The Once and Future Library.

Today's academic library operates in a world of instant gratification, e-commerce, and competition for resources. The traditional roles of librarians are evolving to that of knowledge navigators presiding over a complex, dynamic facility. In the face of these and other escalating trends, there are opportunities to reinvent the academic library.

The practice of collecting written knowledge in a central repository has been the mark of an advanced civilization for centuries. Whether it be the Great Library of Alexandria, the public collections of Caesar Augustus, medieval monasteries where monks lovingly preserving the works of antiquity, the extensive holdings of Renaissance universities, or the growth of American public libraries through the philanthropy of Andrew Carnegie, there has always been a need to house and preserve knowledge. Today, America's largest libraries are a blend of great university collections (with Harvard at more than 15 million volumes, outpaced only by the Library of Congress) and municipal public libraries in major cities such as Boston, New York, and Philadelphia.[1]

Libraries and their content have changed over the centuries. Wooden tablets replaced parchment and papyrus. Hand copied texts were made obsolete by Gutenberg's printing press. It is said that electronic tablets will eventually replace books. The media may change, but the need to have a repository of knowledge will remain. The idea of a library will endure.

Or will it?

Certainly the functions of the librarian have evolved in recent times, moving from a role described partly in jest as "the keeper of the flammable inventory" to that of knowledge navigator.

Today in the academy, there is much discussion on the future of the library, with intense debate in professional circles over the status of brick-and-mortar facilities. Syracuse University Dean of Libraries Suzanne E. Thorin voiced an opinion at the 2009 EDUCAUSE conference in no uncertain terms: "Let's face it: the library, as a place, is dead. Kaput. Finito. We need to move on to a new concept of what the academic library is."[2]

Thorin based her observation on Web-based phenomena such as Wikipedia and other free research tools, e-books, and the growing trend toward digitizing rather than printing information. Indeed, in an era of economic turbulence, many universities are downsizing, outsourcing, and condensing library activities and collections.

But there were many at the same conference who challenged Thorin's pronouncement, insisting that libraries are not shrinking but rather evolving in step with the times, becoming centers of collaboration, communication, and research, now abetted by the latest technology. Certainly the functions of the librarian have evolved in recent times, moving from a role described partly in jest as "the keeper of the flammable inventory" to that of knowledge navigator, assisting patrons to seek and acquire knowledge in multiple ways.

In recent years, Herman Miller has convened a series of Leadership Roundtables to identify and predict future trends affecting education. Representatives from research universities, state colleges, community colleges, private institutions, and architectural and design firms participate in exercises designed to brainstorm the future. In late 2009, one such group convened to focus on the future of the academic library.

There was general agreement that for each challenge faced by educators and librarians, opportunities were also present for those colleges and universities willing to change in order to accommodate financial challenges and the impact of technology on a venerable

institution. Participants identified a series of trends that will affect current library operations, services, and identity.

Expanding globalization will be a challenge for the academic collection, building resources, services, and expectations.

Thomas Friedman in his best-selling book, *The World is Flat: A Brief History of the Twenty-First Century*, offers this observation about globalization and the contributing role of technology:

> "Never before in the history of the planet have so many people—on their own—had the ability to find so much information about so many things and about so many other people"[3]

Higher education is experiencing worldwide growth as almost 3 million students are currently enrolled in foreign institutions, a 57 percent increase since 1999. The success of the Bologna process, with 47 countries engaged in the task of creating a European Higher Education Area, signals greater emphasis on breaking down barriers and promoting scholarship and research across borders.[4]

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In the face of this globalization, libraries will need to look beyond walls, campuses, and even borders. University and college libraries will be increasingly expected to open their resources to visiting students and scholars, in the process increasing the need for sensitivity to cultural differences when it comes to space as well as differing levels of proficiency in the English language. Libraries will face greater demands for access to resources, while library staffs will need multiple language skills and be asked to support more learning at a distance. Digitalization of collections will allow rapid access to, and exchange of, resources, which will raise questions of adequate bandwidth and the cost of keeping technology current.

Globalization will also shape all aspects of teaching and learning. As technology increasingly infuses the curriculum, professors will be able to choose from an international array of source material from which to develop their courses, in turn placing greater demands on libraries to provide needed support services for faculty. Globalization also offers the academic library opportunities to become more effective in serving students and faculty through enhanced partnerships with libraries throughout the world, leading to more open access to knowledge and best practices that will eventually provide more supportive, streamlined services to a new generation of students.

The diversity of ethnicities, experiences, ages, income, opportunities, skills, motivations, and expectations of students create opportunities for libraries to be equally diverse in their management of spaces and delivery and services.

Librarians must be careful in assuming that the skills, abilities, and prior knowledge that today's students bring to college have not materially changed in recent years. Today's high school graduates are the first generation to grow up with technology,

whether it was cell phones, computers, video games, or the Internet. They have fully absorbed it and made it an intimate part of their lives, being comfortable with wikis, podcasting, instant messaging, Facebook, Twitter, YouTube, and other means of networking and learning. As Marc Prensky describes them, they are "digital natives," whose native language is the world of the Internet, computers, and video games.[5]

Librarians must continually assess their current services against the new breed of student they will serve, re-examining how and what they teach students about using libraries while providing a variety of learning experiences through various media. To be truly effective, academic libraries must deliver effective tiered support and instructional services keyed to the increasing diversity of students with respect to their prior educational experience, socioeconomic status, cultural distinctions, and Net Generation learning styles. In a time of rapid change, faculty and librarians must recognize what they don't know and engage in robust conversations with students about their life, study methods, and learning needs in order to provide a more appropriate and effective academic experience.

Academic libraries will be required to partner with faculty at all levels to provide educational support services for a variety of skill levels.

In the summer and fall of 2006, the non-for-profit organization Ithaka commissioned a survey of the attitudes and perceptions of academic collection development librarians and faculty toward the transition to an increasingly electronic environment.[6]

The results revealed that as the World Wide Web offers more opportunities for online scholarship, faculty are finding their local campus library less essential in supporting their research needs. The survey also revealed that while faculty expect to be less dependent on the library and increasingly dependent on electronic materials, by contrast, librarians generally think their role will remain unchanged and their responsibilities will only grow in the future. Clearly, much dialogue and collaboration will be needed to ensure smooth and supportive relationships.

To meet the learning styles of future students, libraries will have to rethink existing and future facilities to include a variety of spaces for consultation, collaboration, and instruction to foster varied learning needs. As the demand for more experiential learning grows, libraries must invent and present to their communities spaces and facilities that invite, inspire, and support a culture of intellectual engagement and exchange, becoming studios and laboratories for faculty and students to engage in learning activities. By offering collaborative spaces, the continuation of conversation between faculty and students is encouraged through problem-based learning opportunities that expand and enhance the basic classroom or laboratory experience.

Closer collaboration between faculty and librarians will enable the library to move from its traditional role of serving as a repository of printed information supplementing the formal classroom experience to a newly enhanced role as the classroom extension, allowing students to not only consume information but also to create it. By better

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understanding how faculty members' attitudes and needs are changing, especially at a disciplinary level, academic librarians and information services units can most effectively target their services and offerings. Working together, faculty, learning technologists, and academic librarians will have an opportunity to make a significant difference in educating tomorrow's graduates.

Academic libraries must evolve their mission from being organizations that facilitate students' consumption of information to organizations that facilitate students as creators of information.

As technology increasingly intrudes into the stereotypical library setting, it is time for serious discussion about repurposing the academic library. There are some who say the venerable location of study and storage is out of date. Spaces that were formerly devoted to reading and book-centered research may need to be redesigned to accommodate student preferences for active, collaborative learning, allowing them to be more proactive creators of information rather than passive receivers. Former reading rooms may need to be redesigned into more active, even noisy, enclosures, while traditionally under-used spaces may need to be converted into welcoming community learning spaces.

As national research indicates the importance of student engagement and its relationship to increased learning[7], libraries can provide powerful environments for learning and increased student engagement to take place.

Repurposing libraries is about creating spaces for academic support and shared spaces for interactive learning. In the process, relocating and reducing the size of paper collections through collaborations and digitalization will require robust conversations with faculty about alternative delivery mechanisms for print resources when stacks are removed and collections relocated. The movement from printed scholarly journals to electronic publications will continue, with some disciplines embracing the future while others preferring traditional formats.

Different models of service will evolve as technology introduces new efficiencies. The traditional reference section is already giving way to increased usage of computers for primary research on the Web. The circulation desk, where books are checked out and returned, may be replaced with multiple mobile locations with highly automated services. The student will no longer line up for service at a single location, the service now comes to the student. Communication between and among staff is no longer done in whispers, but electronically.

As national research indicates the importance of student engagement and its relationship to increased learning[7], libraries can provide powerful environments for learning and increased student engagement to take place. In an era of increased calls for accountability and demands that colleges demonstrate they are increasing "learning per square foot," libraries will be expected to be as rigorous as anyone on campus by providing the maximum opportunity for "engagement per square foot" to happen. By providing a place for enhanced student engagement and deeper learning, libraries are helping colleges and universities meet the challenge posed by regional accrediting agencies that want to see more demonstrable learning take place.

Evolving technology and issues of security will cause libraries to rethink all aspects of their operation.

Although libraries have been seen by the general public in the past as oases of quiet and decorum, the new library has its share of security problems. Unsupervised areas, theft of personal property and library materials, unsecured doors, transients and non-student visitors, computer vandalism, food and drink enforcement, poorly defined relationships with campus security—the list goes on. The latest developments in security systems can be expensive and require significant training. Too much emphasis on security can create a negative atmosphere for some library users, creating stress for staff already overburdened with other responsibilities.

Any contemporary library needs a number of approaches to keeping security under control and within budget. They include a thorough security risk assessment, a clear published statement of the purpose and role of library security, ongoing review of operations with a detailed analysis of current systems and action plans for improving them, a thorough training program for library staff, a communication plan for informing staff and users about security issues, written security procedures accessible to all staff including an emergency manual, an effective system for reporting security-related incidents and keeping records of such incidents, and good working relations with security personnel on campus.

The dramatic increase of computers installed in libraries in recent years has meant the added responsibility of maintaining not only the print collection, but also the hardware, software, and networking issues.

Enter technology. While security concerns were once focused on making the print collection secure, a growing issue is security of people and the digital collection. The dramatic increase of computers installed in libraries in recent years has meant the added responsibility of maintaining not only the print collection, but also the hardware, software, and networking issues.

Traditional roles and responsibilities continue to change. Daniel Greenstein, vice provost for academic planning and programs at the University of California System put it this way: "We're already starting to see a move on the part of university libraries… to outsource virtually all the services [they have] developed and maintained over the years. There are national discussions about how and to what extent we can begin to collaborate institutionally to share the cost of storing and managing books. That trend should keep continuing as capital funding is scarce, as space constraints are severe, especially on urban campuses, and, frankly, as funding needs to flow into other aspects of the academic program."[8]

Outsourcing, online research data services, shared access to collections, new generations of computer hardware and software, and the yet-to-be-defined role of electronic readers such as Kindle and the iPad are all part of a brave new world for librarians. With the current generation of students being the first to have completely grown up with technology, they have a different way of processing information, and they may have many valuable recommendations as to how to design the library of the future.

An increase in interdisciplinary learning will demand changes in collection development processes and in services offered, while flexible library spaces can provide non-threatening and non-hierarchal locations to promote interdisciplinary work.

For that matter, given the expanded role and function of the academic library, it would be wise to have all stakeholders at the table when new facilities, renovations, or expansions are on the horizon to ensure that all future users needs are met in the design, equipping, and staffing of the facility. As the traditional model of reading rooms and stacks gives way to areas such as computer commons, social networking areas, places for quiet reflection, presentation spaces, and even cafés, the facility will house multiple areas and services, meaning that students will need clear signage and assistance so they can easily find the areas they need for a specific academic, research, or social activity.

The library of the future is still a work in progress, but throughout its future evolution the library will continue to be catalytic; a place serving as a catalyst for creating, discovering, and curating knowledge.

Libraries will need to respond to the growing interest in interdisciplinary programs by improving communication with participants and becoming flexible in supporting program resource needs.

Libraries have always faced the challenge of creating collections that cut across several subject areas and fields of study. Traditional classification systems do not treat individual disciplines as a single subject, and interdisciplinary studies programs cross multiple subjects and call number areas. New fields of study may encompass multiple subject areas not encountered in the current collection.

To support growing interdisciplinary learning, librarians as generalists can offer expertise in bridging and connecting diverse information points, offer collaborative spaces (both physical and online), and develop and support knowledge bases to connect scholars in new interdisciplinary curricula development. An increase in interdisciplinary learning will demand changes in collection development processes and in services offered, while flexible library spaces can provide non-threatening and non-hierarchal locations to promote interdisciplinary work.

Rigorous undergraduate education will be increasingly characterized by participation of students in original research activities.

More than ever before, the Information Age has given students access to more information that was previously difficult or impossible to find. Taking advantage of this wealth of information, faculty members are increasingly encouraging undergraduates to explore original research in assignments and projects using both the library and the Web.

Growing undergraduate research will lead to an increased need for information literacy, interdisciplinary work, and use of multi-media resources and production. This in turn will require closer collaboration with faculty to determine areas of responsibility and to ensure ongoing communication of student progress.

Increasing involvement of undergraduates in research will require the library to support students in new ways: as creators of knowledge and producers and managers of their scholarly communication portfolio. Increasing undergraduate research creates opportunities for libraries to engage with students on issues of scholarly communication, copyright, intellectual property, e-publishing, and other yet-to-emerge issues. It will also create a new pool of student-developed publications needing archiving/preservation and distribution.

Libraries can play a leadership role in developing programs supporting student-faculty collaborative research, particularly in areas such as the Humanities and Social Sciences. No longer the passive research facility, the library must become an active player in nurturing a new generation of scholars.

As college campuses become more "green," libraries will also have to infuse sustainability into their planning and operation.

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Historically, libraries have always been a key contributor to community learning efforts, and it is appropriate that they take a leadership role in the sustainability movement on campus. This may be difficult at institutions with well-defined and fully built-out facilities, but every time there is a renovation or expansion to the library, sustainable approaches can improve the environmental impact of the building.

Unlike other buildings, libraries have specific needs and unusual challenges in the fight to become greener. For example, libraries need to satisfy the conflicting needs of their patrons and their collections. One function of the university library is to reserve knowledge so it can be studied and absorbed by cohort after cohort of students. While the Internet has become the information medium of choice for many, books still play a very important role in the preservation of knowledge. In order to be preserved, books must be kept away from extreme temperatures, moisture, and sunlight. On the other hand, some students may find sunlight to be the most enjoyable light for reading. Providing more natural light for reading reduces the reliance on artificial lighting. New developments in glass technology in recent years have allowed librarians to have more flexibility as to where they house their collections.[9]

There are many other ways in which libraries can contribute to campus sustainability initiatives. Finding ways to conserve energy, use of waste management techniques, retrofitting HVAC to improve indoor air quality, and use of recycled materials are some ways in which libraries can contribute to institutional efforts.

The Kolligian Library Building at the University of California, Merced campus, is just one example of how libraries can be sustainability showcases. The building, encompassing 180,000 square feet, uses 42 percent less water and 50 percent less energy than comparable buildings. The carpets contain 37 percent recycled content, while its acoustical ceiling tiles contain 66 percent recycled content that includes telephone

books and newspapers. Nearly 30 percent of the materials used to construct the building were manufactured locally, resulting in significant transportation and energy savings. The building's heating, ventilating, air conditioning, and lighting systems have sophisticated controls to monitor and modulate energy use, and also provide a rich source of information for evaluating building performance and potential additional energy use reduction.[10]

Libraries need to update and position their "brand" to fit within the institutional mission.

According to FinAid, a leading financial aid website, tuition tends to increase on average about 8 percent per year. This tuition inflation rate means that the cost of college doubles every nine years. For a baby born today, tuition will triple by the time the child matriculates in college.[11] To attract qualified, motivated students, colleges and universities must find ways to attract the best and brightest. In this regard, they are no different than corporations who seek to attract the most talented workers.

The brand image of an institution is created by and reflects many institutional dynamics. Just as business leaders have increasingly focused on branding as the marketing means to shape identity and appeal for their product, colleges and universities need to understand the needs, expectations, and perceptions of their stakeholders and constituents—students, faculty, alumni, employers, and government among others—and align their brands accordingly. Many aspects of the educational experience have direct branding implications: student recruiting and admissions, alumni giving, community relations, faculty engagement, staff culture, quality of academics, and the entire student experience.

The single best predictor of student satisfaction with a college is the degree to which students perceive the college environment to be supportive of their academic and social needs.

And what are students looking for as they shop for a college or university? The National Survey of Student Engagement (NSSE) is an annual assessment of information on student participation in programs offered by colleges and universities. Since the inception of the survey, more than 844,000 students at 972 four-year colleges and universities across the country have reported their college activities and experiences to the NSSE, making the program a voice to be heard on topics like the improvement of undergraduate education, enhancing student success, and promoting collegiate quality.[12] Among its most recent findings: the single best predictor of student satisfaction with a college is the degree to which students perceive the college environment to be supportive of their academic and social needs.

With college environment placing so high in student expectations, institutional leaders should consider this finding and exploit its potential by investing in library facilities, not just as places for quiet reading, but as dynamic learning spaces. The library's iconic and symbolic status as an emblem of learning offers strong support for the brand identity of colleges and universities. This fact can be leveraged to encourage the continuous enhancement and refinement of library facilities, collections, and services to support the learning missions.

Academic libraries will repurpose traditional, under-used spaces in libraries into learning community spaces.

As libraries have always been a core component of the collegiate experience, their facilities have a tendency to be older buildings on campus. With the rapid expansion of knowledge and information in recent decades, they also tend to be storing more volumes than originally intended. For many years, major libraries have been developing off-site, high-density warehouses where books and other materials can be stored efficiently but delivered quickly to readers who need them. The traditional stacks have given way to more open, collaborative spaces, where interaction as well as reading takes place.

Richard E. Luce, director of university libraries at Emory University, notes the evolution of the traditional library from the original function where materials were collected and stored through more experience-centered places with conversation areas and even coffee shops. Luce notes: "Now we're really seeing the library as a place to connect, collaborate, learn, and really synthesize all of those roles together.[13]

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As libraries shift their centers of gravity from storage and physical collections in central spaces, they must establish settings for a mix of social and academic activity that encourage and support "high energy" learning by providing spaces for communities of learning to happen. Repurposing spaces to support partnerships with faculty, academic support services, and research centers will ultimately provide exciting and dynamic places.

Looking to the future

Once a place for quiet reflection and research, today's academic library must adapt to a world of instant gratification, e-commerce, and competition for resources. The role of librarian has grown to meet contemporary expectations; no longer a custodian of the collection and guardian of a peaceful environment, today's professional librarian is a knowledge navigator, presiding over a complex, dynamic facility, often open round the clock and supporting a multitude of learning styles. Rows of books, manuscripts, magazines, and papers indexed by card catalog and housed in a dimly lit room have been replaced by audio recordings, videotapes, CD-ROMs, databases, computer terminals, and networks linking remote resources via the Internet.

These and other challenges present an opportunity for the academic library to reinvent itself for the future, to become a catalyst—housing the creation, discovery, and curation of knowledge for current and future generations of students and scholars.

Notes

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