

Thinking Differently About the Money: A First Step Toward the Open Scholarly Commons

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Abstract

This article argues the academic libraries need to move towards creating, with other organizations involved in scholarship and cultural heritage, an open scholarly commons. At the present time, academic library's ability to do so is hampered by their standard approach to budgeting, particularly the way collection budgets are presented. A strategy for moving towards an open scholarly commons is presented and a way of structuring the collections portion of the library's budget to make progress toward this goal visible is suggested.

The Open Scholarly Commons

The place we want to arrive at is easy to describe. We want to create an open scholarly commons. The commons would be digital and distributed. Colleges, universities, museums and other cultural heritage organizations, scholarly societies, foundations, and governments would hold and host the content created, funded, or of interest to them in repositories that would make the content openly available to the world. In addition, this community of organizations would fund and support the common infrastructure needed for the task. Collectively these organizations would take responsibility for curating and preserving the world's scientific, scholarly, and cultural heritage thus making it freely available to everyone in the world now and for the future.

Ellen Finnie and Greg Eow present a summary of the pieces that are needed to create the open scholarly commons. They say:

Our vision for a healthy, global scholarly communications environment... is this: a community of organizations, including libraries, museums, university presses, and government agencies building a wide-ranging open infrastructure to achieve our goal of democratized access to science and scholarship, including for example the following:

- Shared repository ecosystem
- Unified deposit interface for all campus, government, and nonprofit repositories

- System for aggregated and inexpensive usage data, including research analytics
- Nonprofit campus-supported disciplinary repositories
- Shared print collections
- Shared print storage
- Shared digital collections and discovery systems
- Collaborative digital preservation
- Top quality open access journals
- Less expensive, open source publishing systems and services¹

Jean-Claude Guédon, in his BOAI15 statement, has very nicely stated how this will work for libraries:

In the end, libraries can point out the fact that their future role actually points in two, apparently opposite, yet deeply complementary directions: on the one hand, they plunge deeply into the local production scenes since they aim at systematically sweeping, storing, preserving, and curating all that is produced in their hosting institution; at the same time, the libraries, with their sister institutions, are involved in the task of ensuring a vibrant knowledge-nurturing life for their documents: they will circulate, be discoverable, be interoperable, be evaluated, etc. With the first function, each library ensures its safe and strong function within its host institution; with the second function, the libraries connect to bring the knowledge infrastructure that we all really need.²

A possible prototype of a piece of the open scholarly commons might be Sci-Hub. In justifying Sci-Hub Alexandra Elbakyan, its founder, cites the United Nations *Universal Declaration of Human Rights*, which states, "Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits."³ Sci-Hub supports the last part of this, but does so in a way that is widely regarded as illegal. It has a very easy to use interface and provides access to a surprising amount of content. A recent study of Sci-Hub's holdings found that it had 81.6 million scholarly articles, or 68.9% articles in the Crossref DOI database. Sci-Hub held 92.8% of the chemistry articles and 97.3% of the articles published by Elsevier. Sci-Hub provided access for 99.3% of valid incoming requests.⁴ In commenting on this research Kalev Leetaru, writing in *Forbes*, said, "Putting this all together, it seems the world wants academic literature to join the long list of things the Internet has made free. Sci-Hub's meteoric growth and the fact that in spite of immense legal pressure it has still managed to amass more than two-thirds of the contemporary major scholarly output of the academic enterprise suggests that commercial publishers have reached a tipping point in their losing battle against the open access movement. In the Internet era information will be free, the only question remaining is who pays for that freedom."⁵ Sci-Hub demonstrates clearly that technically an open repository of the all of the world's scholarly articles is possible and probably not all that expensive, and the content it hosts is a substantial portion of what is required for the open scholarly commons. But it has repeatedly been found to violate publisher's copyrights

and more fundamentally is parasitic on legacy, largely commercial, scholarly publishers, and as such is not a sustainable model for what we ultimately hope to achieve.

Moving forward, we need to answer Leetaru's question: who pays to make scholarly information free? If we can do this then we are a long way towards the goal. How the money moves is central to creating the open scholarly commons. As noted above academic libraries will be nodes in the network that will make up the open scholarly commons. Reallocating academic library budgets to support this is a required part of making it happen.

The Role of Academic Libraries

If the open scholarly commons is the goal, the question is how do we in academic libraries advance it. I would argue that while there are many other important players, particularly governments and large foundation funders, academic libraries have a distinctly important role to play. They are closest to the faculty who create most of the scholarly content and to the students and faculty who are the most active users of it. And, while resources are currently stretched, academic libraries have considerable resources at their disposal. According to the National Center for Educational Statistics, in 2012, the latest year for which statistics have been published, 3,793 academic libraries in the United States spent \$2,790,039,494 on information resources and had total expenditures of \$7,008,113,939.⁶ In 2014/15 the 124 members of the Association of Research Libraries have total expenditures \$4,605,470,905, with \$1,619,589,599 spent on library materials.⁷ Importantly, this money is base funding. It is available on an ongoing basis, year in and year out. This is a sizeable amount of money, but is it enough?

The University of California *Pay It Forward* study looked at whether current journal budgets in large North American Research Institutions were sufficient to “flip” the journal model from subscriptions to article process fees and found that, “For the most research-intensive North American research institutions, the total cost to publish in a fully article processing charge-funded journal market will exceed current library journal budgets.”⁸ This is not great news, but there are several reasons not to be overly concerned.

First, we don't need or want to flip the today's scholarly communications system. Flipping to a system which funds commercial journal publishers, who take 35% to 40% profit margins (that is 35% to 40% of what we pay to them that goes out of the system into the hands of shareholders) is probably not the best way to proceed. We want a world in which commercial publishers are like insurance companies if you move to a single payer health care system, you might hire them to provide some services like copy editing or design, but they are not the central component of the system.

Second, the application of technology to an information intensive enterprise should lower costs. It seems likely that there will soon be significant opportunities to do more efficiently and effectively aspects of the publishing process that are now expensive through the use of artificial intelligence and machine learning. The most likely candidate is peer review. Aries Systems, a

service provider to scholarly publishers has integrated the “bibliographic intelligence” of Meta, a machine learning system that was recently acquired by the Chan Zuckerberg Initiative. In tests the Meta system significantly outperformed human reviews. As the Aries press release puts it, “Large-scale trials conducted by Meta in partnership with industry demonstrated that Bibliometric Intelligence out-performed tens of thousands of human editors by a factor 2.5x at predicting article-level impact for new manuscripts, prior to publication. It also performed 2.2x better than the same group of editors at identifying “superstar articles” – those that represent the top 1% of high-impact papers, prior to publication.”⁹

Finally, the changes that we are considering will play out over the next decade or maybe more. Assuming Moore’s Law holds, computing power will increase 100 times in that period. It is not at all clear what that will mean, but we should expect that many things will be cheaper, faster, and easier.

What we need to do now is begin assertively moving toward the goal of the open scholarly commons. Not changing has an opportunity cost. If we wait we will have spent money unnecessarily and we cannot afford to do so. In this paper, I will lay out a way of thinking about how academic libraries should think about their budgets that I hope can help us be clear about how we are spending our money and importantly help us be clear about how this moves us away from past practice and toward the world we need to create. Some academic libraries have begun this process, most notably MIT.¹⁰ The rest of us need to follow suit.

The Strategy for Contributing to the Open Scholarly Commons

As noted above academic libraries will be key contributors to the open scholarly commons. They will be the agent for their campus that collects, curates, and preserves the campus contribution to the commons. Academic library collections have always done two things: they have brought the knowledge of the world to the campus and they have made special and unique collections available to the world. In the past, the largest portion of a library’s effort and expenditures were on the former.¹¹ This was necessary in a world where paper was the dominant medium. As we build the open scholarly commons this needs to shift with libraries allocating an increasing portion of the effort and expenditures to the latter purpose. Locan Dempsey has nicely framed this as moving from an “Outside-In” strategy to an “Inside-Out” strategy.¹² This is the terminology we will use.

For an individual academic library, the task over the next decade will be to reallocate funding from the “Outside-In” portion of its expenditures to its “Inside-Out” expenditures. Inside-Out expenditures might be support for open access either through an institutional repository or an instance of the Open Journal System. It would also include a fund to help campus authors pay open access article processing fees and funding for digital projects based on local special collections, faculty or student work, or community collaborations. It should include contributions to national open digital projects such as ArXiv, HahtiTrust, or Knowledge

Unlatched, and the costs of digital preservation of unique content. Contributions to support infrastructure projects like DSpace, Fedora, Hyku, or the Open Journal System would also count.

A critical point that needs to be emphasized is that many of these expenditures are not now thought of as part of the collections portion of the budget. Some contributions to ArXiv or Knowledge Unlatched might be, but support for the institutional repository of membership in the Digital Preservation Network or DuraSpace probably are not. Thinking about the full scope of Inside-Out collections is an important change.

Increasing these expenditures in the current environment where new funding is hard to come by will require a different strategy for the outside-in portion of the budget. If we look out a decade or so, there is a good chance that Gold Open Access will become the dominant business model for scholarly publishing and when this happens the funds we will need to support the Inside-Out portion of the library's mission will be available.¹³ We will no longer need to purchase expensive subscriptions for science and technology journals from commercial publishers. It may be that with tools like the Open Access Button and Unpaywall will make the discovery of open access versions of articles easy and saving in subscription expenditures might be available sooner.¹⁴ A recent study by Heather Piwowar, et al. that 28% of the scholarly literature is open access and that for the most recent year analyzed (2015) 45% was open access. People using the Unpaywall tool found an open access version of the article they were seeking 47% of the time.¹⁵ The open access promise provides hope, but it is not a hope that a library can count on to create savings that can be invested in Inside-Out initiatives today.

The strategy that is available today is to move from Just-in-Case purchasing to purchasing Just-in-Time. Research on the use of library materials long ago showed that a large portion of the books purchase by academic libraries were never used.¹⁶ Research also clearly shows that the best predictor of future book use, though it is far from perfect, is past use.¹⁷ In the print world where books went out of print and it was difficult and time consuming to move materials between libraries, a Just-in-Case purchasing strategy made sense. In the current world, where electronic content can be acquired in an instant, where because of print-on-demand systems books do not go out of print, and where most print books can be acquired in a day or two, the Just-in-Case strategy makes little or no sense. Purchasing books Just-in-Time means that the 40% of books that would never be used are never purchased, and the books that are purchased are the ones most likely to be used in the future. A purchase-on-demand strategy also saves staff time. There is no need for bibliographers to select items and acquisitions and cataloging can largely be eliminated as bibliographic records are batch loaded and ordering is automatic. A Just-in-Time strategy can also be used for journals articles as in many cases services like the Copyright Clearing Center's Get It Now can provide articles in hours or often minutes. Rapid ILL is almost as fast and cheaper. In many cases, demand for articles can be met by purchasing an article at a time at a lower cost than subscriptions. It may be particularly useful to monitor the expenditures made to the large commercial publishers as they are the drivers of the largest cost and most consistent price increases.

Just-in-Time purchasing is a way for libraries to become more efficient and to increase their productivity. This is a worthy goal at any time, but it is particularly important now when we need resources to invest in a larger systematic change that will, by fundamentally changing the scholarly communications system, create another set of efficiencies and another, probably even larger, increase in productivity.

So, we have a two-part strategy:

1. Move to a Just-in-Time (PDA) approach for book purchases and substitute article purchasing for low use subscriptions. This reduces the library's Outside-In expenditures. Track expenditures to large commercial publishers as this is where the largest expenditures on Outside-in Just-in-Case expenditures are.
2. Take the savings thus generated from the Outside-In portion of the library budget and invest them in Inside-Out activities.

Viewed this way it, libraries can set targets and track progress towards them for both the Just-in-Case to Just-in-Time transition and for the change from Outside-In to an Inside-Out focus.

The problem is that in most cases, because of traditional ways of looking at academic library budgets, we don't see expenditures in these categories and so it is difficult to know if we are appropriately allocating resources or if we are moving toward the open scholarly commons or not.

How to Think about the Library's Budget

Traditionally academic library budgets have been created with three top level categories (the specific terminology here comes from NCES, but conceptually this is how academic library budgeting is universally done): salaries and wages, information resources, and operating expenditures. Inside the salaries and wages category, divisions are usually made for different classes of personnel, librarians, other professionals, clericals, and hourly or student workers. Inside information resources, the divisions are usually between one-time purchases, largely books, and ongoing commitments, journals and other serials. Inside these categories for digital and paper expenditures are usually made and audiovisual materials are often separated. Typically, also included in information resources are interlibrary loan, document delivery, and preservation expenses. Operating expenditures is for everything else from pencils to OCLC charges to travel.

This system of categorizing an academic library's budget was adequate in the past, but it is not useful in tracking the changes that need to be made as we implement the strategy described above for advancing toward the goal of an open scholarly commons. An example, for a mid-sized university library, of what the collections portion of such a budget might look like is shown in Figure One below.

Note that the budgets below do not include costs for instructional activities, building operations, technology, or overall library administration.

Figure One: Collections Portion of Library Budget — Traditional View				
	Number	Salary with Benefits		% of Budget
Salary and Wages				
Librarians	16	\$90,000	\$1,440,000	
Other Staff	18	\$55,000	\$990,000	
Total Staff			\$2,430,000	35.6%
Information Resources				
Books including PDAs			\$850,000	
Journals and Databases			\$3,000,000	
Special Collections Purchases			\$100,000	
ILL and Document Delivery			\$75,000	
Total Collections			\$4,025,000	58.9%
Operating Expenses				
OCLC and Other Bibliographic Records			\$75,000	
Other Costs, equipment, etc.			\$75,000	
Open Access Authors Funding			\$25,000	
Open Access Projects			\$75,000	
Support for National Open Access Projects			\$125,000	
Total Operating Expenses			\$375,000	5.5%
Total Collections			\$6,830,000	100.0%

This budget presentation does not provide any insights into what percentage of the library’s resources support Inside-Out versus Outside-In collections. Nor, does it show how much of the collections budget goes to Just-in-Time versus Just-in-Case purchasing. Unless we organize the budget around the things we are care about, it becomes difficult to see them and makes advancing them harder.

A better way of arranging the same budget would be as shown below in Figure Two. The expenditures are the same as those in the budget above, but we have now made visible the categories we care about.

Figure Two: Sample Library Budget — Proposed Arrangement					
	Number	Salary with Benefits		% of Budget	% of Outside-in
Collections					
Inside-Out					
Open Access Authors Funding			\$25,000		
Open Access Projects			\$75,000		
Special Collections Purchases			\$100,000		
Other Costs, equipment, etc.			\$75,000		
Support for National Open Access Projects			\$125,000		
Salary and Wages					
Librarians	6	\$90,000	\$540,000		
Other Staff	5	\$55,000	\$275,000		
Inside-Out Total			\$1,215,000	17.8%	
Outside-In Just-in-Case					
Large Commercial Publishers Journal Subscriptions			\$1,200,000		
Other Publishers Books			\$500,000		
Other Publishers - Journals and Databases			\$1,800,000		
Other Costs - OCLC, binding, etc.			\$50,000		
Salary and Wages					
Librarians	9	\$90,000	\$810,000		
Other Staff	10	\$55,000	\$550,000		
Total Just-in-Case			\$4,910,000	71.9%	87.4%
Outside-in Just-in-Time					
ILL and Document Delivery			\$75,000		
PDA's			\$350,000		
Other Costs - Bibliographic Records, etc.			\$25,000		
Salary and Wages					
Librarians	1	\$90,000	\$90,000		
Other Staff	3	\$55,000	\$165,000		
Total Just-in-Time			\$705,000	10.3%	12.6%
Outside-In Total			\$5,615,000	82.2%	
Collections Total			\$6,830,000	100.0%	

In the first budget, we can see the allocation funds between staff, materials we purchase, other expenses. We can see the allocation is about 35% to 65% to 5%. This is a typical percentage break down for academic libraries. This might be useful in a steady state time to compare our libraries with peers or to see if there are changes over time, but it does not show us the things we now care about.

In the second budget, we can clearly see the money in the categories we care about: Inside-Out, Outside-In Just-in-Case, and Outside-In Just-in-Time. We can see that we are currently spending about 18% on the collections budget on Inside-Out and the remaining 82% on Outside-In. The Outside-In portion of the budget is allocated about 87% to Just-in-Case and 13% to Just-in-Time. This tells us, as I would read it, that reasonable progress is being made toward Inside-Out, but there is still much room to move from Just-in-Case to Just-in-Time.

With this understanding, we might set a goal of doubling the portion of our collection expenditures on Inside-Out over the next five years to 35% or \$2,400,000. Assuming a constant budget, this would mean we would move \$1,185,000 from the Outside-In to the Inside-Out portion of the budget. If we assume that for every three dollars we reduce the Just-in-Case portion, we need to add one dollar to the Just-in-Time budget then we would have to reduce the Just-in-Case portion of the budget about \$1,765,000 and add \$580,000 to the Just-in-Time portion. This would be a reduction of about 36% in Just-in-Case and an increase of 82% in Just-in-Time. It is important to note that some of these adjustments would most likely be made by reallocating staffing so the cuts required, particularly in journal subscriptions, are not as challenging as they might first appear, though they would be considerable. A sample of what the five-year out budget might look like is shown below. To keep it simple the number of librarians and other staff is kept constant, though what work they do has changed. Subscriptions have been cut by 25% and Just-in-Case book purchases by 60%. The latter might seem uncomfortable, but a variety of studies show that this is a reasonable possibility.¹⁸ What this exercise shows is the task that needs to be accomplished and what it will take to do so. With a target set and with an understanding of where cuts need to be made and where staffing needs to be adjusted, the library can reasonable work toward the goal.

A sample of what the budget five years out would look like is shown in Figure Three below.

Figure Three: Sample Library Budget — Proposed Arrangement Five Years Out					
	Number	Salary with Benefits		% of Budget	% of Outside-in
Inside-Out					
Open Access Authors Funding			\$75,000		
Open Access Projects			\$265,000		
Special Collections Purchases			\$250,000		
Other Costs, equipment, etc.			\$150,000		
Support for National Open Access Projects			\$300,000		
Salary and Wages					
Librarians	9	\$90,000	\$810,000		
Other Staff	10	\$55,000	\$550,000		
Inside-Out Total			\$2,400,000	35.1%	

Outside-In Just-in-Case					
Large Commercial Publishers Journal Subscriptions			\$900,000		
Other Publishers Books			\$200,000		
Other Publishers - Journals and Databases			\$1,350,000		
Other Costs - OCLC, binding, etc.			\$25,000		
Salary and Wages					
Librarians	5	\$90,000	\$450,000		
Other Staff	4	\$55,000	\$220,000		
Total Just-in-Case			\$3,145,000	46.0%	71.0%
Outside-in Just-in-Time					
ILL and Document Delivery			\$350,000		
PDA's			\$500,000		
Other Costs - Bibliographic Records, etc.			\$35,000		
Salary and Wages					
Librarians	2	\$90,000	\$180,000		
Other Staff	4	\$55,000	\$220,000		
Total Just-in-Time			\$1,285,000	18.8%	29.0%
Outside-In Total			\$4,430,000	64.9%	
Collections Total			\$6,830,000	100.0%	

The changes between the current budget and the proposed five-year out budget are shown in Figure Four below.

Figure Four: Change between Current and Five Year Out Budget		
	Change from Five Years Before	% Change from Five Years Before
Inside-Out		
Open Access Authors Funding	\$50,000	200.0%
Open Access Projects	\$190,000	253.3%
Special Collections Purchases	\$150,000	150.0%
Other Costs, equipment, etc.	\$75,000	100.0%
Support for National Open Access Projects	\$175,000	140.0%
Salary and Wages		
Librarians	\$270,000	50.0%

Other Staff	\$275,000	100.0%
Inside-Out Total	\$1,185,000	97.5%
Outside-In Just-in-Case		
Large Commercial Publishers Journal Subscriptions	-\$300,000	-25.0%
Other Publishers Books	-\$300,000	-60.0%
Other Publishers - Journals and Databases	-\$450,000	-25.0%
Other Costs - OCLC, binding, etc.	-\$25,000	-50.0%
Salary and Wages		
Librarians	-\$360,000	-44.4%
Other Staff	-\$330,000	-60.0%
Total Just-in-Case	-\$1,765,000	-35.9%
Outside-in Just-in-Time		
ILL and Document Delivery	\$275,000	366.7%
PDA's	\$150,000	42.9%
Other Costs - Bibliographic Records, etc.	\$10,000	40.0%
Salary and Wages		
Librarians	\$90,000	100.0%
Other Staff	\$55,000	33.3%
Total Just-in-Time	\$580,000	82.3%
Outside-In Total	-\$1,185,000	-21.1%
Collections Total	\$0	0.0%

Conclusion

If academic libraries are to make progress in creating the open scholarly commons, they need to reallocate resources in a significant way from expenses that support Outside-In collections to resources that support Inside-Out collections. An important tool in making this change is to adjust the way in which budgets are constructed. It would be best if these changes could be adopted nationally so that libraries could compare their expenditures in different categories with peers. The visibility provided by the budget methodology proposal is the first step in adjusting expenditures so that a decade from now the open scholarly commons will be in place for a large portion of the resources created on our campuses and of interest to our researchers. Without this relatively simple change our vision will be clouded and progress will be more difficult.

Notes

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² Jean-Claude Guédon, *Open Access: Toward the Internet of the Mind*, BOAI15 Statement, (February 23, 2017), <http://www.budapestopenaccessinitiative.org/open-access-toward-the-internet-of-the-mind>.

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⁵ Kalev Leetaru, “The Internet Made Information Free: Now It Has Come For Academic Research,” *Forbes*, July 31, 2017, <https://www.forbes.com/sites/kalevleetaru/2017/07/31/the-internet-made-information-free-now-it-has-come-for-academic-research/#6457e9554640>.

⁶ U.S. Department of Education, *Academic Libraries: 2012. First Look* (Washington, DC: National Center for Educational Statistics, January 2014): Pages 10 and 12, <https://nces.ed.gov/pubs2014/2014038.pdf>.

⁷ Shaneka Morris and Gary Roebuck, *ARL Statistics 2014-2015* (Washington, DC: Association of Research Libraries, 2017): Pages 21 and 9, <http://publications.arl.org/ARL-Statistics-2014-2015/>.

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⁹ “Artificial Intelligence Integration Allows Publishers a First Look at Meta Bibliometric Intelligence,” Aries Systems Press Release (October 17, 2016), <http://www.ariessys.com/views-press/press-releases/artificial-intelligence-integration-allows-publishers-first-look-meta-bibliometric-intelligence/>.

¹⁰ See: Ellen Finnie, "Being Earnest with Collections: Voting with our Dollars: Making a New Home for the Collections Budget in the MIT Libraries," *Against the Grain*, 28, no. 4 (September 2016): 90-92, <https://dspace.mit.edu/handle/1721.1/105123>; and Ellen Finnie, "What Organic Food Shopping Can Tell Us About Transforming the Scholarly Communications System," *In the Open* (March 23, 2016), <http://intheopen.net/2016/03/what-organic-food-shopping-can-tell-us-about-transforming-the-scholarly-communications-system>.

¹¹ See: David W. Lewis, "A Strategy for Academic Libraries in the First Quarter of the 21st Century," *College & Research Libraries* 68, no. 5 (September 2007):418-434, doi:10.5860/crl.68.5.418, <http://crl.acrl.org/index.php/crl/article/view/15889>; especially pages 425-428; and David W. Lewis, "From Stacks to the Web: The Transformation of Academic Library Collecting," *College & Research Libraries* 74, no. 2 (March 2013):159-176, doi:10.5860/crl-309, <http://crl.acrl.org/index.php/crl/article/view/16292>.

¹² Lorcan Dempsey, "A New Information Management Landscape: From Outside-In to Inside-Out," in *New Roles for the Road Ahead: Essays Commissioned for ACRL's 75th Anniversary* (Chicago, IL: Association of College and Research Libraries, 2015), 50-55, http://www.ala.org/acrl/sites/ala.org.acrl/files/content/publications/whitepapers/new_roles_75th.pdf.

¹³ David W. Lewis, "The Inevitability of Open Access," *College & Research Libraries* 73, no. 5 (September 2012):493-506, doi:10.5860/crl-299, <http://crl.acrl.org/index.php/crl/article/view/16255/17701>.

¹⁴ See: Open Access Button <https://openaccessbutton.org> and unpaywall <http://unpaywall.org>. Tina Baich has demonstrated that in an interlibrary loan context open access versions of requested items are available and savings by using them can be had. See: Tina Baich, "Open Access: Help or Hindrance to Resource Sharing?," *Interlending & Document Supply* 43, no. 2 (2015): 68-75, <https://scholarworks.iupui.edu/handle/1805/6456>.

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¹⁶ The University of Pittsburgh study demonstrated this conclusively. See: Allen Kent, *Use of Library Materials: The University of Pittsburgh Study* (New York: Marcel Dekker, 1979).

¹⁷ See for example the excellent study done nearly sixty years ago, Herman H. Fussler and Julian L. Simon, *Patterns in the Use of Books in Large Research Libraries* (Chicago, IL: University of Chicago Library, 1961).

¹⁸ See for example: Param Bedi and Jason Snyder, "Making a Difference: Moving Your Organization from Transactional to Transformational," *Educause Review* 50, no. 2 (March/April 2015), <https://er.educause.edu/articles/2015/3/making-a-difference-moving-your-organization-from-transactional-to-transformational>; or Rebecca Schoeder, "When Patrons Call the Shots: Patron-Driven Acquisition at Brigham Young University," *Collection Building* 31, no. 1 (2012): 11-14, <https://doi.org/10.1108/01604951211199128>.