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Assessing the Value of Library Resources for Renewal Negotiations

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Abstract: This paper details a number of methods used by staff at the University of Tennessee, Knoxville Libraries throughout 2019 to assess the value of library resources and inform renewal negotiations for electronic resources. This paper discusses quantitative data from usage reports, access issue reports, citation analysis; input gathered from subject librarians; default annual cost increase caps; data analysis using PowerBI; and collaborative decision-making committees. Combining these evaluative methods provided a multi-faceted approach to the data to make evidence-based decisions on resource value.

Keywords: collection assessment, qualitative methods, quantitative methods, evidence-based analysis, resource renewals

1. Introduction

The University of Tennessee, Knoxville (UT) is the flagship campus of the publicly-supported University of Tennessee System. As of Fall 2019, 29,490 students in over 900 programs of study were enrolled at the UT campus. UT is classified as a Carnegie Research 1 institution.

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The UT Libraries employs approximately 150 staff and faculty to serve the UT student, faculty, and staff population. The Libraries is divided into twenty functional departments. Four of these departments make up the traditional "technical services" unit: Acquisitions & Continuing Resources, Assessment Programs & Collection Strategy, Cataloging & Metadata, and Enterprise Systems. Together these departments employ approximately 30 staff and faculty, with four serving as tenure-track faculty librarians.

In Fall 2018, the Libraries underwent a reorganization that shifted responsibilities, departments, and workflows for approximately one-third of the Libraries. Leading up to 2018, the Libraries had experienced numerous retirements, including two associate deans with significant responsibilities for the Libraries' management. As decisions were made to not replace these associate deans, four departments and six new middle-management positions were created to shift the load of supervisory and management responsibilities. Historic responsibilities were shifted in significant ways - the most significant of which was Collections joining Assessment Programs to extend a data-driven approach to collection management. Also, the Libraries' Business Services Office assumed management of the collections budget, which had previously been distributed among individual subject librarians and Collections staff. This office coordinates with financial offices across campus but serves only the Libraries.

While the changes created a chaotic backdrop for Fall 2018, it also formally enabled a stronger relationship between Assessment Programs and the traditional "technical services" departments. This link allowed staff to look at the collections with fresh eyes. Many of the collecting priorities up to this point had been around obtaining materials that aligned with institutional needs, including a significant effort to shore up online collections in the early 2010s. The Libraries had invested in several multi-year purchases from large vendors that provided access to dozens of essential databases for primary and secondary source research. In addition to investing in these purchases, the Libraries had

not received a budget increase in over seven years, and inflation for serials as well as online resources began eating away at the budget. Much flexibility had been lost and it was difficult to fund new and interesting resources that would support upcoming research topics, such as Big Data, and invest in new platforms and technology resources for learning, such as dynamic human anatomy tools. The simultaneous budget limitations and desire for new resources formed an awareness that the Libraries needed to be better stewards of the collections budget by creating more spending power on an annual basis. A recent Library Journal article shows that UT Libraries is not alone in this situation, with libraries at U.S. higher education institutions spending an average 76% of their budgets on continuing resources (Bosch, Albee, & Romaine, 2020).

This paper will describe efforts taken by staff in the Assessment Programs & Collection Strategy and Acquisitions & Continuing Resources departments to identify a multi-faceted approach to determining a resource's value when making renewal decisions and negotiating terms and cost. The resources followed will be: a large journal package; database access fees; and a non-journal database. As each resource type is addressed, the various qualitative and quantitative measures used to assess and inform decisions and negotiations will be discussed.

2. Journal Packages

Like most academic libraries, UT spends the vast majority of its collections budget on serials and other continuing resources. More than half of the serials budget, in turn, is spent through multi-year package contracts for journals or databases. The renewal of any of these contracts represents a major opportunity to review the value and fit of resources for our community's current needs. Since they were first introduced, these package deals have generated controversy by removing individual selection in favor of savings on a wide range of titles (Frazier, 2001). During the past year, the Libraries had the

opportunity to evaluate three major journal packages covering a wide range of disciplines. While each package differed considerably in the particular terms as regarded perpetual access to subscribed content, we used several standard measures to look at the value of the packages and compare the cost of the package to the cost of individual subscriptions to the most-valued resources.

Because these reviews were focused on renewal negotiations, the analyses were done separately within a broad template, rather than as an attempt to compare separate platforms. While an index may be available through multiple hosting solutions, journal subscriptions are generally available on only one platform at a time. Wood-Doughty, Bergstrom, and Steigerwald further suggest that even with COUNTER-standard usage reports, differences in platforms make cross-vendor usage comparisons unreliable (2019). The goal, therefore, was to identify the titles within each package that had shown itself to be particularly valuable to UT's constituents. We could then determine whether the package added significant value (or saved significant money) in comparison to purchasing individual subscriptions to those valuable titles. We followed Reed's advice in making price comparisons to the particular sets of journals under consideration (2016). The wide range of serial prices and differences in negotiations between libraries and consortia mean that our judgements as to the value of a package are not generalizable between libraries, although our methods should be applicable to many others.

We used Microsoft's PowerBI software to combine data from multiple years of usage reports along with information on package subsections and perpetual access rights from our library management system with price lists from vendors. PowerBI is specifically designed to simplify combining, analyzing, and visualizing data from multiple spreadsheets and other tabular sources (Becker and Gould, 2019). Using this software rather than spreadsheets alone simplified the maintenance of a single, shareable dataset for each package under evaluation while allowing for numerous ways to filter and graph the resulting voluminous data.

In selecting our set of 'valuable' journals for comparison, we considered several use-based measures. Because COUNTER reports provide usage on a monthly basis, we could easily calculate the average monthly usage for each title and for the package as a whole. Journals could then be ranked by considering their monthly usage as a percentage of the monthly usage of the entire package. Titles with no usage or very low usage could be removed from further consideration, although we found very few titles with absolutely no usage over the three-year period of these contracts. Modern integrated discovery systems seem to have allowed researchers to locate - and therefore demand - a broader range of material.

Cost-per-use has been a standard metric for assessing electronic serials since the development of online usage reports (Harrington and Stovall, 2011). Because we were assessing the value of continuing subscriptions, we first calculated an expected cost-per-use based on the average monthly use of each journal across the two to three years for which we had detailed and consistent usage data. Looking at average monthly use over an extended period insulates against spikes in the data that might result from a class assignment to read a particular article or other unusual demand. As article downloads have tended to increase over the years, this would be a slightly conservative estimate but would insulate us from locking in a high cost in the event of a downturn in use. This figure generally indicated that the package deals would be favorable to the Libraries.

As Harrington and Stovall have pointed out, a given month's usage from an online journal subscription may come from several years' issues of the journal. For titles where the library only has access to the archive while the subscription is maintained, this is inconsequential. But two of the packages assessed in 2019 included titles for which the Libraries purchased perpetual access to some backfile content. We therefore used the year-of-publication data provided in COUNTER JR5 reports to separate out uses of articles that were included in our permanent collection. We created two additional groups of articles that would illuminate the value of a continuing subscription; the first included only articles

that were published or available online pre-print during the relevant subscription year. The second included all of the articles published within the last five years that had not been subsumed into the purchased backfile. This represented articles for which we might need to pay copyright clearance fees for interlibrary loan requests, thereby significantly increasing our costs for access outside a subscription. For the package with the largest perpetual backfile, the percentage of use attributed to a current subscription year varied considerably and was quite small for many journals (Figure 1).

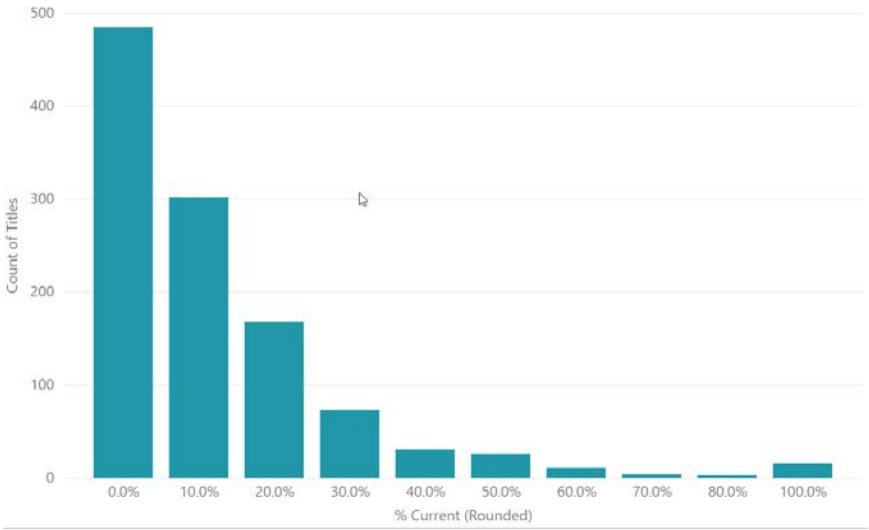

Figure 1: Chart illustrating the percentage of use attributed to current subscription year for a large journal package.

We then compared the value of the package to the combined list price of those journals with a cost per "copyright clearance" use of less than $35.00. This represented an estimate of the cost of replacing those uses by interlibrary loan. Twenty-one percent of the titles in the package fell into this group. Continuing only these journals would cost less than the initial offer for the package deal, so we began to consider what counter-offers for additional content or price reductions we could propose to the vendor. Changing to individual subscriptions

on this basis alone would save considerable money but would eventually impact our ability to maintain the backfile that represents the majority of our use. Forty-four percent of use from the backfile was of papers published within the five years prior to the download. While the content we owned would cover a great deal of demand, some additional content would likely be needed eventually. With this in mind, we took a closer look at the journals that we would propose to cancel if we moved to individual subscriptions.

As part of this closer review, we looked at preliminary citation information from a study to document all articles cited by UT researchers in published papers during the past five years. COUNTER statistics for article views and downloads illustrates that a journal is being used, but local citation references demonstrate that a journal has been useful. In addition to adding context to use statistics, a citation analysis can reveal valuable journal titles that usage statistics may overlook because the most cited journals do not always have high usage (Pastva, Shank, Gutzman, 2018; Gao, 2016; Ke & Bronicki, 2015). At the time this journal package was assessed, the citation data on hand had not yet been cleaned to standardize or deduplicate journal titles. Graduate students searched the citation data manually for journal names and variations of names and added citation counts to the dataset. As the citation analysis develops, it will provide more useful information for this type of journal package analysis, such as the number of individual articles cited from a journal and the publication dates of the articles from a journal.

For this journal package assessment, we compiled a title list that represented titles to keep if we did cancel the package. The list included all titles with a cost per "copyright clearance" use under $35.00 or cited by our researchers at least twice over the previous five years. This group of titles (30% of the package) represented 77% of the use of the package as a whole. We then calculated the total cost to subscribe individually to the complete list of titles to keep. The total cost was $4,000 more than the cost to renew the entire package. Mindful of the importance of maintaining the backfiles, we asked the vendor to include the

charges for continued backfile purchase into the package contract. What we learned from this analysis overall was used to illustrate that the package cost and the journals we would want to retain if the package were cancelled was very close. Annual increases over the next few years may shift the cost out of our favor, if they are too high. We used this data to negotiate with the vendor for a capped annual percentage increase for a three-year period with the option to extend the terms an additional two years. Before the three years are completed, we will replicate the assessment.

Other journal packages did not include such extensive backfile purchases, and for these, the deciding cost per use was calculated across all publication years, although the percentage of use from current and recent publications was considered. In future evaluations, different weights for the value of use from different periods as well as the relative value of citations and downloads might be used to more fully model the value of continued subscriptions. The perceived value of a journal selected by citation data changes depending on certain factors. For example, the perceived value would change if we knew that the journal is cited 14 times, but 13 of those citations are for the same article, or if all the citations are for older content that we have other ways to access. Another possible form of value-weighting was suggested by Richard Huffine (2015). A weight value for article views that save patron time by having access available to evaluate a source and potentially reduce interlibrary loan costs could be considered a “cost avoidance factor.” Under COUNTER Release 5, this metric might be calculated by comparing “Unique Item Requests” with “Unique Item Investigations” to consider the number of times a bibliographic record was opened without the text being downloaded, or by comparing “Unique Item Requests” with “Total Item Requests” for platforms that always provide HTML full text with an investigation.

For any of these analyses, and in selecting new resources, the cost to obtain an article by interlibrary loan or from a document vendor is central. We are now updating our interlibrary loan cost estimate to better reflect the costs in money and staff time of these substitutions in our particular institution.

3. Database Access Fees

Access fees, also called hosting fees or continuing service fees, are fees commonly incurred when collections are purchased for perpetual access. Generally, the fees are charged to cover ongoing maintenance and updates of the platform and costs associated with hosting and maintaining the content. Fees might also go towards the cost of adding new content, although there are many collections that are static with new content never added. These fees are typically charged annually but vendors may offer a pre-payment that covers several years and provides a slight reduction in cost over the term. Some vendors may also offer to convert the annual access fees into a larger one-time payment in exchange for collection maintenance in perpetuity. The fees vary by vendor. Fee increases also vary by vendor. Some fees never increase while some increase annually and others increase sporadically over time. At UT Libraries, the access fees for one vendor accounted for over $80,000 annually paid from the Libraries' budget in fiscal year 2019. Almost $56,000 was paid for collections where content is expected to be added and nearly $28,000 was paid for collections that are static or closed, with no content ever expected to be added. The original purchase cost for all the collections together was over two million dollars. In addition, the Libraries paid almost $400,000 in subscription fees to the same vendor in fiscal year 2019.

The purchase costs, original access costs, and current access costs for each collection were documented in Excel. The percentage of access to purchase cost was calculated (Figure 2). These percentages ranged from less than 1% to almost 20% with one outlying collection for which we have poor purchase documentation but that appears the Libraries purchased for a relatively small fee and pays an annual access fee of almost 94% the purchase cost. The vendor hosts collections on several different platforms, which adds to the complexity of negotiating access fees because the vendor incurs maintenance costs for each of those platforms. A pivot table was created to better understand the cost of the

collections by easily distinguishing the access fee cost paid by platform and the access fee cost paid to collections that continue to grow compared to the collections that are complete (Figure 3). Pivot tables were also created to isolate and easily view full details for each collection hosted by individual platforms. These different views of the data made it easier to identify the questions that needed to be asked and our desired outcomes.

	C	D	E	F	G	H
1	Access Fees	Original Access Fee	Purchase price pai	Percentage of purcl	Date purchasec	Growing?
23	$ 578.00	$ 867.00	$ 36,516.00	1.58%	June, 2011	complete
24	$ 3,067.00	$ 3,067.00	$ 30,348.00	10.11%	Dec., 2010	growing
25	$ 1,325.00	$ 1,325.00	$ 54,429.00	2.43%	Feb., 2009	growing
26	$ 4,408.00	$ 4,408.00	$ 29,400.00	14.99%	Dec., 2006	growing
27	$ 4,176.00	$ 4,176.00	$ 28,250.00	14.78%	Dec., 2006	growing
28	$ 877.00	$ 877.00	$ 30,388.00	2.89%	Dec., 2010	complete
29	$ 3,013.00	$ 3,013.00	$ 38,239.00	7.88%	Dec., 2010	growing
30	$ 1,739.00	$ 1,739.00	$ 42,180.00	4.12%	June, 2011	complete
31	$ 4,675.00	$ 4,675.00	$ 39,781.00	11.75%	June, 2009	growing
32	$ 2,676.00	$ 2,676.00	$ 59,755.00	4.48%	June, 2012	complete
33	$ 809.00	$ 809.00	$ 43,743.00	1.85%	Feb., 2010	complete
34	$ 8,455.00	$ 7,900.00	$ 9,000.00	93.94%		growing
35	$ 877.00	$ 877.00	$ 37,125.00	2.36%	Dec., 2010	complete
36	$ 877.00	$ 877.00	$ 30,388.00	2.89%	Dec., 2010	complete
37	$ 877.00	$ 877.00	$ 30,388.00	2.89%	Dec., 2010	complete
38	$ 5,060.00	$ 5,060.00	$ 36,695.00	13.79%	May, 2008	growing

Figure 2: Spreadsheet documenting access fees

Sum of Service Fees	Column Labels							
Row Labels	unique	Platform A	Platform B	Platform C	Platform D	Platform E	Platform F	Grand Total
complete	435	1250	6042	750.08	775	2975.04	15207	27434.12
growing	4094.5	500	3255	750.08	900		46446	55945.58
Grand Total	**4529.5**	**1750**	**9297**	**1500.16**	**1675**	**2975.04**	**61653**	**83379.7**

Figure 3: Pivot table displaying costs by platform and if content is added or static.

For the collections with access fees, we combined three years of usage data to show recent trends. Record views and results clicked were used as the most common usage measure from the COUNTER Database Report 1 (DB1). Many of the collections consist of primary source material and so usage is either non-existent for other COUNTER reports or excludes usage for certain primary source documents, making the DB1 report the best indicator of demonstrated use. Unfortunately, COUNTER-compliant reports were not available for all collections. For most non-COUNTER reports, full records accessed and full text accessed were the usage measures compiled for this analysis to demonstrate use.

Reports were consistent by platform, further illustrating the benefit to this assessment of looking at collections together based on platform rather than all together by vendor.

For some of the older platforms that appear to have outdated interfaces, no usage was recorded at all during a three-year period. This led us to wonder if there is an error in the non-COUNTER statistics or if there is really no use. Cost per use was highlighted for collections with lower than expected use or where the access fee as a percentage of the purchase price was quite high. Since newspaper archives make up a significant amount of the collections, we also looked for overlap of coverage dates in other collections, but none was found.

What we learned from this data helped prepare a persuasive argument that the access fees should be less. We felt that the cost of maintaining platforms was being paid through the large cost to subscriptions, which increase annually. Combined with a flat budget this allows us less buying power each year. Lowering the access fees would help the Libraries be better positioned to purchase or subscribe to new content. In addition, for some resources the fee cost per use is too high to justify even continuing to pay the access fees.

An initial email was sent to the vendor summarizing the findings and asking for a conversation about reducing or capping access fees. An early question asked by the Libraries was about consequences for non-payment of access fees. If this occurred, the vendor would provide the content as a hard drive (just the files without a platform or metadata for searching the files) and the Libraries could host the content. This scenario is not feasible and even for the collections with no usage statistics during a three-year period, we were hesitant to walk away because of the large investment paid up-front. The Libraries presented findings from our analysis of the collections by platform, but were aware that we were asking to reduce our expenditure without reducing our access to content with no real consequences to the vendor if they did not comply.

The vendor presented four options to reduce access fee spend. Each option shifted our spending from access fees to other products with that vendor. The

Libraries decided to start several new subscriptions to collections that had previously been identified as content desired by subject librarians. The vendor worked with the Libraries to make this viable, as the specific collections acquired were not originally included in the options presented. In exchange for the new subscriptions, the cost of the complete collections was reduced to zero. The decision, including the selection of new collections, was presented to the Libraries' Collections Committee to ensure a collaborative process. Even though we are spending the same dollar amount, we now receive access to more content, and likely content that would have been requested through our normal acquisitions process and incurred an additional cost. We can also cancel the new subscriptions in future years if we determine they are no longer needed without the access fee amounts returning.

This process highlights the perception of ownership. If the library does not host the content and has very little control over the content, does the library truly own the content? At the UT Libraries we now view perpetual purchases as a long-term cost-savings alternative to subscriptions and make acquisition decisions between subscription costs and perpetual costs by using what information we can to inform how long we expect a resource to be used. A recent example is a newly acquired foreign newspaper archive. The subscription cost, with estimated annual increases was compared to the purchase cost with annual access fees. The life of the subscription cost became more in year 11 than the total purchase cost with access fees. We asked the subject librarian if researchers would still use the resource after 10 years or if this a fleeting research interest. The subject librarian was able to describe how research interest has shifted within the department, tell us how many faculty members were currently researching in that geographic area, and that the department was actively hiring more faculty with research interests in that geographic area. With this information, we were able to decide that the perpetual purchase with annual access fees would likely be the best value in the long run.

We also now have conversations with vendors about access fees when purchasing new content. We try to negotiate for no access fees, capped access

fees, or pre-payment of access fees to help alleviate our tight budget and not have to carry the responsibility of paying an annual fee to keep access to a resource we most likely paid a large amount for up-front. In the future we hope to incorporate Huffine's (2015) idea to amortize the one-time cost of resources that are purchased with perpetual access to incorporate that cost into the cost per use measure along with access fees. This calculation may assist in future decisions for similar resources, when speaking with vendors about cost for new acquisitions and when illustrating the value of money spent to audiences outside the Libraries.

4. Non-Journal Databases

Non-journal and e-book databases can be complicated to assess. The COUNTER Code of Practice, Release 5 (2020) identifies various platform reports and database reports that can be used to help libraries understand how a database is being used by their patrons. However, not every vendor supplies usage statistics and reports that are compliant with the COUNTER standard. Here is where we have had to be more creative in identifying various ways for evaluating the value of a database. A conglomerated approach includes using any available reports from the vendor; "click" statistics from an A-Z database listing; electronic resource access issue reports; and qualitative data gathered from subject librarians.

The UT Libraries uses the SpringShare LibApps suite to coordinate many services, including listing databases on an A-Z listing; providing research support through a chat service; creation of topical and research guides; and ticketing services for several units, including electronic resource access issues. The functionality of the A-Z database listing offers the ability to identify where a database is linked within the LibApps suite, such as on LibGuides, as well as create reports on how many times a database was clicked on from the A-Z listing. This information is very helpful in understanding how often a database might be viewed and used when the reports from a vendor are sub-standard.

The Libraries has been using the LibAnswers part of the SpringShare LibApps suite as a ticketing system for electronic resource access issues since July 2017. Four staff from the Acquisitions & Continuing Resources department manage and answer these tickets. Since the inception of using LibAnswers, the staff have also coded resolved tickets according to the controlled vocabulary proposed by Goldfinger & Hemhauser (2016). Upon request, reports can be easily downloaded with statistics from the RefAnalytics part of LibApps. For example, Acquisitions & Continuing Resources staff noted multiple difficulties when attempting to renew a database in 2018. Staff had to request an invoice from the vendor four times before receiving the invoice, and then payment was prohibited because the vendor failed to provide the necessary tax and payment information to the university's Treasurer's Office. Repeated requests from the Libraries' Business Services Office for these updates went unmet. Statistics from electronic resource access issues revealed that there had been six reports of access being lost over a three-year period. All but one of the issues were reported by library staff, implying that most patrons had not been using the database nor noticed that access had been dropped. Without these access issues being reported and tracked in a systematic manner, we would not have been able to so easily identify the ongoing access issue.

Before making any cancellation decisions, Assessment Programs & Collection Strategy asks for input from the relevant subject librarians. Anecdotal information from subject librarians about the content or use of the resource will weigh into a decision to keep the resource; or adjust the subscription level and check back in one year to determine if the resource is still needed. The subject librarians have developed close relationships with the teaching and research faculty in their assigned disciplines, and have a better idea of how the resources are being used beyond the trackable, quantitative data currently available to libraries. In the case of the database described above, a summary of the ongoing renewal and access issues was shared with the subject librarian and a recommendation was made from the collection side to not pursue renewal, which was discussed further in-person. The subject librarian agreed that this

resource was not essential and had cost too much in staff time to continue pursuit.

5. Conclusions

These analyses provide us with data for the very tough job of determining if what we pay for a resource or collection is a good value to the UT Libraries. An upcoming challenge is that UT plans to migrate to a responsibility centered management (RCM) budget model. The idea behind the new budget model is that colleges keep the tuition dollars received for credit hours generated. The Libraries' budget is planned to come from the tuition-earning colleges and calculated as a percentage based on total student and faculty headcount. The percentage will be decided through a collaborative budgeting process with several committees. RCM will run parallel to our historic budget model for at least one fiscal year to allow time for adjustments to be made to the allocation formula. The result is that every budget on campus will be more transparent to the other campus units.

The measures used in this project and the evidence-based rationale for maintaining or cancelling resources can be used to advocate for the Libraries during the budgetary process. Usage, citation analysis, and time spent managing electronic access can demonstrate the collection's value to teaching and scholarship. Cost per use, platform or vendor access issues, and cost savings through negotiations for renewal and new acquisition decisions provide examples of good fiscal stewardship by showing that collection decisions are made and costs are negotiated based on data. If budget methodologies or external events (CoVid-19) result in a lower library budget, the measures discussed in this paper will be valuable to help identify resources to cancel.

As practitioners we often assess resources in response to real and immediate needs. In the examples provided above the need was driven by contract renewals and the concern to be good stewards of our budget. While we have made significant headway in using the measures described above for many renewal

decisions, we are constantly re-evaluating our processes, applying new measures, or viewing measures in different ways. With each assessment we learn something new that improves our practice for future assessments and for reassessing resources that we measured in the past. Continued assessments increase our view of a resource's value, and we are building towards a fully comprehensive picture. These tools provide a multi-faceted and flexible approach to investigate the value of collections.

References

Becker, L.T. & Gould, E.M. (2019). Microsoft Power BI: Extending Excel to Manipulate, Analyze, and Visualize Diverse Data. Serials Review, 45(3), 184-188. DOI: 10.1080/00987913.2019.1644891

Bosch, S., Albee, B., & Romaine, S. (2020). Costs outstrip library budgets: Periodicals Price Survey 2020). Library Journal https://www.libraryjournal.com/?detailStory=Costs-Outstrip-Library-Budgets-Periodicals-Price-Survey-2020

Counter (2020). The COUNTER Code of Practice for Release 5. https://www.projectcounter.org/code-of-practice-five-sections

Frazier, K. (2001). The librarians' dilemma: Contemplating the costs of the "big deal." D-Lib Magazine, 7(3). http://www.dlib.org/dlib/march01/frazier/03frazier.html.

Gao, W. (2016). Beyond Journal Impact and Usage Statistics: Using Citation Analysis for Collection Development. The Serials Librarian, 70, 121-141. DOI: 10.1080/0361526X.2016.1144161

Goldfinger, R.K. & Hemhauser, M. (2016). Looking for Trouble (Tickets): A Content Analysis of University of Maryland, College Park E-Resource Access Problem Reports, Serials Review, 42:2, 84-97. DOI: 10.1080/00987913.2016.1179706

Harrington, M. & Stovall, C. (2011). Contextualizing and Interpreting Cost per Use for Electronic Journals. Proceedings of the Charleston Library Conference. DOI: 10.5703/1288284314928

Huffine, R. (2015). Going Beyond Cost-Per-Use: Assessing the Value of Purchased Resources. Online Searcher, 39:6, 54–58.

Ke, I. & Bronicki, J. (2015). Using Scopus to Study Researchers' Citing Behavior for Local Collection Decisions: A Focus on Psychology. Journal of Library Administration, 55: 165-178. DOI: 10.1080/01930826.2015.1034035

Pastva, J., Shank, J., Gutzman, K.E., Kaul, M., & Kubilius, R.K. (2018). Capturing and Analyzing Publication, Citation, and Usage Data for Contextual Collection Development. The Serials Librarian, 74: 1-4, 102-110. DOI: 10.1080/0361526X.2018.1427996

Reed, K. (2016). Obtaining Journal Titles via Big Deals Most Cost Effective Compared to Individual Subscriptions, Pay-Per-View, and Interlibrary Loan. Evidence Based Library & Information Practice, 11(1), 66–67. DOI: 10.18438/B8132V

Wood-Doughty, A., Bergstrom, T., & Steigerwald, D. (2019). Do Download Reports Reliably Measure Journal Usage? Trusting the Fox to Count Your Hens? College & Research Libraries, 80(5), 694. DOI: 10.5860/crl.80.5.694