Rethinking Technical Services for a Digital World

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Abstract: Libraries should consider new ways to integrate and streamline their organization and work processes for effective and efficient service to library patrons. This paper looks at recent efforts in academic libraries to explore cost-saving measures without sacrificing service quality. It presents an overview of ways libraries can improve technical services to provide electronic resources and other services for library patrons.

The use of digital media is putting pressure on technical service functions in academic libraries. In his review of paper versus digital for scholarly materials, Richard Quandt notes that many librarians perceive the rising costs of journals as driving a “library crisis”. This crisis is exacerbated by the need for expensive information technology infrastructure to support digital media, and a lack of data to demonstrate that digital initiatives are truly improving the productivity of teaching, learning and research in higher education. ¹

Libraries have made significant investments in digital technologies, both for content and for operations. While the ultimate effect on teaching, learning, and research may still need to be demonstrated, there is substantial evidence that information technologies can improve access to digital media, as well as enabling organization and process changes for efficient and effective delivery of digital media and library services.

An especially fertile ground for exploring such cost-saving process changes is an academic library’s technical services functions. This article considers ways that organization and process changes can improve an academic library’s operations, thus freeing resources to improve services for library patrons.

Statement of the Problem & Proposed Solution
In 2002 Duranceau and Hepfer sounded an alarm about academic library operations by stating: “the problem of staffing for e-resources has reached a crisis level.” ² They present evidence from a small survey that looks at fifteen libraries’ technical service areas and the additional workload attributed to the support of digital media services. Their conclusion is that academic libraries need to hire more staff. Unfortunately, their paper presents a one sided perspective on the changing work in academic libraries.

Thinking about digital media and services beyond the technical services area, Christian Boissannas writes about the need for closer integration of public and technical services within libraries. Boissannas writes, “The implementation of digital libraries cannot be successful without a comprehensive system-wide approach that calls for people with different experience and expertise to work together across, rather than in, functional groups.” Boissannas calls this re-engineering of traditional library services “deep integration”. ³
Thinking about this deep integration calls into question the present organizations and work processes within the library. When a library operates within a large organization, such as a college or university, we can take this idea a step further by considering how the idea of deep integration leads us to consider processes and functions not only within the library, but also within the larger university.

The benefits afforded by the increased use of digital media, process reviews, and information technologies present opportunities for organization and work flow changes that can alleviate the perceived “staffing crisis” within an academic library. There are numerous alternatives for dealing with the rise of digital media in an academic library. These alternatives include solutions in acquisitions, serials, cataloging, systems, and other areas of the library. These solutions use work redesign, systems, organization changes, and outsourcing as ways to provide more effective and efficient services while avoiding adding additional staff.

**Acquisitions**

There has been much work in academic libraries to improve operations by integrating acquisitions with vendor systems and by purchasing additional services from vendors. Improvements in this area can lead to a "technology dividend" -- making resources available that could be used for improving support for digital media and patron services.

Flowers and Perry present evidence that integrating vendor databases into daily selection and ordering operations to dramatically improve service to patrons. They report on changes at the libraries at the University of North Carolina and the University of Chicago. These changes in work processes have reduced handling and manual intervention while increasing accuracy. Results include ordering time reduced by two to six weeks, or more. In addition, using vendor-supplied databases as part of workflow changes reduces order duplication, provides shelf-ready processing, and provides bibliographic records that help save processing costs.  

The Wichita State University Libraries also report improved and increased services without adding additional staff. They report benefits from developing a single source relationship with Blackwell’s Book Services. This relationship provides Wichita State with prompt fulfillment of orders, MARC records and EDI invoices, prompt and reliable financial services, enhanced discount, and custom technical services and collection development reporting.  

Zuidema reports on a recent re-engineering project at the University of Illinois, Chicago (UIC) libraries to improve the book ordering process. This redesign consolidated the book ordering process so that “rather than a process carried out in two departments by two or three people, the redesign resulted in a process combined and simplified through automation so that one person working in one department could perform it.” The work of this one person was also simplified by creating macros to speed data entry. The efforts of the UIC library staff were also able to decrease the cycle time for book ordering between 56 to 80%.  

At Iowa State University Libraries time and cost studies conducted between 1994/95 and 2000/01 demonstrated considerable cost efficiencies for acquisitions. These improvements are attribute to a number of initiatives. The factors which generated measurable cost savings
included: choosing a single major approval vendor; merging the formerly separate monographs and serials acquisitions department into a single department; and using PromptCat bibliographic records for items handled by the approval plan. The merged acquisitions department was able to reduce staffing from 7.5 full-time equivalent (FTE) staff to 4.5 FTE staff. Student assistance in acquisitions also decreased from 1.15 to .17 FTE. In addition the use of PromptCat records allowed responsibility to shift down in the organization. In their study, Fowler and Arcand report “copy catalogers now had the time to work on the less-than-full level of copy cataloging that formerly had been done by faculty catalogers, thus freeing the time of faculty catalogers to work on more original cataloging. All levels of catalogers had sufficient time to handle the emerging need for more cataloging of electronic resources.”

Reducing hand-offs and simplifying tasks are but a few of the many ways that work can be simplified and made more efficient. Yet the organization and work processes of the past continue to inhibit thinking in libraries, and in library professional organizations.

In reviewing the work of traditional library acquisitions functions in 1998 Christian Boissannas concluded that acquisitions work has become too specialized. Part of the blame for this specialization is attributed to the ALA. Boissannas calls for ALA to pull back from recognizing this specialization and instead merge “all acquisitions-related groups in Collection Management and Development Section, Serials Section, and Acquisitions Section, with all similar groups in the ALA divisions into an organization concerned with the delivery of information.” If libraries were to consider themselves as information delivery organizations, it would provide a new perspective for considering how new work processes could better serve library patrons.

**Serials**

Perhaps nowhere else in an academic library has the impact of digital media been felt more profoundly affected than with serials. The rising costs of print subscriptions have caused many libraries to consider if their serials budget would be better spent on electronic serial subscriptions rather than print. John Cox’s analysis of electronic journals versus print journals finds that publishers can deliver electronic journals at lower costs, and that libraries have greater operating costs dealing with reader requests for printed journals. Yet some still question whether adding support for electronic serials generates additional demand for staff to support both electronic and print serial collections.

A recent and extensive economic review of fixed and variable costs of print versus journal collections found substantial evidence to move to an all-electronic journal collection. Using data from Drexel University (which has converted to all electronic journals), the University of Tennessee, and the Oak Ridge National Laboratory found that an electronic collection and services requires “lower prices per title, less time of staff, and potentially, substantial savings in space”. This study also found that users benefit from “flexibility of access; substantial savings in time in searching, location, and obtaining the articles; availability of new and useful features; and broadening the number of journals they use.” This report also notes that in a recent study of Drexel users, 84% report preferring electronic journals.
In another discussion of serials collections on the web, Moyo notes that in libraries that offer full-text electronic journals, users tend to use the online resources more than the print. Moyo points out that even when these online resources do not offer the “best quality” information available at that library, users “are still likely to trade-off the quality for the convenience of access and ease of use.”

Canceling all serials print subscriptions would be seen by many as a radical step. A recent survey of 527 academic libraries report found that only 4 had canceled all print journals, magazines and newspapers. However, 371 libraries reported canceling some (70.3%), and 46 reported canceling most (8.7%). Clearly, digital subscriptions have replaced some print, and as print pricing increases we can expect to see more print cancellations in favor of digital.

Print subscriptions may not have to be sacrificed at the altar of digital technology to gain efficiencies. Even considering why a library does some simple tasks can lead to cost savings without sacrificing effective library services. The University of Nevada, Reno took the simple step of eliminating print serial check-in. They found that this task added little value to library patrons, and that they were able to maintain the same level of serials service without this task. They were able to reallocate staff time for other duties without a negative impact on patron access to print issues of serials. More analysis of the tasks involved in managing and maintaining a library’s print and electronic serials collections could lead to similar cost savings without a loss of quality.

**Cataloging**

McCain and Shorten conducted a survey of ARL libraries to identify cataloging that was both effective and efficient. Within the 27 libraries that responded, they found a wide disparity in the number of people employed, work distribution, the numbers of items cataloged and the cataloging backlog at the surveyed institutions. This survey included detailed questions on tasks such as original cataloging, copy cataloging, authority records, holding maintenance, union list maintenance, cataloging theses and dissertations, importing bibliographic records, marking and labeling, and even applying security tags. This survey identified six institutions whose practices could be used as benchmarks for efficient and effective cataloging procedures. Interestingly, when the surveyed institutions were asked how best to make their institutions more efficient, only one responded that changing their work processes could make an improvement. This study suggests that most academic libraries can find ways to improve their efficiency and effectiveness by comparing their processes and work flow to best practices.

Libraries need not limit themselves to examining existing practices to improve services. MIT reports some success saving time using simplified core cataloging records for most of its serials. They expect that more savings could be obtained with an even more basic core record for serials, and with a larger serials collection.

The idea of cataloging as a separate and distinct technical services function has come into question with the rise of electronic resources. Dormer predicts that cataloging as an identifiable library profession will change dramatically with the rise of outsourcing, changing organizational structures, and new systems and media that require more content analysis and
The increased use of digital materials has increased demand for library systems that will help save money and improve services. While many academic libraries have attempted to develop their own resources for deploying and managing these systems, the possibility of working with a centralized university information technology organization can present opportunities.

Mark Cain, reporting on the use of proxy servers and a recent theft of information from JSTOR calls for increased attention to the security of a University’s proxy servers. This attention to the importance of institutional responsibility for servers on campus is increasingly causing institutions of higher education to centralize administration and security of the institution’s servers within the centralized Information Technology (IT) function. Academic libraries should consider whether to continue server administration as a library function, or whether this function would be better managed by the institution’s centralized server security professionals.

Academic libraries need to look for opportunities to leverage their position as part of a larger institution of higher education. Illinois Wesleyan University’s Ames Library provides several examples of integrating for support of library systems with organizations beyond the Ames Library staff. Illinois Wesleyan University belongs to the Illinois Library Computer Systems Organization (ILCSO). As a member of this consortium Illinois Wesleyan has effectively outsourced system support for most of its library applications such as the catalog and circulation.

Illinois Wesleyan also runs its own server-based systems outside the consortium such as the Illiad and Ariel systems for inter-library loan and electronic document delivery. The library also creates and maintains its own web pages. Support for these systems is split between the library technical services staff and the central IT organization. The central IT organization maintains, upgrades, and performs back-up for the physical servers, while the Ames library staff handle administration of the various library software applications and web pages.

Support for the over 100 public computers in the Ames Library is also split between library and central IT staff. The Ames library staff installs software, assist with operations, and reports problems, while the central IT organization troubleshoots and repairs broken equipment. All network support for the library is performed by the central IT organization. With this level of integration, the Ames Library operates effectively with only 2 FTE systems staff. The effectiveness of this combined operation was noted by the report from the visiting team for the University’s most recent accreditation. The visiting team wrote: “The fine services and equipment afforded by the Office of Information Technology and by the staff of Ames Library are exemplary models that could be emulated on other campuses.”
Northwestern University provides a further example of integrating support for systems with library and centralized IT staff. Their “2East” unit brings together members of the academic technologies unit (AT) of centralized IT, the library’s Digital Media Services (DMS) group and collection management office of the library. An example of this integration is the operation of Northwestern’s Blackboard course management system. DMS works with faculty to digitize slides, photographs and streamed audio and video. While AT handles account creation, training and support for using the course management system, project development, and live video web-casting services.21

Academic libraries need to explore ways to work with their central IT staff to help with systems management and security. This is not to say that central IT staff should necessarily run the library applications that run on these systems. But a core group of central IT system administration staff knowledgeable in the details of patching and supporting the various server operating systems can free an academic library’s systems staff to work on the library applications that will improve and support the work processes of the library.

Other areas
There are many other areas where libraries can benefit from analyzing the processes used to deliver services to library patrons. The University of Nevada Las Vegas provides a good example of how it used process review to reduce its backlog Inter-Library Loan (ILL) requests. By using flowcharting, replacing paper forms with electronic requests and using the Ariel system to send and receive documents electronically, UNLV was able to increase the number of ILL requests processed by more than 40% and reduce processing time without adding additional staff.22

Another library service area that needs to be included in our review is access and preservation of a library’s archives. Much work is being done to consider digital access as a way to add value to a library’s archives. These new digital initiatives create entirely new work processes. If a library decides to undertake such a project it will need to consider which processes should be done in-house and how much of this work should be outsourced. If these are print archive should the items be scanned or re-keyed? Can existing staff do this work or should it be outsourced? If outsourced, should the library consider a vendor that uses offshore labor? How can we be sure that these new digital initiatives will be both effective and efficient? Can the central IT organization help? These questions deserve consideration before undertaking a new digital archive project.

Conclusions
The solution to the “library crisis” is not simply a matter of finding funding to add additional staff. Academic libraries need to consider whether their work processes and organizational structures provide the most efficient and effective solutions to deliver library services to patrons. There are numerous examples of libraries that were able to use work process review, organizational integration, outsourcing, and improved technology solutions to reduce costs and improve services.

Academic libraries would be well to begin to examine their work processes and look to their peers for best practices. Are all the tasks being done by library staff adding value to services?
provided for the library’s patrons? Could operations be made more efficient with closer integration and communications with the academic institution’s central services organizations? Are there opportunities to work with consortia to lower costs and improve services? Are there new technologies that would help the library solve integration and access problems? These are just some of the questions that libraries need to consider as ways to lower costs while make operations more effective.

Electronic resources have shifted the cost structures of libraries. The additional of digital materials should not be looked at simply as an additional burden that requires additional staffing. Services, tasks and organizational structures are all candidates for evaluation and review. Before adding staff, academic libraries should evaluate their operations to consider whether this would be the most effective and efficient solution for their patrons.

ENDNOTES


