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Usability in the Pika discovery layer: an academic and public library case study

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The Online Public Access Catalog is often a patron's first introduction to a library and, in some cases, may be their only interaction with the library. Library catalogs have traditionally been clunky, dated, and not particularly easy to use. Discovery layers entered the library market heavily in the late-2000s as a tool to seamlessly display and provide access to library resources. With new offerings from vendors and a number of open source options, libraries now have many options to provide a better interface. Different library types have different needs, and may, therefore, choose different catalogs for their patrons. One discovery layer stands out, however, both for its innovative features and for its ability to be customized to meet the needs of multiple types of libraries. Pika is the open source discovery layer developed by the Marmot Library Network. This paper will look at the experiences of an academic library and a public library and demonstrate how Pika has met the needs of both institutions.

Keywords: Pika; Discovery layer; Public library; Academic library

Introduction

Marmot Library Network hosts an integrated library system, maintains a union catalog of two million titles, and provides related services to public, academic, and school libraries in Colorado and Associate Member libraries across the United States. In 2010, the Marmot Online Public Access Catalog Task Force evaluated Discovery Tools/Next Generation Catalog interfaces. Marmot looked at Encore, AquaBrowser, and VuFind before ultimately deciding on VuFind as the preferred catalog interface. VuFind was selected for the control over the user interface and the desire to make things as user-friendly as possible for different types of patrons in public, academic, and school libraries. Shortly after deciding on VuFind as the catalog interface, Marmot hired a developer to customize VuFind to meet the searching needs of patrons in a multi-type consortium. Starting from the code used at Villanova University, the Marmot implementation of VuFind was one of the first in public libraries, and one of the first in a multi-type consortium. The online catalog that Marmot currently uses has significantly forked from VuFind, and in recognition of this, the consortium adopted the name Pika to refer to the catalog starting in 2015.

In its current iteration, Pika boasts a clean, responsive design, and record grouping that allows multiple editions and formats to be displayed together in a single entry. Pika also includes catalog enhancement with Syndetics, Content Café, Novelist, GoodReads, and Wikipedia, and seamless integration with Overdrive, One-Click, Zinio, Hoopla, and Ebrary, EBSCO, and other electronic resources. It combines readers' advisory features including display of serials and similar titles, as well as more research-focused features such as automatic citation generation.

Academic library case study

Colorado Christian University (CCU) is a nondenominational private Christian university serving students at the main campus in Lakewood, Colorado, in learning centers across Colorado and in Texas, and through a robust online program. CCU serves a diverse group of learners with over 1,200 traditional undergraduates, 4,000 adult undergraduates, and 750 graduate students. CCU offers more than one hundred associates, bachelors, and masters programs, plus certificate and educational licensure programs in Business and Leadership,

Education, Humanities and Sciences, Theology, Biblical Studies and Applied Ministry, and Nursing and Sciences.

The CCU Library is located on the main Lakewood campus with a small satellite library in the Music Center. The library holds approximately 432,000 volumes of which over 75% are online resources, including ebooks and streaming video and audio. The library is open 92 hours a week and is staffed by four professional librarians, one paraprofessional, and approximately 10 student employees. The CCU Library joined the Marmot Library Network in 2010.

Before CCU joined Marmot, their online public access catalog had been Horizon Information Portal. This system was cumbersome to use both from a staff perspective and a patron perspective, and provided very few options for customization. When CCU joined Marmot, the consortium had just launched Pika. The CCU library opted to use this as their single OPAC, rather than providing users with a choice between the *Innovative Interfaces Inc.* WebPAC interface and the new Pika interface. Because of this decision to not introduce patrons to the WebPAC interface, CCU became one of the first Marmot libraries to launch Pika. Users were immediately impressed by the modern look of the interface and the ease of use. The librarians were pleased with the degree of customization.

CCU and Marmot conducted two sets of formal usability tests. While usability studies introduce biases into how users search for material (the nature of the question may lead users to perform a task in the way that they would not normally), valuable information can still be gleaned from this testing. The first set of usability tests were conducted in November 2012 and done with two undergraduate students and two graduate students. Half of the users (one undergrad and one grad student) had used the catalog extensively, and the others had not used the catalog at all. The usability study looked at the following tasks:

- Place a hold on a specific book found in the CCU catalog
- Place a hold on a specific book not found in the CCU catalog but available through Prospector (a union catalog to which CCU belongs; results from Prospector appear in Pika)

- Find and open an ebook on a specified topic
- Find a print book on a specific topic, published in a given year
- Find the due-dates on books checked out to the user
- Renew books checked out to the user

Overall the users stated that they liked the library website. Several trends were observed: users confused keyword searching with subject searching and universally thought that subject searching would be broader than keyword searching; users also attempted to search for ebooks by entering “ebook” in the search box. Users also accessed the advanced search far more often than would be expected (and is indicated by looking at usage statistics), and it was assumed that this was a result of how the questions were phrased and the artificial nature of the usability testing environment. Users also wanted more information when placing a hold, specifically a message that would indicate how they would be contacted and how long it was likely to take. Changes, including removing the option for subject searching from the basic search box and adding messages to clarify the hold process, were implemented into Pika. Additional usability tests were also conducted at public and school libraries, leading to additional enhancements to the system.

CCU’s second usability test took place in February 2014, prior to the rollout of new code which introduced record grouping and a responsive web design for use on phones and tablets. Four undergraduate students with varying degrees of familiarity with the library website and online catalog performed the following tasks:

- Find a specific title (not held by the CCU library) and request it
- Find three print books on a specified topic
- Determine the most recent edition of the books found
- Find additional online (ebook) resources on the same topic
- Find and request a recreational-reading book

- Find a movie that is currently available in the CCU catalog
- Find a list of the titles that the user currently has checked out
- Find the library hours
- Check the status of the holds placed earlier and cancel any that the user is not interested in

Overall reaction to the upgrade was positive. Comments included “more appealing,” “more user-friendly,” and “looks easy to navigate.” Students did have some difficulty noticing and understanding how to expand the dropdown box to display all editions, which led to some changes in design. Overall the reaction to record grouping was extremely positive and several users wondered why this was not standard in all library catalogs.

Public library case study

Flatirons Library Consortium (Flatirons) is a group of municipal public libraries in the North Metro Area of Denver. It is a growing consortium with three original members: Boulder, Broomfield and Louisville. In 2016, Longmont and Lafayette Public Libraries joined the three members, nearly doubling the size of the consortium in a very short amount of time. One of the big advantages in joining the consortium is the use of the discovery layer, Pika.

Public library users come from all different types of backgrounds. The users can be any age or experience level and can come to the library as advanced users, occasional searchers and everywhere in between. Flatirons has over 320,000 users that come from across the Northern Front Range of Colorado. The common thread between all types of users is that they expect searches to quickly and easily bring them to the results they expect. Many users expect to immediately and seamlessly have items be available to them. The high demand for this capability has public libraries looking for ways to provide these services to their patrons. Flatirons chose Pika, the Marmot Library Network version of VuFind, to fulfill these needs.

Before Pika, the consortium used WebPAC, the *Innovative Interfaces Inc.* searching interface, for public searching. This interface required users to

setup their limits before executing the search, unlike Pika where users can filter their search results after the initial search. It also required that all electronic records had to have bibliographic records created in the catalog in order to be discoverable. The transition to Pika was very well received by the public who found the search to be similar to other online search tools. It was also very well received by catalogers who no longer had to catalog the electronic resources. For some, the transition to filter results after the initial search was a challenge but after a year of using Pika, many staff members cannot imagine going back to the WebPAC interface.

Common threads

The library catalog shapes the perceptions of the library. An outdated, clunky website leads users to believe that the library will be the same way. A website that doesn't run on a smart phone is another sign of being dated. More and more, patrons are using smart phones and tablets to access the catalog. It is important that the site run equally smoothly regardless of device. Users from all libraries are used to commercial websites and have come to expect a level of design sophistication and visual appeal. Pika's design is clean and incorporates graphics (title images) in a way that makes the display easy to read. The single search box defaults to a keyword search but users can search by call numbers, ISBNs, series titles, and much more to get relevant results. The ease of searching and the visual attractiveness of the interface have put the public catalog closer to the heavyweights of Google and Amazon.

FRBR (Functional Requirements for Bibliographic Records) promised libraries for many years that they would have resources brought together as “works” to help users sift through the myriad of information resources. FRBR had not been well implemented across library catalogs and discovery layers. Pika actively groups works together in a FRBR fashion, while still displaying the different formats available to the users. This not only helps to identify the types of formats available to the user but condenses pages of results into a small amount of screen real estate. This unique feature of Pika was a primary reason Flatirons chose to use Pika.

A large percentage of CCU library users are online or distance students, and the Pika catalog has several features that make it easier for patrons to find

resources. The primary feature that students comment on is the icons at the top of the result set that make it easy to limit the results to ebooks or streaming videos. Record grouping also makes ebooks easier to find and use. Because the CCU library subscribes to several large ebook collections, there can be overlap with titles appearing on multiple platforms. Students used to struggle with trying to understand the difference between the two identical titles, but with record grouping the multiple results have been replaced with a single "Access Online" button. This is a significant improvement in user-friendly design.

One of the most important functions of the Pika interface is the integration with the Prospector union catalog. Results from Prospector appear at the bottom of the search results. These results link directly to the Prospector catalog and not only provide easy access for patrons, they also do a great deal to raise awareness that items are available from other libraries. Both Flatirons and CCU users benefit greatly from this feature of Pika because it easily allows them to find resources all over the State of Colorado as well as parts of Wyoming and Missouri.

The main source of the data in Pika is still the library catalog, but the resources that display in search results have expanded since implementing Pika. With the process of adding outside electronic resources come many advantages and many challenges. Patrons enjoy being able to access resources with a click of a button without having to go to a new search interface, re-login and redo their search. Pika has taken parts of these steps out of the equation. In Pika, Overdrive eBooks and eAudiobooks can be checked out or placed on hold directly from the catalog because Pika uses an API (Application Program Interface) to access the item directly. Other resources such as Zinio and Hoopla take the patron straight to the resource even though they may need to login again. Development has been striving to take these additional access steps out and is continuing to get better every day.

From a cataloging standpoint, Pika has also been revolutionary. Libraries subscribe to numerous electronic resource packages including ebooks, streaming video, and streaming audio. These packages change over time, and the process of keeping the MARC records up to date in the catalog was a tedious and time consuming process. Both Flatirons and CCU Library are in the process of moving these collections out of the ILS and "side-

loading" them into Pika. From a patron point of view, the change is seamless. The side-loaded records appear exactly as they always did in the catalog. From the cataloger's standpoint, however, the time savings are huge -- what used to take 1-2 days of work a month now takes only about 30 minutes.

A challenge of side-loading records is displaying the correct resource to the correct patron. When a patron searches a consortium catalog, it is important to only display results from the library that this patron belongs to. At Flatirons, electronic resources are owned by each municipal library and only available to that library's patrons. In the WebPAC catalog, all results were displayed for all patrons to see, regardless if they had access to the resources with their library account or not. Pika has introduced a way to only display resources to those who have access with their card. This results in less patron frustration and a much better strategy to get the right resources into the right hands. On the other side of the equation, CCU can take advantage of records that are loaded for the entire Marmot Consortium, such as Colorado State Documents, opening up access to resources that they otherwise wouldn't have.

Different options

When searching on their own, CCU students are primarily either looking for a known item by title or are looking for an item by a topic. Public library users, like those at Flatirons, are more likely to search for authors and series titles. Regardless of the search type (title or topic) users almost always perform a keyword search using Pika's single search box. Out of the box, Pika works well for public library users by boosting results for popular titles, authors and series. In the past year, Marmot has done a great deal of work in getting Pika to appropriately rank results for known item searches. While initially perceived as a problem (particularly by librarians) in academic libraries, this has largely been resolved with improvements to the ranking algorithm.

In public libraries, one of Pika's great features, the Book Carousel (a visual display of cover images of selected items), is very popular because it helps users to easily browse books in collections curated by librarians. At CCU, this feature has been underutilized. However, CCU librarians, like Flatirons librarians, have found it advantageous to highlight and promote certain collections such as

“The Year of the Bible” and “Children’s Award Winners.” While public libraries have found this easy to integrate into their websites and collections, CCU Librarians have just begun find the power in these curated lists to promote certain collections.

Pika allows a great deal of customization of the user interface. The interface can be customized with library logos and colors. Each library can determine which catalog fields are shown to the user; select which facets to display, in what order to list them, and what labels they have; decide whether to show links to additional information, such as summaries from Wikipedia; and choose whether to allow user reviews and ratings. Much of the system text is customizable; for example, the text that prompts the user to enter their library card number can be changed to ask for a student ID number. This customization allows each library to select the features that best serve their patrons.

Future enhancements

Pika is an essential part of how both the CCU and Flatirons libraries foster resource exploration. Future integration with the digital repository and article discovery services will only serve to make Pika even more indispensable. One of the new features that will be rolled out next year is the “Explore More” bar. This bar will include links to digital repository material and to EBSCO Discovery Service content. The digital repository is being built by Marmot to house local content including oral histories, digitized historical images, virtual art tours, theses and research projects, and more. By integrating these collections directly into the Pika catalog, the libraries are eliminating the siloing of resources that happens with so many digital repositories. Pika displays the digital objects right in the catalog along with other library resources, allowing users to link seamlessly between resources. For example, a patron could search for a local artist and see links to the virtual art tour alongside books written about or by the artist.

In the past, adding in search results from multiple academic databases or archival resources did not work for public libraries. Patrons were overwhelmed by thousands of results. The new developments are designed to only show relevant information and will allow library staff to curate the content to be useful for the patron. This will be a huge advantage for public libraries because they will be able to show off their resources without burying the user in too many

results. These results will not be presented in the regular search results but will show in an “Explore More” bar. This also helps to not overwhelm the patron with results while also allowing them to dive into a whole new set of resources. Future planned enhancements for the Explore More bar include integration with LibGuides, Drupal websites, and events calendars.

One of the next steps for Pika is to get search results into the Semantic Web, i.e. showing Pika results in Google results. Pika developers are looking to use linked data which is about using the web to connect related data that was not previously linked. Limited Linked data functionality is currently available, and enhancements, including geographical data, are scheduled to be completed in 2016. Schema.org will be used with possible plans for Bibframe 1.0 or 2.0. This would give the possibility that people searching Google for non-library resources could come across library items and become patrons.

A solution for everyone

Though it may seem that public and academic libraries would have different needs, Pika has been a splendid resource for both. Because Pika was developed in a multi-type library consortium, the focus from the very beginning has been on making a catalog that would work for all users, regardless of library type. Students, patrons, and staff all require a sophisticated search that quickly and easily gets the resources they need and showcases them in a clean, modern design. Pika is flexible enough to support a wide variety of search types to accommodate both public and academic libraries.

With the future of implementation of Linked Data, Pika will continue to meet users wherever they are. Libraries using Pika are excited to be on the forefront of such efforts. Libraries, both public and academic, look to innovation as they strive to remain relevant. Pika is a fantastic example of libraries pushing the innovation curve in online catalogs far beyond what any of the traditional vendors are doing. Pika has undergone extensive user testing as new features are added, ensuring that development doesn’t occur in vacuum. Catalog enrichment, social features, seamless eresource integration, FRBR-based record grouping, and linked data are all hallmarks of a catalog that truly seeks to meet patron needs. Pika is a standout offering among its competitors.