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The Librarian's Survival Guide to the "Big Deal": Tools for Unbundling

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Abstract

At Western University, like many other schools, journal package "big deals" (large, bundled collections of e-journals from the same publisher, purchased at a discount) have been seen as beneficial to the collection based on high discounts and low cost per use. When the Canadian loonie fell to 67 cents on the U.S. dollar in January 2016, it created unexpected financial challenges for collections management. We now had to consider new ways to find cost savings by canceling or unbundling resources, and big deals became a potential target. In evaluating these packages, we looked beyond cost per use, building on work done by the University of Montreal. This paper summarizes the iterative process Western University developed to evaluate and potentially unbundle less valuable big deals. We outline the additional criteria we considered (overlap, current year use, perceived value by faculty members, citation analysis of where our researchers published, and impact factor) and how we made data-driven decisions for unbundling.

Background

Western University (the University of Western Ontario) is a leading Canadian university located in London, Ontario, with 36,000 full-time students. Western Libraries supports the research, teaching, and learning of the university with eight service locations and an acquisitions budget of more than \$14 million. The monograph collection contains 5.4 million copies, as well as more than 4,000 print serials and 123,000 online serials subscriptions.

Western Libraries is structured around a liaison librarian model in which subject librarians are responsible for collections and their budgets within their respective disciplines. Interdisciplinary resources are purchased through a centralized collections budget with no specific subject librarian. The evaluation of these resources is under the purview of the Centrally Funded Resources Review Subcommittee. Historically, resources were evaluated lightly based on their renewal dates, to confirm their value based on use; as 2015 approached, it became clear that the times were

changing and so was the direction of this central subcommittee.

2015–2016 Currency Crisis

In the early months of 2015, the Canadian dollar began to plummet substantially. By January 2016, the dollar had fallen to 67 cents of its U.S. counterpart (see Figure 1). With 84% of acquisitions dollars being spent in U.S. funds and 77% of that dedicated to serials renewals, Western University had to address the deficit with which we were faced. By late September 2015, Western had published a news story explaining the impact of a weak Canadian dollar and annual publisher increases on the acquisitions budget and purchasing power there within. To begin, new serials purchases were frozen, and subject librarians were asked to evaluate resources within their disciplines to find savings. Much of the serials budget is spent on centrally funded, interdisciplinary serials packages (the "big deals"). To alleviate the pressure on the acquisitions budget from the dollar crisis, these resources had to be reviewed with a new eye and the goal of a 23% decrease in spend.

Figure 1. Canadian dollar exchange rate (Bloomberg L.P.).

A New Approach to Resource Evaluation

Similar to the experience of many other academic libraries, “big deals” have traditionally been regarded as good deals at Western. A low overall cost per use has been used as validation for this notion. In response to previous budgetary demands, Western has protected big deal subscriptions, instead electing to cancel individual title subscriptions and smaller database packages. This strategy, held by so many other libraries, has likely only provided positive benefit to large publishers, as they can easier consolidate and make their big deals bigger and, potentially, bloated.

The prospect of big deals being bloated deals presented Western with an opportunity to scan our subscriptions to find potential candidates for unbundling—breaking down the large deal and re-subscribing only to those titles with significant value to the university. Three primary factors were used for this pre-analysis evaluation: Overlap, variance in usage, and discount. Overlap, described in more detail later, was the amount of full text coverage

between titles in aggregate packages and individual publisher subscriptions. Titles with significant overlap would not need to be repurchased post-termination. Similarly, titles without significant recent usage would not need to be repurchased. The most important variable was discount, and in some cases, our national consortium, the Canadian Research Knowledge Network (CRKN), was able to negotiate significant savings off list price (over 80%). The package we chose to focus on, subsequently referred to as Package A, had a significantly lower discount, few titles with high usage, and high overlap, leading to the possibility of repurchasing a limited number of high value titles. This package contained 1,410 titles and was one of Western’s most expensive annual acquisitions, approaching the million-dollar level.

Determining these high value titles was the next step, and thankfully, Western was able to follow the lead put forward by Stephanie Gagnon and Vincent Lariviere of the University of Montreal. This concept of resource evaluation uses three primary factors: Usage, citations, and faculty survey data. Compiling

the data for these variables and others in a multifactorial analysis required a tool to manage the data and calculations. Microsoft Excel was used for this role. In terms of database design, Western again built on the work of others, as we used CRKN's Journal Value Analytics (JVA) spreadsheets as a starting point. The JVA is produced by CRKN to help inform libraries about renewals, and it contains individual title costs, impact, and usage, along with a calculated, aggregate score for each title. While we ultimately replaced the majority of the data that was originally included in these reports, they served as an excellent framework (see Figure 2). The following table shows the final database design. Note that several columns are hidden (e.g., negotiated price), but individual title pricing from EBSCO is included.

EBSCO, as our subscription agent, responded to our request for individual title pricing. They researched our list for Package A and three other publisher packages, and they determined which titles had ceased, changed formats, were transferred to other publishers, or moved to open access. EBSCO also communicated with publishers to identify discrepancies in our list and the publisher's.

Overlap Analysis

Simply put, titles overlapping with access from other sources would not have to be repurchased. To complete our overlap analysis, we used ProQuest's Serials Solutions' overlap tool, but there are many other proprietary and open source tools that would have provided equivalent results (e.g., EBSCO's Usage Consolidation or WorldShare). We used the ProQuest solution because Western currently uses Serials Solutions as our knowledgebase, which essentially pre-populated the overlap tool.

The next step was to import overlap data in the main analysis spreadsheet and limit out any titles with full overlap. Titles with partial overlap received a different treatment; all titles with partial overlap receiving the same weighted score. While more research is likely needed to determine the value of partial title overlap at a research-level institution, Western determined that an average one-year embargo would generally reduce the need to repurchase titles. This perspective differed highly among subject specialists, as many science, technology, engineering, and mathematics (STEM) disciplines required current year access.

Print ISSN	Title	Coverage Dates	Overlap	Subject/ Sujet	Subject Area/ Domaine	SNIP	SJR	USD 2016 EBSCO List Price	EBSCO Comment	2015 Total Usage	Faculty Survey Mentions	Western Publications	Weighted Total Score
0935-9648	ADVANCED MATERIALS	1998/01/01 - Present	Title Unique	Mechanics of Materials	Physical Sciences	3.8	7.857	16074		4335	5	8	9.326698126
0002-7294	AMERICAN ANTHROPOLOGIST	1997/01/01 - Present	Full Overlap	Anthropology	Social Sciences	1.147	0.818	569		1535	7	0	8.387761041
2169-9097	JOURNAL OF GEOPHYSICAL RESEARCH: PLANE	1997/01/01 - Present	Partial Overlap	Earth, Space & Environmental Scier	Physical Sciences	0	0	1521		436	8	0	7.479169236
0309-2402	JOURNAL OF ADVANCED NURSING	1997/01/01 - Present	Partial Overlap	Nursing (all)	Health Sciences	1.598	1.102	3501		4830	2	15	7.411809281
0002-9483	AMERICAN JOURNAL OF PHYSICAL ANTHROPC	1996/01/01 - Present	Title Unique	Anatomy	Social SciencesHealth Scien	1.253	1.328	3974		1292	5	7	7.181156991
1433-7851	ANGEWANDTE CHEMIE INTERNATIONAL EDIT	1997/01/01 - Present	Partial Overlap	Chemistry (all)	Physical Sciences	2.202	6.016	14484		6660	0	26	7.141371132
0043-1397	WATER RESOURCES RESEARCH	1997/01/01 - Present	Partial Overlap	Water Science and Technology	Physical Sciences	1.679	2.189	1610		1387	5	24	6.970600665
0740-3194	MAGNETIC RESONANCE IN MEDICINE	1999/01/01 - Present	Title Unique	*Radiology, Nuclear Medicine and	Health Sciences	1.421	1.988	3434		3741	0	74	6.910670846
0094-8276	GEOPHYSICAL RESEARCH LETTERS	1997/01/01 - Present	Full Overlap	Geophysics	Physical Sciences	1.648	3.493	4394		3003	3	30	6.763811156
0143-2095	STRATEGIC MANAGEMENT JOURNAL	1996/01/01 - Present	Partial Overlap	Business and International Manag	Social Sciences	3.305	7.909	3172		2195	4	16	6.684629111
1065-9471	HUMAN BRAIN MAPPING	1996/01/01 - Present	Title Unique	Anatomy	Life SciencesHealth Sciences	1.728	3.487	2722		1405	3	17	6.263058234
0001-1541	AICHE JOURNAL	1998/01/01 - Present	Title Unique	Chemical Engineering (all)	Life SciencesPhysical Science	1.353	1.098	3065		1294	3	25	6.177597725
0022-3751	THE JOURNAL OF PHYSIOLOGY	1997/01/01 - Present	Partial Overlap	Physiology	Life Sciences	1.589	2.724	7658		3072	2	17	5.663407904
0022-2445	JOURNAL OF MARRIAGE AND FAMILY	2000/01/01 - Present	Partial Overlap	Social Sciences (miscellaneous)	Social Sciences	2.575	3.241	1353		715	4	4	5.293183256
0021-9029	JOURNAL OF APPLIED SOCIAL PSYCHOLOGY	1997/01/01 - Present	Title Unique	Social Psychology	Social Sciences	0.852	0.548	1950		1133	2	7	5.263788342
0066-4812	ANTIPODE	1997/01/01 - Present	Partial Overlap	Earth-Surface Processes	Social SciencesPhysical Scier	1.895	2.363	1226		679	4	0	5.234101757
0008-543X	CANCER	1997/01/01 - Present	Title Unique	Cancer Research	Life SciencesHealth Sciences	2.046	2.956	1118		1419	1	24	5.232619048
1461-023X	ECOLOGY LETTERS (ELECTRONIC)	1998/01/01 - Present	Partial Overlap	*Ecology, Evolution, Behavior and S	Life Sciences	3.908	8.569	3186		1047	4	2	5.22305518
1359-0987	THE JOURNAL OF THE ROYAL ANTHROPOLOGI	2000/01/01 - Present	Partial Overlap	Anthropology	Social Sciences	2.089	0.741	1013		164	6	0	5.160416751
2169-8953	JOURNAL OF GEOPHYSICAL RESEARCH: BIOGE	2005/01/01 - Present	Partial Overlap	Earth, Space & Environmental Scier	Physical Sciences	0	0	1055		89	8	5	5.153027093
0953-816X	EUROPEAN JOURNAL OF NEUROSCIENCE	1997/01/01 - Present	Partial Overlap	Neuroscience (all)	Life Sciences	1.133	2.655	7462		1809	3	26	5.131547975
0947-6539	CHEMISTRY - A EUROPEAN JOURNAL	1998/01/01 - Present	Title Unique	Chemistry (all)	Physical Sciences	1.236	2.744	12431		2959	0	44	5.079140849
0048-3915	PHILOSOPHY AND PUBLIC AFFAIRS	1997/01/01 - Present	Partial Overlap	History and Philosophy of Science	Social Sciences	5.255	1.607	232		203	4	0	5.044320426
0023-852X	THE LARYNGOSCOPE	1997/01/01 - Present	Full Overlap	Otorhinolaryngology	Health Sciences	1.152	0.997	943		1336	2	30	4.986349653
0007-1323	BRITISH JOURNAL OF SURGERY	1998/01/01 - Present	Partial Overlap	Surgery	Health Sciences	2.706	2.849	846		931	3	2	4.965350749

Figure 2. Analysis spreadsheet.

However, one solution to the partial overlap question came in COUNTER JR5 usage reports. JR5 reports show usage of current year articles used within the same year. If a title demonstrated little or no current year usage via the JR5 report and carried partial overlap, it was concluded that the title was not required for repurchase.

Faculty Survey

In order to open a dialogue and inform appropriate decisions on behalf of our users groups, we sought input from university faculty members and graduate students. In February 2016, we developed a survey asking which journals were of high importance to their teaching and research. The first iteration of the survey was designed with Qualtrics and delivered to a small sample of subject areas via their liaison librarians in mid-February. The survey was sent to all remaining faculty and graduate students in mid-March with an end date of 15 days later. The survey contained five questions and was optional for respondents, of which there were 419. From the survey responses, a list of journals was developed to guide our decisions.

Several lessons were learned from the design and implementation of the survey:

1. Make communications to faculty clear and without library jargon. Ensure that outcomes are thoroughly communicated. Being transparent about the need for these processes will decrease confusion and frustration among users in the long term.
2. Do not put a limit on the number of journal title suggestions requested from respondents. Allowing respondents to freely share their ideas leads to further information for cancellation decisions.
3. Be specific. Once a list of possible repurchases has been developed, share it with faculty to encourage their feedback and ensure no titles have been overlooked.
4. Interdisciplinary research is expanding and often requires access to non-field-specific subject areas. Many interdisciplinary researchers may not know the exact journal title they may need in the future, but they do know the fields they will be exploring.

Sharing title lists will assist in defining important subject areas to faculty research.

5. Have an ongoing conversation with stakeholders detailing consortiums, big deals, open access, and budgetary streams. User groups often do not have a clear understanding of a serials versus a monograph budget or how consortial packages are managed.

Citation Analysis

We were also curious about where our faculty members publish, and we conducted a citation analysis as another facet of measuring deeper value of a resource (beyond individual uses). From a philosophical perspective, we asked ourselves: Is part of the library's job supporting our own researchers, and in turn supporting journals that publish our research? From an evaluative perspective, if our researchers choose to publish in a journal, have they judged it as a journal that is reputable or important in their field?

We compiled a list of citations from Web of Science and Scopus over the past 10 years, using the affiliation search feature to export lists of articles by authors from Western University or any of our regular collaborators (affiliated colleges, hospitals, and research centers).

Using Excel, we de-duplicated these titles and created citation counts for each journal in a master list. When looking at individual big deal packages, we matched their title lists against the citation analysis list, pulling out citation values for each journal and adding them to our spreadsheet. There was a learning curve as we experimented within Excel; we kept a cheat sheet of formulae developed to compare lists of titles. For example, we used this command to match titles on one sheet against titles on another (titles in column A on both sheets), copying over the citation count (in column D):

```
=index(citationsheet!d:d,match(a:a,citationsheet!a:a,0))
```

Interestingly, once we reached the decision-making process, collections librarians determined that the number of faculty publications was one of the least important aspects of the analysis, giving it a significantly low rating in our final analysis. Since gathering the data was quite involved, a lesson

learned might be to discuss the value of your individual criteria up front, though we remain hopeful that other interesting work can be done with our citation analysis lists.

The Decision-Making Process

Our data for Package A included a current list of titles in the package, COUNTER-compliant usage statistics (JR1, JR5), cost and cost per use, overlap, faculty survey counts, researcher publication numbers, and SNIP and SJR impact factors. As we examined the additional criteria, we noticed that many individual titles did have value to our university: They had been identified as core titles through the faculty survey and had a high number of publications by our researchers. We would likely want to repurchase these titles through individual subscriptions.

Scaling and Weighting Criteria

We developed the following process:

1. Scale and weight criteria.
2. Rank individual journal titles.
3. Create a list of recommended titles for buyback.
4. Communicate and make a final decision.

With 1,410 titles in this package, we could not go through the title list one by one and analyze its value. We needed a way to rank the value of each title and give it a score. We began by adjusting the scale of each variable to make the numbers comparable, using this formula:

Paired Comparison Worksheet

Criterion	A: Use	B: CPU	C: Faculty Publications	D: Uniqueness	E: Faculty survey
A: Use		A, 2	A, 3	A, 3	0
B: CPU			B, 3	B, 3	E, 1
C: Publications				D, 1	E, 3
D: Unique					E, 3
E: Faculty survey					

Criterion	Total	Percentage
A: Use	8	36%
B: CPU	6	27%
C: Faculty Publications	0	0%
D: Uniqueness	1	5%
E: Faculty survey	7	32%

Scoring:
0 - No difference/same importance
1 - Slight difference/one a bit more important
2 - Significant difference/one obviously more important
3 - Major difference/one much more important

Adapted from a worksheet from Mindtools.com

Figure 3. Paired comparison worksheet.

To use the worksheet:

1. List the variables you want to compare, assign them each a letter, and add them to both the row and column headers.
2. Compare each row variable with the one in the column above it. Decide which is more important, and score the difference in importance between the two.
3. Add up the values for each option, and convert to percentages if desired. Adjust the results if necessary.

For us, adjusting the results was vital. This was an iterative process—we did not determine a magic ratio we could use for all decisions. We used our initial set of weightings to rank titles, then looked at them for obvious problems: Were high-use titles ranked too low because they were more expensive? Were journals with multiple faculty publications ranked near the top even though few people read them? Plotting different variables and rankings in a bar graph helped us see how the titles moved as we adjusted our weightings.

Developing Buyback Lists

Once we were satisfied with our ranking system, we created color-coded buyback lists to share with Western's collections librarians: Green titles to buy back, yellow titles that may deserve a second look, and red titles that we were confident did not provide enough value to repurchase. We based these tiers on the cost savings we wanted. With an \$800K package, we hoped to only buy back \$300K worth of titles (greens) but were willing to repurchase up to \$500K and still consider unbundling a "win" financially. We broke these down by subject area and shared the proposed buyback lists with the relevant librarians. Librarians were asked to verify our recommendations and de-select green titles they felt were not worth buying back, or re-select yellow or red titles that they felt were vital to their subject area's collection.

Conclusion and Next Steps

In our largest attempt at unbundling (Package A), the buyback lists came back to us with far more requests

than we expected—enough that unbundling would not provide significant savings at this time. We found that librarians working with science-based subjects put a greater emphasis on impact factors than anticipated, and some others felt further consultation with faculty members was needed.

As a result, we decided not to unbundle Package A in this fiscal year but to renew through 2017 and add further consultation to our analysis to ensure we re-subscribe to the more valuable titles. In early 2017, Western University is participating in a journal evaluation survey conducted by the Canadian Research Knowledge Network consortium. Data gathered from this survey will help guide future unbundling of packages.

As a part of determining our next steps, we held a collections forum to encourage feedback on our processes. In addition to general discussion, we asked two specific questions:

1. What factors did you consider significant in choosing titles for repurchase?
2. What would a core journal title list look like, and would it be helpful for Western University or not?

Even though we did not unbundle Package A at this time, the consensus from the forum was that the data-driven process we developed and background work on the analysis were helpful. Performing a preliminary analysis of usage statistics, cost per use, package discounts, and overlap will remain our starting point to identify a candidate for cancellation. Adding to the analysis indications of deeper value such as impact factors (relevant to the subject area), faculty perceived value (through a survey and other consultation), and a citation analysis (looking at where our researchers publish) guides our view of the value of a big package deal. Finally, holding a discussion around which of these criteria were most relevant (using the paired comparison analysis), scaling and weighting individual journal titles, and creating a proposed title buyback list all helped us to look at package deals both holistically and in detail. We plan to continue collaborating with our national consortia and build on these methods for future unbundling projects.

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