaway, L. and Dickey, T. "The Digital Information

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Direct access to electronic resources from search results

Seeker: Report of Findings from Selected OCLC, RIN and JSIC User Behavior Projects.”

Analysis and syntheses of twelve studies conducted in the US or UK by non-profit or government agencies

OCLC’s Market Analysis group also conducts large-scale assessments of values and practices that inform our ongoing series of Perceptions reports.

What is being searched

An important finding from earlier tests was that users generally expect all licensed journal content provided by their institution to be accessible through WorldCat Local if any portion of journal article content is. Our ongoing addition of records for licensed journal article content (already totaling over 440 million records) together with subscription information that can now be included in the WorldCat knowledge base, and also a recently-introduced option for libraries to treat all items from a particular database as locally held, move WorldCat Local much closer to meeting this expectation. Testing with the HathiTrust Digital Library gave us a view of how scholarly users interact with a different kind of full content—materials digitized from library collections rather than licensed digital content.

This year we explored several other ways participants think about what is being searched.

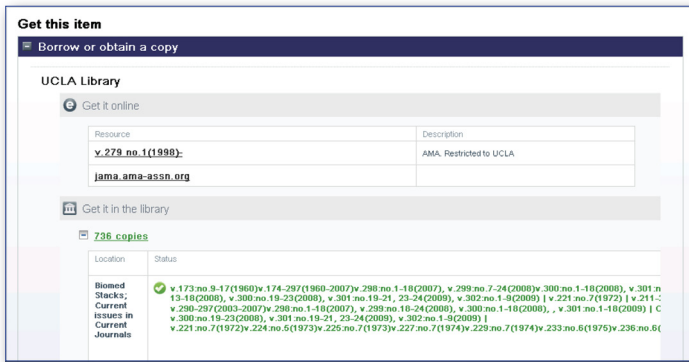
For our test participants, the definition of “local” included everything on campus, and only items held on campus. Participants expected to have access to materials held by any location or collection on campus. Even if a collection had access restrictions, however, test participants still expected to see those items treated as “local” in search results. We implemented a change that presents holdings from multiple local ILS systems together.

Test participants regarded any holdings that were not on campus as “not local.” Regional storage facilities or shared collections co-owned by the participant’s own institution but housed elsewhere were not local from our test participants’ points of view. Some library staff regard those as equivalent to the local collection, but our test participants regarded these as equivalent to the group collection, where access is quick and guaranteed, but not immediate. Test participants generally appreciated that items from the group collection are delivered more quickly and dependably than items from the worldwide collection might be.

We tested a fourth level of holdings in addition to local, group, and global levels. In our tests which were conducted in California, this fourth level was “California libraries.” That grouping proved uninteresting to our test participants. However, some test participants, those in the San Francisco Bay Area (an area of urban concentration) reported they are often interested in what materials are nearby—that is, within driving or transit distance. Some group-level libraries—and other libraries to which participants could expect access—that met this criterion of being nearby were a meaningful set for test participants. Participants reported they could obtain an item—or know they could not obtain it—for certain in just a day from those libraries. We introduced an option for libraries to interoperate with a supported ILS OPAC at a third level of relevancy. And libraries now have the option to configure one fulfillment button for each of four levels.

Test participants’ understanding of some terms was different from ours. We often refer to databases, meaning both abstracting and indexing services and suppliers of full text. In one test of searching databases combined with physical library collections only about half of participants used the term database or the name of a specific database when describing content of a search result. When asked specifically about databases, some mentioned distribution platforms like PubMed or PsychInfo, some mentioned indexing and abstracting databases like EBSCOhost. Some had a definition of database that was nearly meaningless in its broadness, “like an electronic file cabinet.” We saw more

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Links to local and on-local electronic resources August, 2009



Links to local and on-local electronic resources September 2009

awareness of specific databases sources in the sciences and social sciences than in the humanities.

Most of our test participants expected their libraries to have made good decisions for them about what databases to search by default. Few had selection of specific databases in mind when they searched in WorldCat Local. When prompted to change databases, most test participants went to the databases facet. Displaying that database facet at the bottom of the list of facets did not cause a problem with visibility: all test participants found it there. We plan to add a feature in or near the database facet to support selecting multiple databases.

We tested several approaches for showing users database groups created by their libraries, including a drop-down “In sources” list near the search box. In a test with undergraduate participants, about half of participants used it. In a subsequent test, a mix of graduate students and advanced undergraduates used this control even less often. As an alternative, we tested “Show search options” link leading to a choice of databases. Following this link was not the first step for any test participants, in a task that might have involved choosing databases. Neither was implemented. The choice of sources to search may ordinarily happen at the onset of a user’s search experience, for example at the WCL search box on the library page, rather than a few steps in, in the WCL interface. We plan to explore whether distributing a customizable search box that includes a way to choose disciplinary groupings of databases inserts this choice into a user’s traverse at a more appropriate stage.

Search results

We investigated how to communicate a sort option that combines relevance with location, and changes to facets.

The effects of location in the “Library and Relevance” sort order were not clear to many test participants. When results are sorted by library and relevance, highly relevant items

at the group level follow less relevant local items, with the jump in relevance generally occurring after page one of the search result, in a place users can’t predict. One way we’ve addressed that is by testing designs with tabs or facets against our present approach of sorting. Public library patrons in earlier tests and college undergraduates tested recently demonstrated strongly favorable reactions to our showing local, group, and global holdings on separate tabs. Advanced academic users had more mixed reactions, and asked questions (about whether the tabs are cumulative or mutually exclusive, about what is enumerated after the “Libraries that own this item” label for each item) that made us want to refine this design further and test again. Another way we’re addressing the complex mix of relevance and location in sorting is through ongoing changes to our relevance algorithm to demote less-relevant local material.

We made changes to clarify the terms used on related parts of search result pages. The label for the drop-down menu for selecting local, group, or global search changed from “You are searching” to “Libraries to search,” the language for sorting by “Location and relevance” changed to “Library and relevance,” and the “Held by” label in brief search results changed to “Libraries that own this item.”

We, and others who test WorldCat Local, sometimes see some unexpected confusion or uncertainty among test participants about which items in search results represent books, which represent articles, and even about the relationship between journal descriptions and article descriptions. The planned increase in evaluative content—cover art, summaries, reviews, tables of content—should help identify and distinguish these kinds of items on Item Details pages. On brief search results, the icon for material type is carrying a lot of weight. It may be that academic users do not really have a clear picture of the items catalogers have so systematically described until they see the article or hold the book.

Authentication

As part of our single search assessments we explored several alternatives for asking users to log in before viewing data from licensed resources in cases where logging in is necessary because the user is not IP authenticated or is using a proxy server.

We tested a prototype that included some placeholder entries in brief search results that invited users to “Log in to see this result from...” and named a licensed database. All of our test participants disregarded these items in search results, whether or not they were the first item in the list. Many said that those items lacked the crucial matching search terms and so weren’t worth attention, and many said that logging in just to view a description, rather than the full item, was not worthwhile. In an alternative prototype participants willingly and capably accepted an authentication challenge that interrupted them after they had done a search but before they saw any results. Some described this as the usual course of events, logging in before they got under way. We implemented the authentication challenge as an interruption that precedes viewing any search results the first time a user searches any database that requires authentication.

Library staff observing tests expressed a desire to customize the language of this challenge—to use the local idiom for naming the credentials being asked for, and what the level of access will be for users who don’t log in. The language of the authentication prompt—the message, the remote login button text, and the link to unauthenticated searching—are now configurable in the OCLC Service Configuration, User Interface Options module.

Facets

We tested designs for a Format facet combining check boxes with a hierarchy of format types. Test participants used the redesigned facet spontaneously and successfully to select one or several formats, and to eliminate just one format. A hierarchical format facet with check boxes is now part of WorldCat Local.

We explored participant expectations for a full text limit and facet. We confirmed that test participants expect “full text” to mean full text available at their institution, not full text that may be available to others but not to them. Most test participants looked to the format facet for a way to limit a search result to full text. Having categories that distinguish full text, digital images, and digital audio mattered more to our test participant than having a category that combined them. Test participants had reported and demonstrated uncertainty about what the term “Internet resource” might

designate. The format hierarchy now allows us to be clearer about various types of digital materials, and we have improved the terms used in the format facet. Items previously listed only under “Internet Resource,” which we will change to “Online content & media,” can now be found under a more revealing parent facet, if we can determine their type. For example, eBooks now appear as a sub-facet under Books instead of under Internet Resources.

We tested designs for a Journal Title facet, which participants understood and used successfully. We tested designs for a limit to peer reviewed content. The first design we tested included the value “Peer reviewed” as part of the Content facet. Some test participants found it there, but most looked elsewhere first, usually to the Journal Title facet or Format facet. We currently identify peer reviewed items in brief search result. We will add a limit among the facets.

Edition clustering and FRBR

Earlier tests resulted in a clearer and more prominent path to all the different editions of a work that our FRBR-based clustering brings together, including a “View all editions and formats” link on brief search results. Subsequently, we looked again at how well scholarly users are served by the default edition we choose to show together with this link. Do they prefer our default edition, or would they prefer some other one? All test participants simply followed our path to the default edition. Those test participants who, when asked, said they cared about different editions—in general, more advanced academic users—reported that they assumed the default edition was the most suitable one. Which edition would actually be most suitable differed from participant to participant: some preferred the most recent edition, others the most recent locally-available edition. We plan to show the most recent locally-held edition.

The editions page now has a format facet with checkboxes like the format facet on brief search results.

We found electronic versions of books were somewhat hidden when they were not the default edition. In a case where our default edition is not available in electronic form but another edition in the same work cluster is available in electronic form, no test participants would have discovered the electronic version without prompting, and most advanced academic users remained unaware of it even when prompted. We are currently developing changes that use the WorldCat knowledge base to show links to a corresponding e-version when a user is looking at a print version on brief or detailed views.

Getting physical copies

We assessed several aspects of Item Details pages for getting access to local, group, and global materials. We found unnecessary information that was an impediment when it was more visible than it should have been, and essential information that was hard to find when it took even just one more step to reveal it. Both of these cases show the value of a short path and the substantial cost of every extra click.

In a WorldCat Local system configured so the group libraries were expanded, rather than collapsed, under the “Get it from a library in this group” heading, nearly half of test participants, seeing the expanded list of group libraries, mistakenly thought they needed to check availability at individual group libraries. Only some understood that they could simply request the item without investigating exactly where it might be available.

In several tests we found necessary information was less visible than it should be. Determining the local call number was not a problem for test participants when the call number was visible on Item Details pages without their taking any action. However, when the call number was one click away (typically for serials) behind a “View Item Details” link, most participants did not click on the link and did not see the call number. Our local holdings project will help with this by showing local holdings data without users needing to click on a link to view details.

We prototyped some shortcuts that brought fulfillment options together in one section on the page. Our gathering together a summary of various print and electronic fulfillment links from around the Item Details page and repeating them together in one place was not valued by test participants. It added a click rather than saving a click, and the contextual information that would guide them in their decisions—information about the availability of local holdings, for example—was elsewhere on the page. The short path must have contextual information users need to make a decision.

Shortening the path to electronic items from search results

Because a short path to electronic resources is so important, we tested several designs for direct links to electronic items on brief search results. We saw some contention between this link and the small format icon, which some test participants wanted to use as a path to electronic content. Eye tracking studies showed that moving the links further to the right did not result in increased attention to them. We will continue to assess the performance of the View now link, and refine its appearance and placement.

When our test participants interacted with the View now link, the pane of links behaved the way they expected it to. When there were multiple links most participants expressed a preference for making the choice themselves, rather than having a default choice made for them.

Most participants expressed a desire for Google Preview links to be included in this list even when full text was available because viewing the Google preview is fast. We tested a prototype with these links on a separate tab when full text links were also present and the design performed well.

Links with details from the WorldCat knowledge base (which included source, information about journal volume, issue, and dates) proved more attractive to test participants than less full links. The term “full text” was often mentioned as a particular attractor, when it appeared in a link. When participants saw links without the terms “full text” they expressed concern that they would have to search again in order to retrieve the specific item they’d already found, or that they would have to pay.

We saw how important it is that the text of links communicate that the user is getting closer with each step. In the preview pane, links with the text “HathiTrust Digital Library” that would lead to specific items generated some anxiety among test participants, who suspected they’d have to search again in the entire digital library if they followed the link. Text like “From the HathiTrust Digital Library” would have been more reassuring.

Some test participants have proposed a direct path from brief search results to print holdings when no electronic version of an item is available. We’re investigating the feasibility of this feature.

Getting electronic versions from Item Details pages

We explored the relative value of local and non-local links to electronic resources. Most participants expressed doubts that they would have access to electronic resources through links not provided by their own institution, and a preference to have links that did not come from their own institution demoted in some way. Half of participants in one test felt that such non-local links to electronic items should not be included at all, and half felt they should be collapsed by default. We made a change to collapse links from “Other libraries,” and in a subsequent test no participants chose to expand that section. We made changes to Item Details pages—gathering links to electronic content in a “Find a copy online” section above the “Find a copy in the library section,” promoted local links and collapsed non-local links, and tested again and confirmed that we had improved the experience.

Test participants generally chose the first link for electronic access when there was a choice of links, and explained that this was because it was first: they expected that links were ordered with the best one first. They'd go on to the second only if the first failed, and they appreciated having that chance.

Some participants assessed URLs in an attempt to discover what would happen if they invested a click: would they have to search again, or would they immediately be shown the item they were interested in? Some participants expressed frustration or confusion when they were viewing an Item Details page for a specific article and then followed a link to a journal site, where they had to search again. This had been a confusing traverse for public library patrons in earlier tests, and some academic users expressed impatience with this traverse that took them further from the article before it brought them closer.

When test participants had a choice, they demonstrated a preference for links rather than a local OpenURL resolver button. Even in a prototype where the resolver button was more closely grouped with the other links for electronic access on the Item Details page, test participants generally overlooked it—not including it when they were counting alternative ways to get to an item. Some test participants expressed misgivings about the experience that might follow clicking on a local resolver button: concerns that there would be too many next steps and choices, and an expectation that the button was not as specific as a link. Most test participants did use a local resolver button when it appeared without any alternative links.

Current Investigations

An eye-tracking study currently in progress should help us understand how upper-division college undergraduates and graduate students assess the first page of search results from Google Books, Google Scholar, and WorldCat.org when they are looking for known items, when they are searching to discover items they don't yet know about, when they are looking for books, and when they are looking for articles. Even though it focuses on WorldCat.org rather than WorldCat Local, this study should give us information relevant to WorldCat Local, in particular about facets and formats.

We know from participant performance in tests and from librarian responses in the WorldCat Local Satisfaction Survey and elsewhere that known-item searching can be problematic. Log analysis confirms that the interplay of relevance and location in search result ranking is often a factor. Efforts are currently underway to understand known item searching problems and improve known item searching performance.