Usage in the New Age of Discovery

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Overview

A "new age of discovery" is dawning in the library world. Librarians are using a growing array of access and discovery methods to connect researchers to vetted information resources and services with speed and precision. By using these new tools, libraries are able to provide additional value to their constituents with a more fruitful discovery experience, and patrons are taking advantage of this by engaging in more and different types of use. As with every new age, there are new challenges, and in this we find librarians asking new questions on how best to interpret usage behavior and statistics in today's environment of wider and simpler access to research materials.

This white paper will illustrate the drivers for shifts in user behavior and how those behaviors are being reflected in the usage data librarians are receiving from their vendors. In addition, it will provide guidance on how to illustrate and understand the value of use in this new era.

From "Siloed Access" to "Conglomerated Access"

Previously, the primary method of access for many library users was through the library's web page. In many cases, users were guided to resources with an "A to Z" list of materials and databases. This "browse and select" or "siloed access" approach was useful at the time as it reflected a list of resources that had been vetted by the library staff and directed users to the resources that would most assist them with their research. The downside to this model and the driver for the shift in user behavior was that researchers were expecting federated access to a wider swath of information, similar to what they were experiencing with consumer search engines like Google, Yahoo, and Bing. The researcher experience that the siloed access model provided started to be perceived as constrictive and time consuming, and librarians were becoming frustrated with their constituents not utilizing the complete array of materials that they had purchased.

In response to these drivers, new models of access were developed to provide researchers with the experience and access they desired while also providing librarians with the ability to continue to surface credible resources and materials to their constituents. We will call this new discovery method "conglomerated access" in order to reflect the "gathering" of multiple resources in to a single user experience. The following are examples of some of the discovery services that provide conglomerated access to users.

Federated Search Services
Early forms of conglomerated access are federated search services such as ExLibris' MetaLib (http://www.exlibrisgroup.com/category/MetaLibOverview) and Serials Solutions 360 Search (http://www.serialssolutions.com/en/services/360-search) that provide access to a variety of content and resources with the benefit of allowing researchers to execute a single search across disparate collections of content.

This is generally done with the use of "connectors" that "call" the various content suppliers' systems and then translates the user's search in to the correct query syntax for each content provider for retrieval.   The results of the queries come back in a single results list, which users can then link back to the various content providers for access.

This model provides many tangible benefits to researchers and librarians, including a single point of entry to content from different providers, and it enables the shift from the siloed access model to the conglomerated model.

Web Scale Discovery Services

While federated search services continue to provide value to many libraries and research organizations, they are not without their shortcomings, most notably the following:

- Inconsistent retrieval due to each disparate vendor having unique indexes and search engines
- An oversimplified search experience dictated by the need to support searches across various vendor platforms
- Search latency due to "waiting" for results from a particular service or vendor

Web scale discovery tools like Ebsco Discovery Service (http://www.ebscohost.com/discovery) and Serials Solutions Summon (http://www.serialssolutions.com/en/services/summon/) are market responses to some of the concerns with "traditional" federated search tools. These services take an approach not unlike consumer search engines where they index the content on their own and use their own search engine for retrieval. By doing this, these services preserve the benefits of the federated search services (single search and singe results list) while overcoming the shortcomings of those services by controlling the search and discovery experience.

These services are gaining a great deal of momentum in libraries and are further driving the conglomerated access model.

Open Web Services

Sometimes to the chagrin of librarians, many researchers look to open web services as their primary entry point for research and tools like Google Scholar (http://scholar.google.com) and Microsoft Academic Search (http://academic.research.microsoft.com/) provide open web entry points for researchers. These tools also support the conglomerated model since they provide access to disparate resources from various providers, albeit in a somewhat less controlled environment than what is delivered by web scale discovery and federated search services.

Cross-Searching Within Vendor Platforms

A key component of the conglomerated access model is that given the different entry points discussed above, users are "landing" on vendor sites that easily enable and encourage "cross-searching" of multiple databases at one time. Aggregation services like EBSCO (http://www.ebsco.com) and ProQuest (www.proquest.com), which are the landing places for many researchers under the conglomerated access model, provide quick and efficient ways for researchers to cross-search databases above and beyond the database that contained their original document(s) that were of interest to them when they were directed to it by a federated search, web scale discovery, or open web service.

Conglomerated Access Model – Impact on behavior and usage

The siloed access method directed users to single databases and resources, and in general, researchers would stay in those single collections or make a choice to try another collection as a new and distinct query. The discovery tools and access models illustrated above provides users with conglomerated access where they are encouraged to access a wider array of resources across multiple databases and content providers – fostering a cross-search mentality for researchers. So given this model of access which inherently changes user behavior how does it impact usage reporting that librarians receive from their vendors?

Let's look at an example, to see what kind of impact cross-searching can have on usage reporting.

In this example, we'll look at a "mock" library's usage in 2010 and 2011. For the purpose of this example, we will assume the library in 2010 operated in a purely siloed access model and only shifted slightly to a conglomerated access model in 2011.

Suppose in 2010 that the library subscribed to 100 different databases that were each searched by different individual users 100 times – admittedly an unlikely scenario but it is laid out this way for illustration. At this point in time the library did not have any tools or access models that fostered cross searching. The breakdown of how search usage would be calculated is illustrated in the table below:

Database	User	Searches
Database #1	User #1	100
Database #2	User #2	100
Database #3	User #3	100
…	…	…
Database #100	User #100	100

So, in 2010 the library had a total number of 10,000 searches.

Now, in 2011 they have the same pattern of different individual users searching 100 databases 100 times, but now there is a new user (referred to as User #101 in the table below) who takes advantage of the cross-search capabilities being presented from a new vendor or product that was rolled out this year. This user also runs 100 searches but instead of against a single database, this user runs searches across all 100 databases. That is, in 2011 with the addition of user #101, their users ran a total of 10,100 searches – 10,000 of them were over single, individual databases and 100 were across all of the databases.

How many searches did they have for database #1 in 2011 with the addition of user #101? There were 100 searches that were on database #1 conducted by user #1, and there were 100 searches on database #1 from user #101 who was conducting cross-searches. The same pattern continues over all of the 100 databases and illustrated in the table below.

Database	User	Searches
Database #1	User #1 and User #101	200
Database #2	User #2 and User #101	200
Database #3	User #3 and User #101	200
…	…	…
Database #100	User #100 and User #101	200

In this example, the total amount of searching only increased by 1% when it went from 10,000 to 10,100. But, the number of searches for any particular database increased by 100%.

As you can see in the example above, even a slight change with the introduction of one new researcher who begins to utilize cross-search capabilities can greatly impact the usage for a particular database that a library subscribes to while not significantly increasing the total number of searches being run.

The Value of Use in the New Age of Discovery

The previous sections of this paper have laid out the shift from a siloed access model to a conglomerated access model and provided insight in to the drivers for this shift. In addition, it covered what the impact of this shift in behavior could be on usage reporting even with the introduction of a small increase in the total number of searches.

The question that still remains is "what should a librarian do when they are confronted by usage shifts like these?" The key thing to consider is the value of providing conglomerated or "compact" access points to the widest and most pertinent collection of materials available to the library's constituencies. Librarians can do this by articulating the value they are providing by using the conglomerated access model, such as the following:

Delivery of the most relevant results
Adoption of conglomerated access models allows researchers to take advantage of unified indexing and relevancy ranking provided by web scale discovery tools and content aggregators. Both web scale discovery and content aggregators generally take the approach of indexing content from various sources and vendors, allowing the delivery of consistent search results as well as applying robust relevancy algorithms to their results. This helps to direct researchers to the most useful content that addresses their question.

Serendipitous Discovery
By providing access to a wider collection of credible research materials in one location under a cross-search experience, researchers are able to discover content from subject areas and content collections that were previously not evident. The earlier siloed access approach directed patrons to specific databases with a constrained set up publications and materials. Broadening that access enables the discovery of new publications, research, and ideas.

Exposure to new terminology and nomenclature
As discovery models become increasingly unified across multiple collections, researchers can uncover new and emerging terminology, as solution providers deliver "faceted" or "filtered" views of search results that can include extractions of subjects and concepts that may have been previously unknown to the researcher. Providing these new pathways directs patrons to more sources of valuable research materials.

Driving innovation within the Library
Libraries need to keep pace with the expectations of researchers, and the adoption of conglomerated access models will help libraries to continue to be innovative by deploying new access methodologies that empower their researchers to access a wider breadth of content and engage in a richer discovery experience.

Conclusion

The shift from siloed access to conglomerated access is already here or will be arriving very soon for your library. User expectations will continue to drive this shift as well as the appearance and adoption of tools and services in the market that support and encourage this model. While this shift will result in different behaviors by your researchers and will by extension begin to impact the usage reporting you receive from your vendors, the value that you provide to your patrons will hopefully be easily justifiable for you and your library.