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Evidence Based Library and Information Practice

Using Evidence in Practice

Transparency and Tiers: Restructuring a Publisher Deal with a Modified Decision Matrix

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Setting

The University of Colorado (CU) System consists of five separately administered libraries, located at four campuses and at three institutions (Boulder, Denver, and Colorado Springs). Each campus has grown substantially over time, and the budgets for library materials have not kept pace with increased demand for resources or the cost of serials inflation. The CU libraries are members of several consortial groups that negotiate competitive pricing and facilitate cooperative purchasing. CU Deans and Directors convened the CU Libraries Electronic Resources Team (CLERT), a representative group of librarians with acquisitions and collection development responsibilities, and charged them to negotiate consistent access, at the best possible system-wide pricing, for common needs. In addition to CLERT, most of the CU libraries also participate in the Colorado Alliance of Research Libraries (Alliance), a regional consortium of thirteen academic and research libraries. Like many consortia, participating member institutions benefit from sharing resources through cooperative purchasing and lending. The Alliance has successfully negotiated several license agreements for member libraries including major databases and journal packages.

Problem

The costs to participate in most consortial deals are typically based on publisher pricing and are generally lower than list price or the cost for a single library to participate on its own. One particular big deal journal package was called into question when eleven Alliance member libraries participated in the purchase; however, the four CU libraries paid for nearly half of the costs. The CU libraries questioned why they were paying such a large proportion and whether CLERT could negotiate a better deal for the CU System.

The historical cost distribution for this particular package was based on print journal expenditures. Overtime the burden of publisher increases were experienced disproportionately for the CU system who subscribed to nearly half of the titles in print when the package was converted to an online package. Most Alliance libraries shared a longstanding belief that CU Boulder possessed the greatest capacity for absorbing high inflation costs for serials because it had one of the largest materials budgets. Initially, this understanding possessed some truth, and CU Boulder traditionally subsidized the costs of shared resources by paying a larger amount.

However, CU Boulder experienced three rounds of budget cuts resulting in serials cancellations after the initial deal was negotiated and absorbing inflation became increasingly difficult. Other Alliance libraries felt similar economic pressures and could not absorb increased subscription costs either. The deal was in jeopardy of breaking apart. An Alliance task force was convened to find out what needed to be negotiated in the new contract and to recommend a more sustainable cost distribution.

Evidence

To demonstrate that the original distribution needed to be reevaluated, the task force gathered qualitative and quantitative data from participating libraries. Specifically, their first survey focused on two themes: 1) satisfaction with the current deal and 2) priorities for the new contract. The second survey included questions regarding each library's budget and willingness to renew. (Both surveys are available in the appendix.)

For a meeting with representatives from participating libraries, the authors of this article prepared a presentation to establish shared understanding, facilitate discussion, and gather feedback for negotiation with the publisher. Talking points included explanation of the history of the deal, overview of license agreement terms, and highlights from the survey. By anonymizing the libraries and their data presented in tables 1 through 4, this case study retains focus on methodology.

Table 1 includes qualitative survey data from each library about their total materials budget, the approximate percentage of their materials budgets that is dedicated to serials or ongoing costs, and the percentage of the entire materials budget and serials budget that is spent on this journal package. This illustrated the significant impact of the costs of this journal package for each library in the consortium.

Table 2 shows two different methods of calculating the collective benefit or cost avoidance from participating in the journal package. Both results demonstrate that libraries are saving money by participating in this package, but savings varies by institution. Even though the costs of the journal package are supposed be distributed based on historical spending, Table 3 illustrates how cost distributions are no longer aligned with the number of subscribed titles at each library. For example, Library K has 26.61% of the subscribed titles but pays for 33% of the costs for the package.

Knowing that a cost distribution based solely on subscription costs produced inequitable results, the task force calculated costs using other variables that are commonly used to determine pricing for academic journals, such as Full Time Enrollment (FTE) and usage

Table 1
Impact on Materials and Serials Budgets

Academic Library	$ 2015 Costs	% Contribution to 2015 Costs	$ 2015 Total Materials Budget	% of Total Materials Budget Spent on this Journal Package	% of Materials Budget for Serials & Ongoing Costs	$ Estimated Serials Budget	% of Serials Budget Spent on this Journal Package
A	$ 50,000	1.00%	$ 1,200,000	4.17%	90%	$ 1,080,000	4.63%
B	$ 100,000	2.00%	$ 1,200,000	8.33%	70%	$ 840,000	11.90%
C	$ 100,000	2.00%	$ 1,400,000	7.14%	80%	$ 1,120,000	8.93%
D	$ 150,000	3.00%	$ 1,500,000	10.00%	90%	$ 1,350,000	11.11%
E	$ 150,000	3.00%	$ 2,500,000	6.00%	80%	$ 2,000,000	7.50%
F	$ 200,000	4.00%	$ 3,500,000	5.71%	80%	$ 2,800,000	7.14%
G	$ 450,000	9.00%	$ 2,300,000	19.57%	95%	$ 2,185,000	20.59%
H	$ 450,000	9.00%	$ 5,800,000	7.76%	75%	$ 4,350,000	10.34%
I	$ 450,000	9.00%	$ 8,400,000	5.36%	60%	$ 5,040,000	8.93%
J	$ 1,250,000	25.00%	$ 7,000,000	17.86%	95%	$ 6,650,000	18.80%
K	$ 1,650,000	33.00%	$ 10,500,000	15.71%	80%	$ 8,400,000	19.64%

Table 2
Cost Avoidance

Academic Library	$ 2015 Costs	# Individually Subcribed Titles	$ List Price for Subscribed Titles	Cost Avoidance 1 = List Price for Subscribed Titles Minus 2015 Costs	# Titles in Package	$ Package List Price	Cost Avoidance 2 = Package List Price minus Costs
A	$ 50,000	30	$ 99,000.00	$ 49,000.00	2500	$ 8,250,000	$ 8,201,000
B	$ 100,000	50	$ 165,000.00	$ 65,000.00	2500	$ 8,250,000	$ 8,185,000
C	$ 100,000	100	$ 330,000.00	$ 230,000.00	2500	$ 8,250,000	$ 8,020,000
D	$ 150,000	60	$ 198,000.00	$ 48,000.00	2500	$ 8,250,000	$ 8,202,000
E	$ 150,000	110	$ 363,000.00	$ 213,000.00	2500	$ 8,250,000	$ 8,037,000
F	$ 200,000	150	$ 495,000.00	$ 295,000.00	2500	$ 8,250,000	$ 7,955,000
G	$ 450,000	210	$ 693,000.00	$ 243,000.00	2500	$ 8,250,000	$ 8,007,000
H	$ 450,000	220	$ 726,000.00	$ 276,000.00	2500	$ 8,250,000	$ 7,974,000
I	$ 450,000	225	$ 742,500.00	$ 292,500.00	2500	$ 8,250,000	$ 7,957,500
J	$ 1,250,000	500	$ 1,650,000.00	$ 400,000.00	2500	$ 8,250,000	$ 7,850,000
K	$ 1,650,000	600	$ 1,980,000.00	$ 330,000.00	2500	$ 8,250,000	$ 7,920,000

statistics. Table 4 includes data about FTE and usage at each library to calculate costs based on either of those variables compared to the current distribution. This yielded similar results for Library K, which would pay less than their initial contribution if costs were based on FTE or usage. However, this analysis also revealed that using either FTE or usage alone could drastically impact a few of the libraries in the deal. For example, Library F has a very large FTE but relatively low usage, while Library G is just the opposite situation with a relatively small FTE but substantial usage.

Using conditional formatting features available in Microsoft Excel, the authors demonstrated disparities between libraries both numerically and visually. Overlaying data bars to represent the proportion of cost that each library bears quickly illustrated discrepancies. Adding red, yellow, and green icons to variables, such as cost per use, indicated the relative performance of the journal package at each library (e.g., green indicated low cost per use and red indicated high cost per use). Color-coded icons were also used to highlight the differences between the costs for each model.

The analysis confirmed that the original distribution gave some libraries significantly more benefits or less costs than others. It also demonstrated that relying on a single factor to

Table 3
Cost Comparison

Academic Library	$ 2015 Costs	% Contribution to 2015 Costs	# Individually Subcribed Titles	% of Subscribed Titles	Contribution Based on % of Subscribed Titles	Difference between 2015 Costs & Contribution Based on Subscribed Titles	% Increase or Decrease Contribution
A	$ 50,000.00	1.00%	30	1.33%	$ 66,518.85	$ (16,518.85)	-33.04%
B	$ 100,000.00	2.00%	50	2.22%	$ 110,864.75	$ (10,864.75)	-10.86%
C	$ 100,000.00	2.00%	100	4.43%	$ 221,729.49	$ (121,729.49)	-121.73%
D	$ 150,000.00	3.00%	60	2.66%	$ 133,037.69	$ 16,962.31	11.31%
E	$ 150,000.00	3.00%	110	4.88%	$ 243,902.44	$ (93,902.44)	-62.60%
F	$ 200,000.00	4.00%	150	6.65%	$ 332,594.24	$ (132,594.24)	-66.30%
G	$ 450,000.00	9.00%	210	9.31%	$ 465,631.93	$ (15,631.93)	-3.47%
H	$ 450,000.00	9.00%	220	9.76%	$ 487,804.88	$ (37,804.88)	-8.40%
I	$ 450,000.00	9.00%	225	9.98%	$ 498,891.35	$ (48,891.35)	-10.86%
J	$ 1,250,000.00	25.00%	500	22.17%	$ 1,108,647.45	$ 141,352.55	11.31%
K	$ 1,650,000.00	33.00%	600	26.61%	$ 1,330,376.94	$ 319,623.06	19.37%

Table 4
Other Factors for Determining Costs

Academic Library	$ 2015 Costs	% Contribution to 2015 Costs	FTE	% FTE	Cost per FTE	2014 Usage	% Usage	Cost per use
A	$ 50,000	1.00%	7000	5.34%	$ 7.14	7000	2.87%	$ 7.14
B	$ 100,000	2.00%	2000	1.53%	$ 50.00	3000	1.23%	$ 33.33
C	$ 100,000	2.00%	8000	6.11%	$ 12.50	8000	3.28%	$ 12.50
D	$ 150,000	3.00%	5000	3.82%	$ 30.00	15000	6.15%	$ 10.00
E	$ 150,000	3.00%	10000	7.63%	$ 15.00	9000	3.69%	$ 16.67
F	$ 200,000	4.00%	30000	22.90%	$ 6.67	21000	8.61%	$ 9.52
G	$ 450,000	9.00%	4000	3.05%	$ 112.50	45000	18.44%	$ 10.00
H	$ 450,000	9.00%	8000	6.11%	$ 56.25	10000	4.10%	$ 45.00
I	$ 450,000	9.00%	12000	9.16%	$ 37.50	21000	8.61%	$ 21.43
J	$ 1,250,000	25.00%	20000	15.27%	$ 62.50	54000	22.13%	$ 23.15
K	$ 1,650,000	33.00%	25000	19.08%	$ 66.00	51000	20.90%	$ 32.35

determine cost would result in similarly inequitable results. Sharing the results with all of the participating libraries produced mutual understanding regarding the collective unsustainability of the package and created the impetus to redefine the allocation model.

Implementation

In business management literature, a classical decision matrix has "options on one axis and criteria on the other." See an example in Table 5. When used as an evaluation, the decision matrix can help leaders make better strategic decisions by extending the "decision frame beyond the obvious options and criteria" (Enders, König, and Barsoux, 2016, p. 63).

The authors proposed and the task force agreed to redistribute costs among academic libraries based on multiple criteria including FTE, usage, and materials budget. In their modified matrix the decision criteria are presented on one axis and academic libraries on the other. They determined a percentage of the total (or weight) for each criteria and used the library's data to calculate a percentage of the total for each criteria. The costs are distributed by these percentages, and the sum determines a library's share of the total. Once they identified comparison variables for a weighted decision matrix, they calculated what a library *should* pay (Table 6). To ensure that all libraries remained in the package, they tiered cost distributions into three levels of

Table 5
Classic Decision Matrix

Generic Template					Example				
	Option A	Option B	Option C	Option D		Vendor A	Vendor B	Vendor C	Vendor D
Criteria A	1	2	0	3	Cost	1	2	0	3
Criteria B	2	1	2	1	Quality	2	1	2	1
Criteria C	3	3	1	0	Service	3	3	1	0
Criteria D	4	4	2	0	Warrenty	4	4	2	0

Table 6
Multi-Factor Cost Distribution Using a Modified Decision Matrix

			10.0%	of total costs	40.0%	of total costs	50.0%	of total costs	100.0%		
Academic Library	$ 2015 Costs	% Contribution to 2015 Costs	% Based on FTE	$ Based on FTE	% Based on Usage	$ Based on Usage	% Based on Budget	$ Based on Budget	$ 2016 Costs	New % of Contribution	% increase from Original
A	$ 50,000	1.00%	5.34%	$ 28,053	2.87%	$60,246	2.65%	$69,536	$157,836	3.01%	68%
B	$ 100,000	2.00%	1.53%	$ 8,015	1.23%	$25,820	2.65%	$69,536	$103,371	1.97%	3%
C	$ 100,000	2.00%	6.11%	$ 32,061	3.28%	$68,852	3.09%	$81,126	$182,039	3.47%	45%
D	$ 150,000	3.00%	3.82%	$ 20,038	6.15%	$129,098	3.31%	$86,921	$236,057	4.50%	36%
E	$ 150,000	3.00%	7.63%	$ 40,076	3.69%	$77,459	5.52%	$144,868	$262,403	5.00%	43%
F	$ 200,000	4.00%	22.90%	$ 120,229	8.61%	$180,738	7.73%	$202,815	$503,781	9.60%	60%
G	$ 450,000	9.00%	3.05%	$ 16,031	18.44%	$387,295	5.08%	$133,278	$536,604	10.22%	16%
H	$ 450,000	9.00%	6.11%	$ 32,061	4.10%	$86,066	12.80%	$336,093	$454,219	8.65%	1%
I	$ 450,000	9.00%	9.16%	$ 48,092	8.61%	$180,738	18.54%	$486,755	$715,584	13.63%	37%
J	$ 1,250,000	25.00%	15.27%	$ 80,153	22.13%	$464,754	15.45%	$405,629	$950,536	18.11%	-32%
K	$ 1,650,000	33.00%	19.08%	$ 100,191	20.90%	$438,934	23.18%	$608,444	$1,147,569	21.86%	-44%
TOTAL	$5,000,000	100.00%	100%	$ 525,000	100%	$2,100,000	100%	$2,625,000	$5,250,000	100%	

Table 7
Tiered Cost Distribution

Annual Price Increase/Inflation	4.50%				5.00%								
Academic Library	% Contribution to 2015 Costs	2015 Costs $	2016 Contributions Based on Historic Distribution %	2016 Costs Based on Historic Distribution $	2016 Multi-Factor Distribution %	2016 Costs Based on Multi-Factor Distribution $	2016 % Change from 2015	2016 Tiered Distribution %	2016 Costs Based on Tiered Distribution $	2016 Tiered % Change from 2015	Adjustment for Difference*	Final 2016 Cost Distribution (Tiered Costs + Adjustment)	Final 2016 Cost Differences Between Tiered and Historical Costs $
A	1.00%	$ 50,000	1.00%	$ 52,500	3.01%	$ 157,836	68.32%	1.03%	$ 54,000	8.00%	$ 295.45	**$ 54,295**	$ 1,795
B	2.00%	$ 100,000	2.00%	$ 105,000	1.97%	$ 103,371	3.26%	2.00%	$ 105,000	5.00%	$ 295.45	**$ 105,295**	$ 295
C	2.00%	$ 100,000	2.00%	$ 105,000	3.47%	$ 182,039	45.07%	2.06%	$ 108,000	8.00%	$ 295.45	**$ 108,295**	$ 3,295
D	3.00%	$ 150,000	3.00%	$ 157,500	4.50%	$ 236,057	36.46%	3.09%	$ 162,000	8.00%	$ 295.45	**$ 162,295**	$ 4,795
E	3.00%	$ 150,000	3.00%	$ 157,500	5.00%	$ 262,403	42.84%	3.09%	$ 162,000	8.00%	$ 295.45	**$ 162,295**	$ 4,795
F	4.00%	$ 200,000	4.00%	$ 210,000	9.60%	$ 503,781	60.30%	4.12%	$ 216,000	8.00%	$ 295.45	**$ 216,295**	$ 6,295
G	9.00%	$ 450,000	9.00%	$ 472,500	10.22%	$ 536,604	16.14%	9.01%	$ 472,500	5.00%	$ 295.45	**$ 472,795**	$ 295
H	9.00%	$ 450,000	9.00%	$ 472,500	8.65%	$ 454,219	0.93%	9.01%	$ 472,500	5.00%	$ 295.45	**$ 472,795**	$ 295
I	9.00%	$ 450,000	9.00%	$ 472,500	13.63%	$ 715,584	37.11%	9.26%	$ 486,000	8.00%	$ 295.45	**$ 486,295**	$ 13,795
J	25.00%	$ 1,250,000	25.00%	$ 1,312,500	18.11%	$ 950,536	-31.50%	24.72%	$ 1,296,875	3.75%	$ 295.45	**$ 1,297,170**	$ (15,330)
K	33.00%	$ 1,650,000	33.00%	$ 1,732,500	21.86%	$ 1,147,569	-43.78%	32.63%	$ 1,711,875	3.75%	$ 295.45	**$ 1,712,170**	$ (20,330)
Total	100.00%	$ 5,000,000	100.00%	$ 5,250,000	100.00%	$ 5,250,000			$ 5,246,750		**$ 3,250.00**	**$ 5,250,000**	
							Total 2016 Package Costs		$ 5,250,000				
							*Difference		$ 3,250				

more gradual price increases based on what libraries *could* reasonably pay (Table 7).

Outcome

Presenting the evidence in a modified decision matrix expanded the framework for decision making. This process encourages visualization of options, criteria, and trade-offs, which can help leaders clarify thinking, engage colleagues, and promote buy-in from the larger organization (Enders, König, and Barsoux, 2016, p. 68). In the Colorado case study, the modified decision matrix encouraged libraries to recognize that the historical cost distribution model was no longer accurate and over time had resulted in some libraries paying a disproportionately high portion of cost. The Alliance libraries agreed to a new cost distribution model, and the consortia signed a multi-year journal package with the publisher. For the CU System, the new cost distribution resulted in cost savings for Boulder but increases for

Auraria and Colorado Springs. However, the tiered approach kept the costs affordable for all of the CU libraries, and the net result made the shared purchase viable for the near future.

Reflection

Consortia activities are most beneficial when costs and benefits are understood and shared among all member libraries. The process of surveying participating libraries, reviewing criteria and variables, and developing cost distributions should be conducted on a routine basis. The Alliance plans to update the variables in the decision matrix on a regular basis so that the costs will be transparent and reflect changes in FTE, usage, or budget for each library.

Conclusion

To ensure better decision making and timely implementation, strategic business leaders utilize evaluation tools, such as a decision matrices, to explore options, make choices, and communicate decisions to stakeholders. In this case study, the authors developed a modified decision matrix with multiple weighted criteria to redistribute the costs of a purchase that is shared among consortia of academic libraries. This methodology could be applied to other scenarios when complex problems require systematic consideration of multiple criteria and various stakeholders.

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Appendix
Survey Questions

Please note the name of the publisher of the big deal journal package has been removed from the survey. Minor edits have been made to the surveys for clarity because it appears here in a different format from the original.

Renewal Survey, Part 1

Section 1

Please provide feedback about the existing package and license agreement.

1. Which Alliance library do you represent?

2. How satisfied are you with the existing journal package?
   On a scale between 1 (Dissatisfied) and 5 (Very Satisfied) check one.

3. How do the following factors impact your satisfaction with the existing package?
   Check one type of impact per factor: Negatively impact | No impact | Positively impact
   a. Amount of content
   b. Faculty feedback
   c. Student feedback
   d. Librarian feedback
   e. Usability of the platform

f. Access issues
g. Usage statistics
h. License terms
i. Cost
j. Are there any other factors that impact your satisfaction that were not included above?

4. How likely are you to renew if a new contract was negotiated with the same or similar terms? On a scale between 1 (Very Unlikely) and 5 (Definitely) check one for each scenario.
    a. 3 year deal; set at set percent increase
    b. price based on historical title list and transfer titles
    c. access to unsubscribed titles for an additional cost

Section 2

Please provide feedback to help the Alliance negotiate the 2015-2020 contract.

5. What are some of your priorities for a new contract?
   Check one priority level per contract term: Not a Priority | Low Priority | Medium Priority | High Priority
    a. Reduce our costs
    b. Cap annual increases
    c. Increase amount of content
    d. Create a new title list
    e. Break up the Big Deal and subscribe to individual titles
    f. Create uniform access across Alliance libraries
    g. Secure perpetual rights/post-cancellation access
    h. Add license terms for ADA compliance

6. How do the following factors influence your decision to participate in the Alliance package?
   Check one level of importance per factor: Not important | Somewhat important | Very important
    a. Current budget
    b. Projected/expected annual budget increases
    c. Impact of cancellation on ILL
    d. Impact of cancellation on collection size

7. What factors should be considered to determine our costs for the new Alliance package? The following factors have traditionally been used to determine prices for other journal packages or databases. Check all that apply to your library.
    a. FTE
    b. Carnegie Classification
    c. Number of faculty (total or within certain departments)
    d. Usage
    e. Historical spend for titles
    f. List Price
    g. Other: Please provide details.

8. Are there other factors to determine price that were not included above?

9. Would you be interested in exploring different acquisition models for this content during the negotiations? Check one level of interest per acquisition model: Not interested | Somewhat interested | Very interested

a. Evidence-based model
b. Token-based model
c. Pay-per-view model
d. Database subscription model (no title lists, no perpetual access)
e. One-time purchase model
f. Other model, to be determined

10. Are there other acquisition models that should be explored but were not mentioned above?

11. Are you interested in adding/integrating other publisher products into this renewal?
Check one level of interest per product: Not interested | Somewhat interested | Very interested
    a. Product A
    b. Product B
    c. Product C

12. Are there other publisher products that should be considered during this negotiation?

13. Do you have questions for the publisher?

14. Do you have any comments or questions for the negotiating team?

Renewal Survey, Part 2

1. Which Alliance library do you represent?

2. What is your FY2014-15 budgeted appropriation for library materials (excluding gifts, grants, external funding)?

3. What percent of your library materials budget is typically allocated to serials/ongoing costs?
    a. 30-40%
    b. 40-50%
    c. 50-60%
    d. 60-70%
    e. 70-80%
    f. 80-90%
    g. 90-100%
    h. Other: Please provide details.

4. If we negotiated another 3-year deal with capped annual increases, at what percentage increase would you renew? Check all that apply
    a. Below 3.0%
    b. 3.5%
    c. 4.0%
    d. 4.5%
    e. 5.0%
    f. Other: Please provide details.