Practical Academic Librarianship: The International Journal of the SLA Academic Division
5(2):23-31, 2015 http://journals.tdl.org/pal

Where Have All the Books Gone? Exploring "Virtual Libraries" at Cornell University's Engineering and Physical Science Libraries

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Abstract

This paper examines the definition of a "virtual library" by observing the experiences of two such libraries in the Cornell University Library system: Physical Sciences and Engineering. In the past five years, both of these libraries closed their physical collections because of budget and print use issues. Since the closure of the collections, both libraries–and their librarians–had to imagine what a virtual library could be and what services could support a highly technical user base that relied on e-journals and e-books. This paper discusses staffing considerations, new approaches in collection development, and the evolution of library roles for the libraries operating in this new model.

Keywords: library models, outreach, electronic resources, librarian roles

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Introduction

There has been a recent move in higher education to close smaller unit or discipline-specific libraries (Bell, 2009), putting the university library in the challenging position of maintaining awareness of available services and expertise without the reinforcement the physical space once provided for it. The information needs still exist: it is critical that students learn how to locate and evaluate highly specialized information from a range of sources, and it is the authors' contention that it is essential that subject specialists and librarians be available.

At Cornell University, several unit libraries have undergone dramatic change. The Physical Sciences, Engineering, and Entomology Libraries closed their physical locations and have now branded their units as "virtual" libraries or collections (Glazer, 2009; Martinez, 2010a). The Hotel School and Management Libraries have merged with the Industrial and Labor Relations Library, forming a new library cluster (Martinez, 2010b). Finally, the university is broadening its educational focus by introducing a Tech Campus (Ju, 2011), bringing together engineering and business disciplines. The university is still determining library needs for this new program but it is likely that this will not include a traditional library space or collection.

Cornell's situation is not unique: many other unit libraries in academic institutions are undergoing dramatic changes. In fact, special libraries are experiencing these shifts as well (Matarazzo & Pearlstein, 2010). This presents an opportunity to consider a forward-looking view of librarianship–one that exists independent of physical stacks of materials, where onsite subject specialists serve as stewards of information. It can be instructive to consider Cornell's experience and offer guidance to other libraries that may be experiencing the same shifts. In addition, reflecting on how once-physical libraries transformed can offer insight to entities that may begin without a physical presence. Therefore, this paper will discuss a definition of a virtual library through the lens of two virtual libraries in the Cornell University Library system: Physical Sciences and Engineering.

Literature Review

The definition of a library can vary. Traditionally, academic libraries served as the center of a campus–a hub for intellectual activity, study, and scholarship. One way to consider a library is through three key physical components: the building for reading and reference, the actual collections, and the library staff (Sennyey, Ross, & Mills, 2009). These categories transform

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when one considers the rapid change taking place in physical libraries, in users' information seeking behaviors, and in the technology landscape. Whereas once all functions of a library occupied the same footprint, there is a growing conceptual separation between where users look for and expect to find information and the physical spaces that support the reflection and collaboration needed for scholarship (Pomerantz & Marchionini, 2007).

Though one might conjure up endless stacks with books when thinking of an academic library, many libraries no longer resemble this vision. Many universities have augmented library spaces with technology and multimedia and/or redesigned library stack space into collaborative study spaces for undergraduates and graduate students (Lippincott & Duckett, 2013). Librarian roles ultimately shift as these spaces evolve (Sinclair, 2009; Zdravkovska, 2012) .

Library collections have changed significantly since the emergence of online materials. Libraries, and science libraries specifically, have dramatically increased the amount of information available to users online through subscriptions and licensed resources and there is also a wealth of information freely available online. Information is networked and ubiquitously available with convenient access at any time, and this can often obscure the library as the source for resources. As a result, users may not feel the need to visit a library space or to speak with a librarian (Quigley, Peck, Rutter, & Williams, 2002; Hemminger, Lu, Vaughan, & Adams, 2007).

With these changes taking place, librarian roles continue to evolve. There are new modes of outreach and new services, all in support of a landscape that not only looks dramatically different from the recent past but will be expected to look dramatically different in five or ten years.

What Happened at Cornell

At present, several unit libraries at Cornell are operating as virtual libraries. Simply put, these virtual units do not maintain a physical presence for the storage of print materials. The Physical Sciences Library was the first to transition to a virtual library. The 2008 budget crisis, a decline in print circulation counts, and a dramatic increase in demand for electronic materials were the principal reasons for closing the Physical Sciences Library facility. Additionally, in order to improve Cornell University Library's standing in the Association for Research Libraries ranking, it was imperative to redirect funds to the collections budget, de-emphasize the print collection, and refocus resources on electronic materials. Soon after Physical Sciences closed

its physical doors, so did the Engineering, Entomology, Nestle Hotel, and Johnson Graduate School of Management Libraries.

In the case of Physical Sciences and Engineering, faculty and student committees helped determine which critical library services from the physical library model to preserve in the transition to a virtual library. The Physical Sciences Library staff visited each of the primary constituent faculty departments (viz., applied physics, astronomy, chemistry, and physics) to explain the situation and to ask for feedback and suggestions on how valued services might be continued after the library closed down its physical presence. While there were too many departments to perform an exactly analogous process for the Engineering Library a year later, the librarians there nevertheless did their utmost to speak in-person and take questions and suggestions before as many departments as possible. Both the Physical Sciences and Engineering Libraries held parallel discussions with graduate student groups.

After this process was completed, the staff decided to emphasize increased online access to journals and e-books, quiet all-hours group and individual study space, rapid delivery of offsite materials (scans or physical materials), and onsite reference librarians. These services became the core of the virtual library model. Highly circulated books remained on campus; the remaining materials now reside in an off-site storage facility that provides scanning and delivery within 24 hours. Subject librarians maintain their offices either in or adjacent to their respective former library space. Individual library websites offer users a customized view of a relevant subset of library materials organized to reflect the information needs of the community (Clark Physical Sciences Library, n.d.; Engineering Library, n.d.; Powell, 2012).

Virtual Library Staffing

In order for the virtual libraries, Physical Sciences and Engineering specifically, to function successfully and meet the needs of their departments, the librarians all work collaboratively. The virtual library model greatly benefits from an open-concept approach that allows for sharing ideas across the individual library units. For example, the Engineering, Physical Sciences, and Mathematics Libraries cluster has an Outreach Coordinator who works with librarians in all the units. The Outreach Coordinator is a force multiplier, helping both to initiate new outreach ideas and to adapt them for the other units, as appropriate. Open communication, through a combination of formal and informal meetings between the units, strengthens all aspects of the virtual library operations.

Library Spaces

Many users are still coming to the former library spaces to study, for quiet refuge, or as a gathering spot for community engagement. This is where the Physical Sciences and Engineering Libraries still have a case for space. During the transition, students strongly advocated for study spaces for both the Physical Sciences and Engineering Libraries. The former Engineering Library space now contains open study space and smaller group-study meeting rooms, numerous PC stations, and four computer classrooms. It is accessible 24 hours a day, seven days a week, with key-card only access later in the day.

While an addition to a new building next to the building that housed the Physical Sciences Library brought a café and a bustling atrium filled with ample seating options, the need for a quiet study space remained. The former Physical Sciences Library space remained a self-enforced quiet study space. Recently, an endowment funded the renovation of a portion of the former library space into flexible classrooms, which students and faculty can reserve when the rooms are not in use.

Collections

The Physical Sciences and Engineering Libraries supported disciplines where electronic resources have dominated use of the collection for well over a decade. Therefore, the print collection was not the focus of the librarians' jobs. Transitioning to a virtual library spotlighted the importance of proactive and active management of electronic materials. The multiplicity of online formats—e-books, e-journals, disciplinary and institutional repositories, specialized databases, freely available online content, and more—means that collection development remains crucial to ensuring a thriving library even without a physical space.

The librarians in the Physical Sciences and Engineering Libraries continually negotiate with publishers to ensure the best access to licensed and online content within the constraints of their budgets. They also consider how users are accessing information when purchasing content and negotiating with publishers. For instance, they advocate for e-materials that allow users to view content on a variety of devices, such as laptops, tablets, and e-readers. In cooperation with the Acquisitions and Technical Services units, librarians have also pursued patron-driven acquisition (PDA) models. In these models, select e-book records are loaded into the catalog, and patron use determines whether the library purchases the e-book. This model complements

the many other approaches the librarians take to building an electronic collection for patrons. For ongoing collection maintenance, librarians monitor use of the collection. Collecting reports on e-material use can be more cumbersome than collecting print use statistics: it often involves aggregating and harmonizing disparate data from a number of sources. As libraries often purchase e-journals in packages, carefully reviewing use statistics is essential to ensuring that the collection is tuned to meet the ongoing needs of the faculty, researchers, and students. Librarians in the virtual libraries often collaborate with librarians from related units and Technical Services and Assessment in order to make informed and coordinated decisions about the collection.

Librarian Roles

How are librarian roles affected by the shift to a virtual library? Ultimately, while many core duties remain, there is a shift in approach for librarians operating in the virtual library model. Reference and outreach efforts are refocused: there is an emphasis on creating relationships with patrons and bringing library activities to a variety of spaces. While neither the Physical Sciences Library nor Engineering Library features reference desks, reference transactions are still abundant. Many of the reference questions come in through e-mail or chat. Librarians often schedule personal consultations with patrons, which can take place in a number of locations, including librarian offices, the patron's lab or office, nearby cafés, or other locations. These consultations are very effective for discussing complex questions and help to develop the relationships that are so vital in the virtual library model.

One-on-one consultations, particularly with faculty, are helpful in providing instruction opportunities, linking course curricula with library skills. Instruction is varied, ranging from one-shot sessions to integration in major course projects. Instruction brings visibility to the library and affords the librarians the opportunity to explain the virtual library model to students. New undergraduate and graduate students may hear from peers that "there was once a library and now there is not" and believe—erroneously—that the library is no longer relevant to their development as future researchers. It is crucial then, in the virtual model, that librarians continually develop partnerships with faculty members and remain visible to students.

Outreach and marketing are also crucial in the virtual library model. Librarians must be proactive and creative in order to ensure that their message reaches as wide an audience as possible. The librarians in the Physical Sciences and Engineering Libraries do a great deal of outreach through social media, including their own blog, Facebook, Twitter, and more. It is

important to continually fine-tune outreach strategies. For instance, librarians were surprised to learn that students most often use the Cornell central events calendar for keeping current about events on campus. Consequently, the librarians now include that venue for advertising library events and activities.

It is equally important for librarians to engage with departments by working with student groups and attending department seminars and meetings. These activities give the librarians the opportunity to learn more about their departments' research, educational, and professional interests. In the Physical Sciences Library, for example, the Outreach Coordinator and Chemistry Librarian meet with the Graduate Association of Chemistry to craft programming tailored to the needs of that student group. Again, maintaining visibility is key in the virtual library model; bringing the "library" to user spaces is a key way to achieve this.

Asessment

The Engineering and Physical Sciences Libraries are starting to look into assessing their virtual model. Since outreach is a major component of keeping the library visible to users, the librarians decided to assess the various outreach, instruction, and other events through a survey targeted at graduate students. Working with the Research and Assessment Unit through the Cornell University Library, the survey included outreach programs given over a span of nine months. The survey asked users if they attended programs and how the programs benefited their graduate career. It also asked why students had not attended programs and their reason for not attending. The survey results were informative on many levels. The communication methods used to advertise the libraries and outreach programs are successful: the librarians feel they are reaching users through e-mail and other specific channels. Users are happy overall with the programs offered from the libraries but are finding difficulty in fitting them into their schedules. An unexpected finding was that graduate students use the programs as an opportunity to network with other students and/or faculty in their departments, particularly those whom they do not see on a daily basis. This demonstrates that even though both the Engineering and Physical Sciences Libraries are virtual, they still provide communal meeting spaces for the users.

Further assessment opportunities lie in surveying faculty on their experiences with our virtual library in terms of instruction, collections, and accessing resources and library services. On a sub-level, assessing individual instruction sessions, outreach events, or lengthy reference

consultations also presents an opportunity for us to evaluate our work.

Conclusion

For the Physical Sciences and Engineering Libraries, going virtual was a response to a number of issues, including budgets and the changing use of the collection. While transitioning away from one of the iconic images of a library—stacks of print materials—was a shock to some, it allowed the librarians to re-conceptualize the role of the library in the academic departments they served. The former library spaces are now study spaces, tuned to meet the individual college's needs. Librarians continue to advocate for the best access to resources, focusing heavily on electronic materials and how their users prefer to interact with them. Outreach centers on establishing relationships with faculty, researchers, and students to maintain visibility and ensure that users understand how the library strives to adapt to rapidly changing information needs and workflows. Through these changes, these libraries continue to form a definition of what it means to be a virtual library within the Cornell University Library system. As the role of libraries evolves, the authors hope that this definition can assist special libraries undertaking similar transitions.

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