April 2003

Libraries in Transition: Impact of Print and Electronic Journal Access

Robert Alan

The Pennsylvania State University Libraries

Follow this and additional works at: <https://docs.lib.purdue.edu/atg>

Part of the [Library and Information Science Commons](#)

Recommended Citation

Alan, Robert (2003) "Libraries in Transition: Impact of Print and Electronic Journal Access," *Against the Grain*: Vol. 15: Iss. 2, Article 10.

DOI: <https://doi.org/10.7771/2380-176X.4020>

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

Libraries in Transition: Impact of Print and Electronic Journal Access

by Robert Alan and Nan Butkovich (The Pennsylvania State University Libraries)

Electronic journals allow timely and convenient content delivery to library users' desktops. Enhanced image quality and search interfaces have resulted in significantly increased demand for electronic journals and reduced use of print volumes. This provides libraries with the option of canceling print journal subscriptions. **Drexel** and **Los Alamos National Research Laboratory** canceled the majority of their print subscriptions when online equivalents were available.^{1,2} **Princeton** also canceled print equivalents when they had "confidence in the stability and performance of the publisher, where the financial advantage is significant, and where the browsing use is insignificant."³

The shift to electronic formats is a mixed blessing for academic institutions. The costs are great; subscriptions often are higher, and the technology infrastructure needed to provide electronic access is complicated and expensive. At the same time, libraries must still maintain the infrastructure needed for print, in part because of unresolved issues concerning archiving and preservation of electronic journals. Libraries may also retain print subscriptions due to licensing agreements which directly link online access to the print subscription. However, savings from canceling print may represent only a small portion of the total cost of the content, access, and print fees. The reality, therefore, is that many libraries are in a transitional period, having to allocate resources to manage both print and electronic journal collections.

Penn State is one such library. Over the past several years the collections budget has shifted funding to support the growing demand by library users for online access. **Penn State** currently subscribes to approximately 14,000 electronic titles, including 4,100 that are unique titles. Most of these are accessible at all **Penn State** campus locations.

Impact on Public Services

The advantage of electronic resources comes when public service is factored in. Faculty, staff, and students at most colleges and universities across the country now have 24/7 desktop access to electronic resources, and they take advantage of this access. Although **Brown's** study found that scientists in the physical and mathematical sciences chose to use print journals even while asking for access to electronic versions,⁴ others indicate that scientists have come to rely on the electronic formats rather than the print to the point that some scientists no longer "feel the need to visit the physical library, but often use our services without even noticing."⁵ This has led to the situation in which some have predicted the ultimate end of print journals.⁶

This prediction has not yet come to pass, although it may be approaching faster than we think. A citation analysis study of faculty publications at the **California Institute of Technology** showed that "54% of the journals cited were

available online, but only about 38% of the cited references were available electronically."⁷ At **Penn State** approximately half of the titles in the Physical Sciences Library collection (chemistry, physics, astronomy, and chemical engineering) are accessible in an online format, although the average starting date of the electronic collection was 1992. Reshelfing studies of its print journals collection show that over time, usage of print journals that are available electronically has dropped precipitously.

As a result, the **Physical Sciences Library** has been part of a study that experimented with an alternate storage option for these print volumes. Instead of binding and retaining them onsite, the volumes are shrink-wrapped and stored offsite. Since a standard 2" bindable unit costs \$8-\$10 to bind while shrink-wrapping costs about 15¢ per bindable unit, significant monetary savings are realized as well. The pilot study has been successful, and as a result, the **Physical Sciences Library** will begin doing this on a large scale, thus relying heavily on the electronic subscriptions while maintaining print at a lower cost. However, this leaves the library vulnerable to shrinkage, particularly if it is in a shared space with another department. On most campuses, space is at a premium, and departments desperate for more laboratories, offices, and classrooms look hungrily at libraries with empty shelves. Librarians can be forced to justify their space needs.

In our experience, reliance on electronic access impacts reference functions. In spite of the growing number of patrons who were born into the computer age, there are still many users who need assistance with basic computer skills. However, the technologically savvy need help as well. We now aid patrons in getting connected to the electronic infrastructure and in learning the intricacies of the multitude of interfaces as well as help them actually find the information that they need. Librarians also must now carefully consider license agreements and identify who are authorized users and where those uses can occur.

We have observed that this format shift has also had an impact on how and what we teach in library instruction. The days of flipping transparencies on overhead projectors are gone, as are stacks of superseded indexes that were used in bibliographic instruction classes. The resources taught are often available only in electronic format. At the same time, however, we must convince users that print still has value. Librarians often encounter patrons who refuse to use anything that isn't available electronically. This is disturbing, since valuable research is summarily dismissed simply because of its format. The consequences of an incomplete literature search can result in a tragedy like that at **Johns Hopkins University** in 2001.⁸

There has not been a rush to cancel print versions, however. In addition to cost, licens-

ing, and infrastructure

concerns, missing content is also an issue. **Sprague** and **Chambers** noted that illustrations, tables, and graphs are often deleted, and occasionally even entire articles are omitted.⁹ **Foster** discusses **Elsevier's** decision to delete certain articles that have been questioned on the basis of academic integrity from its e-journal database, **ScienceDirect**. She compares **Elsevier's** actions with those of several other scientific publishers.¹⁰ In other cases some journals, such as *Physics Today*, have content that is available to members and individual subscribers but not institutional subscribers.¹¹

Impact on Technical Services

Technical service operations have also been greatly impacted by the need to maintain dual formats. **Edwards** suggests that since most electronic journals are really traditional journals in electronic format, acquisitions and processing procedures for managing electronic journals will not differ significantly from those for print.¹² However, others argue that electronic journals offer new challenges due to the number of electronic journals now available and the complexity of management and access issues. **Montgomery** concluded that selection, ordering, and cataloging processes for electronic titles are more complex than those for print journals.¹³

The selection and ordering process will often vary from print due to evolving electronic pricing models. Management of the collections budget requires an understanding of the impact of each electronic journal package. Cataloging and access issues for print journals have always offered challenges due to changing publication patterns. However, electronic journals can be even more volatile due to variations in coverage dates, broken links, and distributor changes. At **Penn State**, there is also a sense of immediacy with electronic journals that may not always be the case with the print journal. Once electronic journal titles have been ordered and activated, technical service customers have come to expect immediate, uninterrupted access.

Drexel and **Los Alamos** reported reductions in some technical service costs following the cancellation of print. As expected, there were reductions in staff time needed for check-in, claiming, ordering of replacement issues, and binding. However, both noted that staff skill levels needed to be higher for electronic versus print related functions.¹⁴ **Drexel** indicated that these more advanced skills were in the areas of acquisitions and cataloging support.¹⁵

At **Penn State** responsibility for electronic resources management (ordering, tracking, cataloging, etc.) is spread between several units within technical services and with collection development, the latter being responsible for selection, negotiation, and licensing. Librarians

continued on page 34

and staff responsible for various aspects of electronic resources management also had other responsibilities within technical services, including implementation of a new integrated library management system in 2001. While the service level remained high, there was an obvious need for additional support within technical services for electronic resources management.

In 1999 **ERLIC (Electronic Resources Licensing Information Center)**, an AccessTM database, was developed to manage data that could not be maintained in either **Penn State's** locally developed **LIAS (Library Information Access System)** or any commercial products available at that time. **ERLIC** provides information about the status of order requests, access issues, funding and costs, status of payments and renewals, content and coverage information, information on licensing agreements, and usage statistics.¹⁶ **ERLIC** has added value to the electronic journal collection by improving access; reducing document delivery costs by blocking requests for titles available online to **Penn State** customers; and, providing a single system for managing licensing data. The downside is that **ERLIC** is basically a stand-alone system that contains locally defined data. While it continues to be the primary tool for electronic resources management, there are ongoing technical service costs associated with **ERLIC** development and management that must be considered.

An additional priority was the need to develop library staff with skills necessary to manage electronic resources with corresponding reclassification of positions to higher levels. At least one position would need to be dedicated to electronic resources management. This position was created from an existing salary line previously assigned to print acquisition functions and classified at a higher level, amounting to an 8% increase in staff costs. Serial ordering and cataloging staff have also needed to devote more time to electronic resources. Constant vigilance is required in monitoring invoices and renewals for print journals that include an online access component. Due to the large increase in the number electronic journals acquired, serial catalogers have devoted 25-50% of their time to electronic journal cataloging, often at the expense of other cataloging related activities. Serial holdings maintenance workloads have increased due to weeding of duplicates and relocation of print journal runs to offsite storage. Therefore, there has been a significant increase in technical services staff time devoted to electronic journals over the past several years, with the most significant increase being within the past two years.

Commercial solutions to electronic journal management, value-added services from information vendors, and standards development are factors that will impact technical service costs and service levels. The complexity of electronic resources, lack of sufficient staffing levels, and need for timely access have provided viable business opportunities for the library vendor

community. Electronic journal management systems, citation linking software, and portal products offer various alternatives to be considered. Vendors now make available record sets of electronic journals for loading into the library's online catalog or other databases. The result is enhanced access to aggregators at a much lower cost than if the records were added by library staff. As an in-house developed system, **ERLIC** uses **Penn State's** set definitions for licensing data. The **Digital Library Federation (DLF)** and **NISO** are currently developing a standard set of data definitions related to identification, access, and licensing of electronic resources¹⁷ and the exchange of serials subscription information.¹⁸ As standardization becomes a reality, there is an expectation that standards will facilitate the exchange of data between publishers, vendors, and libraries. Integrated library management system vendors should then be able provide solutions for managing licensing information.

Libraries that have cancelled the majority of their print subscriptions in favor of online access can more easily compare print versus electronic journal processing costs. However, the budgetary reality for most libraries that maintain print and electronic journal subscriptions is the difficulty in assigning costs and values during this transitional stage. While there is an assumption that overall technical service costs have increased due to the significant increase in the number electronic journals acquired, there is also the expectation that technical service costs assigned to electronic resources management will eventually decrease in relation to service provided. Technical service costs for managing print collections have been reduced due to such factors as the availability of high quality bibliographic records from utilities, outsourcing, and streamlining of processes. Those same factors are now being applied to electronic resources management. A variety of in-house and commercial solutions combined with standards development is already providing libraries with cost-effective alternatives for electronic resources management.

Conclusion

Electronic access to journal content has provided libraries in transition between print/electronic and electronic only with options for managing collections, space, and processing costs while improving service to users. Print journals with electronic equivalents can now be stored offsite or weeded from the collection without impacting access, and duplicate print subscriptions can be cancelled. The development of viable archiving solutions such as **LOCKSS**,¹⁹ coupled with expected cessation of print journal publishing by some publishers, will introduce significant changes for all libraries. But for now, **Penn State** is taking advantage of options that were not previously available while learning how to better manage the growing electronic collection in support of the teaching and research needs of faculty and students.

Acknowledgment: Sue Kellerman provided the binding cost data.

References

1. Montgomery, Carol H. 2000. "Measuring the Impact of an Electronic Journal Collection on Library Costs: A Framework and Preliminary Observations," *D-Lib Magazine* 6(10); (October). <http://www.dlib.org/dlib/october00/montgomery/10montgomery.html>.
2. Hoover, Carol. "Cancellation of Print Journals at a National Research Laboratory." http://www.sla.org/division/dst/cancellation_of_print_journals_a.htm.
3. Goodman, David. 2001. "One Years' Experience Without Print At Princeton," in National Online Meeting 2001: proceedings of the 22nd National Online Meeting, New York, May 15-17, 2001. Medford, NJ: *Information Today*; p 183.
4. Brown, Cecelia M. 1999. "Information Seeking Behavior of Scientists in the Electronic Information Age: Astronomers, Chemists, Mathematicians, and Physicists." *Journal of the American Society for Information Science* 50(10): 929, 936.
5. Grothkopf, Uta. 2000. "Astronomy Libraries 2000: Context, Coordination, Cooperation." In Heck, A., ed. *Information Handling in Astronomy*. Dordrecht, The Netherlands: Kluwer; p 166.
6. Butler, Declan. 1999. "The writing is on the Web for science journals in print." *Nature* 397: 195; (21 Jan.)
7. O'Donnell, Jim. 2001. "Analysis of Faculty Citation Behavior in the Electronic Age: A Study of One Institution's Recent Publications." *GIS Newsletter* 192: 13; (October; abstract of paper presented at 2001 Geoscience Information Society annual conference).
8. McLellan, Faith. 2001. "1966 and all that-when is a literature search done?" *The Lancet* <http://proquest.umi.com/pqdweb?Did=000000079162124&Fmt=4&Deli=1&Mtd=1&Idx=8&Sid=1&RQT=30>. (Available in print as v.358, no. 9282, p 646; 25 Aug. 2001).
9. Sprague, Nancy; Chambers, Mary Beth. 2000. "Full-Text Databases and the Journal Cancellation Process: A Case Study." *Serials Review* 26(3): 26-29.
10. Foster, Andrea L. 2003. "Elsevier's Vanishing Act." *The Chronicle of Higher Education*. <http://chronicle.com/free/v49/i18/18a02701.htm>. (Available in print as v.49, no. 18, p A27; 10 Jan. 2003).
11. Physics Today-Frequently Asked Questions. 2002. <http://www.physicstoday.org/faq.html>.
12. Edwards, Judith. 1997. "Electronic Journals: Problem or Panacea?" *Ariadne* 10; (July). <http://www.ariadne.ac.uk/issue10/>.
13. See Ref. 1.
14. See Refs. 1 and 2.
15. See Ref. 1.
16. ERLIC is shareware and available for downloading for at http://www.libraries.psu.edu/iasweb/fiscal_data/ERLIC_SHARE/Publish/page2.html.
17. DLF Electronic Resource Management Initiative. <http://www.diglib.org/standards/dlferm02.htm>. (Further discussion at: NISO/DLF Workshop on Standards for Electronic Resource Management May 10, 2001. http://www.niso.org/news/events_workshops/NISO-DLF-wkshp.html)
18. Jones, Ed. "NISO White Paper - The Exchange of Serials Subscription Information." <http://www.niso.org/standards/resources/SerialsWPI.html>.
19. Reich, V. and Rosenthal, D. 2001. "LOCKSS: a permanent Web publishing and access system." *D-Lib Magazine* 7(6); (June). <http://www.dlib.org/dlib/june01/reich/06reich.html>.