INTEROFFICE MEMORANDUM

TO: WAYNE DISHER, LIBRARY DIRECTOR

FROM: CHRIS KRAUSE, UNIVERSITY LIBRARIAN

SUBJECT: RE: ONLINE ACCESS

DATE: 9/28/2011

CC: ROBERT SMITH, UNIVERSITY PROVOST

Mr. Disher,

Attached is the report you requested. I think switching over to electronic journals is a viable option, although should not be a decision made without serious deliberation and consideration, as the service will not be as interchangeable as you suspect. Please let me know if I can be of any further assistance in this matter.

Chris Krause

Background

In the past our institution has devoted the majority of its collection budget to physical books and most relevant for this report: print journals. In this regard our habits are behind the times. Several rigorous meta-analyses indicate that as early as 1999 electronic access to journals became a preferred and prevalent method of information retrieval amongst students, even in cases in which both print and online access were made available.[1] Among faculty results are more divided: a slight preference for print journals over electronic is demonstrated.[2]

How our library has maintained its utility without embracing this new medium is not clear. One reason may be that we are connected to a university which is known for its outstanding humanities and liberal arts programs, and that these disciplines are more reliant upon books and primary sources.[3] In this way we have provided the basic tools necessary for our students and faculty. We have not however embraced national dispositions. Accordingly, our current institutional investments may act as a disservice to the educational wellbeing of those relying upon our guidance in introducing and maintaining information retrieval systems.

Across the academic community a trend has been established: the introduction of electronic journals has lead to a steep decline in the usage of print journals.[4] This is of no surprise even considering the popularity of print journals amongst faculty, as the student body and the population of patrons in general overwhelmingly prefer online access. This shift is not without consequence however: while electronic access tends to be more convenient, and the sheer breadth of records made available greatly expanded, it comes at the cost of article quality. For purposes of our institution we must consider quality of access, convenience and scope against cost. These issues will be discussed shortly hereafter.

Problem

I think it is implied by the tone of your memo that this report is intended as a cost-benefit analysis in order to bring about changes in budget, so that we can continue to provide quality services in this day of economic woe. That being said, economics will be the primary focus of this report. Your allusion to the fact that print journals are more expensive than electronic journals is valid: they are vastly more costly. But would we be receiving indistinguishable access

from that of print if we converted to digital? Several studies, to be discussed later, indicate otherwise and report that electronic journals are not yet comparable in quality to print journals. This is not to imply that electronic journals are incapable of fulfilling the information retrieval needs of our users, only that the experience is fundamentally different, that print clearly has some advantages over the former and as such is not absolutely anachronistic.

Analysis

Before we can discuss the viability of electronic journals we must first be clear to differentiate the various types of commercial access available. The most common ways we might subscribe to electronic journals are through: individual subscriptions, publishers' packages, aggregator journals and full-text database journals.

Individual subscriptions are typically purchased through a subscription agent and typically involve special interest journals with a focused user base. Publisher packages are individual subscriptions of similar content sold at discount groupings (example: ScienceDirect). Aggregators offer access to different publishers articles from one central engine. These services offer full-text searching and include providers such as JSTOR and MUSE. Full-text database journals are the most prolific. They offer journals from different publishers but separate them from issue and title access; the journal articles are entered into a database as separate and individual works. These systems which include Lexis/Nexis and WilsonSelect often have an "embargo" delay of six months on current issues.[5] This latter consideration is what makes them so economical: they offer articles which are not by definition cutting edge research, and so are offered at affordable prices. This may also be a reason why faculty prefer print journals, as those

interested in news of development within their discipline may find the embargo delay undesirable. Regardless this is not a concern for providing access to the student body at large and accordingly, the overwhelming majority of our users.

The following data is presented courtesy of Donald King, Research Professor at the University of Pittsburgh and Carol Montgomery, Dean of Libraries at Drexel University, who spent several years of research funded by an IMLS grant to determine the costs of electronic versus print journal costs.[6] These figures are only indicative of Drexel University, but may be used to form general conclusions about the comparative cost of the journals contrasted. It was concluded that operation costs per title was $16 for electronic journals, $135 for unbound print journals and $60 for bound print journals. Subscription fees per title were $500 for individual electronic journals, $135 for publisher packages, $60 for aggregators, $6 for full text databases and $100 for print journals. Per use costs was $6 for individual journals, $3 for publisher packages, $2 for aggregators and $1 for full-text. The cost of printing these journals is $2 for electronic journals, $6 for unbounded print and $30 for bounded print. Operational costs were greatest for print journals, with the lowest cost to use ratio, as finite space limits the number of titles capable of being retained. At Drexel for example only 400 print titles were collected, while over 10,000 full-text electronic ones were, to say nothing of aggregators, individual subscriptions and publisher packages. Electronic journals require more reference support by librarians and the purchasing of additional computer and server hardware, but these additional costs are dwarfed by the operational expense of maintaining and housing print journals.

A conversion to electronic journals would surely require institutional readiness. Distance education and commuting caters to the electronic user, while professionals and those living near or on campus may prefer the physical plant. Indeed, to properly cater to our user base, we would

be keen to survey thoroughly and completely to understand user inclination and preferences. We must consider the computer literacy of our users, or else additional funds will need to be allocated to education and training. The administrative support must be in place to support the operation of this complex and novel approach to information retrieval: there are many more variables in place, more opportunities for technical failure and more contracts and paperwork to be filed. Librarians manning the systems must have the technical skills to operate them, and if our current staff is not up to snuff, we may need to hire outside consultants or replace staff with more proficient, and possibly higher paid others.

Some initial confusion and development costs will be unavoidable, and we as an institution must be prepared, equipped and willing to endure it. All in all these operational considerations and costs, at least according to the research of King and his colleagues, will only constitute a small portion of overall expense, and is overshadowed by the price of shelving, binding, maintaining, housing and claiming print journals. Electronic systems tend to relieve staff of the more mundane labors associated with the trade and, if designed and maintained properly, are a superior means of collecting and sorting information.

But access to a greater breadth of titles does not necessarily equate to equal or greater quality access. The results of a 2001 study at Vanderbilt University indicates that while electronic journals are easier to access, browse and cross-reference across, they also tend to have inferior quality presentation, images and text.[7] While some years removed, a casual search on any academic journal database will corroborate the study's findings: many imported figures are unintelligible and fuzzy, full page scans are often black and white and marred with artifacts and image resolution is not streamlined for readability. These are serious failings on articles which rely heavily upon graphs and do not feature redundant text: understanding them may be difficult

or impossible. Print journals offer a superior reading experience. They are also the cheapest way to retrieve the latest research: electronic subscriptions to individual titles are markedly more expensive than print (see page 4), while full-text electronic subscriptions are prone to embargo delays.

Alternatives

I don't think much time must be spent discussing alternatives as they are all around us. Virtually every academic institution has subscriptions to dozens of full-text electronic databases, and many have completely abandoned subscribing to print journals altogether. Of this latter category community colleges reign and many provide an adequate, if not comparable level of education when contrasted against the larger universities. In this way digital databases have bridged the gap between powerful corporatized universities and modest community colleges: an institution no longer need a massive campus and dozens of librarians to "house" tens of thousands of titles, but only a computer center.

In the past community colleges and smaller universities were dependant on the guidance and assistance of large ivy league schools, as they lacked the storage capacity, funds and facilities to subscribe to comparable amounts of print journals. In our current day and age it is possible for students to access the same titles from anywhere: it has leveled the quality of potential distance learning. Space is a precious commodity on smaller physical plants and institutions on modest budgets simply avoid housing duplicates of titles which are otherwise available digitally, instead focusing on offering users what they can't get online: books. According to this trend I am hopeful for our library's future and development.

Recommendations

As a most conservative measure I would advocate subscribing to the major full-text and aggregating electronic journal databases, in order to fulfill our obligation of basic service to our users. These databases are the least expensive and offer the widest array of titles, although less useful for focused research and unable to access exclusive content. To fulfill this latter category I want to once more stress the importance of surveying the user base to determine exactly what services they need as well as their information retrieval habits and preferences. We will undoubtedly have to subscribe to several more expensive individual journals or publisher packages, but it is wiser to do so on the basis of demand rather than at random. We should not devote the majority of our collections budget to financing subscriptions to science packages while our school has a very limited science department. While and after we have determined the number of databases we will be subscribing to, as well as the approximate number of users who will be accessing our systems (derived from surveying), it would be wise to consult the technologists to plan for the expansion of our computer systems. We would also do well to review the other institutional readiness conditions as outlined in "analysis," among other external and internal considerations.

One way in which we can not only expand the number of titles offered to the user but also decrease expenses is to eliminate print duplicates of titles that are available in our new electronic database systems. Cornell University, facing budget cuts to library funding, recently sold off 95,000 duplicates to Tsinghua University in Beijing. Doing so freed up space, stabilized the funding crisis and expanded access to digital collections.[8] Judging from the tone of your

memorandum we are not threatened with an immediate budgetary crisis. Selling off duplicates may however free up the funds needed from a balanced budget to expand into electronic collections.

Another measure we might consider is to not subscribe to the pricey individual electronic subscriptions or packages at all. Many journals allow access per article, enabling our institution to avoid the costly overhead of complete subscription. For journals on obscure subject matter that are rarely accessed, this may prove to be the most economical and viable option. Whether or not to subscribe would need to be informed by user usage statistics, or by a properly responded survey. In any case, if a certain title only need be accessed once, by a single individual, or even a half dozen times, it is uneconomical to subscribe. This proposition is a middle ground between full subscription and denying all access on the basis of saving funds.

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[1] Nila A. Sathe and Jenifer L. Grady. *Print versus electronic journals: a preliminary investigation into the effect of journal format on research processes*. 2002. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC100770/
[2] Ibid.
[3] King, D.W. and Montgomery, C.H. *After Migration to an Electronic Journal Collection: Impact on Faculty and Doctoral Students.* D-Lib Magazine, 8:12, December 2002. World Wide Web: <http://www.dlib.org/dlib/december02/king/12king.html>. King, D.W., Tenopir, C., Montgomery, C.H., and Aerni, S.E. "Patterns of Journal Use by Faculty at Three Diverse Universities." D-Lib Magazine, 9:10, October 2003. World Wide Web: <http://www.dlib.org/dlib/october03/king/10king.html>
[4] Sandra L. De Groote. *Online journals: impact on print journal usage*. 2001. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC57966/
[5] King.
[6] King, D.W. and Montgomery, C.H. *COMPARISON OF COST AND USE OF UNIVERSITY ELECTRONIC AND PRINT JOURNAL COLLECTIONS.* http://net.educause.edu/ir/library/powerpoint/EDU03138.pps
[7] Sathe and Grady.
[8] Samantha Willner. *To Cut Costs, Library Unloads 95,000 Volume Duplicative Collection*. http://cornellsun.com/section/news/content/2009/11/04/cut-costs-library-unloads-95000-volume-duplicative-collection