SUPPORTING THE LIFECYCLE OF KNOWLEDGE

Strategic Priorities for the University Libraries

Knowledge resources—books, journals, media, data—are fundamental elements of research, teaching, and learning. These raw materials fuel discovery and stimulate the creative enterprise, generating new knowledge.

The University Libraries play a critical role in supporting the cycle of knowledge discovery, use, creation, and dissemination through the stewardship of the *products* of research (collections) and, increasingly, through the active engagement in the *processes* of learning and research.

The vision statement of the University Libraries reflects dual roles: *The University Libraries are a strategic asset for the University, providing intellectual leadership and extraordinary information experiences toward the advancement of knowledge*. Simply stated, the Libraries are a service agency connecting faculty and students with the resources they need to be effective teachers, researchers, and learners; and the Libraries are an academic agency, providing intellectual leadership on important issues affecting universities and scholarship, such as information literacy, publishing economics and policies, knowledge organization and access, and copyright.

The collections and content that fuel new knowledge are increasingly embedded in a complex network of systems from publishers and other content providers. In this digital context, the Libraries are challenged to help users make sense of a richly interconnected universe of online content through integrative technologies, instructional programs, and tools to enhance individual productivity. There is also opportunity to leverage Libraries' infrastructure and expertise in managing, preserving, and making accessible campus digital assets, ranging from faculty papers and departmental image collections to the digital data of individual researchers and scholars. The Libraries' role in knowledge resources has expanded over time to provide support beyond what might traditionally have been viewed as Libraries' collections.

As the behaviors and expectations of users have shifted, so has the financial landscape, decreasing the Libraries' capacity to meet these rapidly changing demands. To effectively align the organization's available resources with expanding roles, the Libraries undertook a planning process that incorporated ongoing service assessments—including focused analyses of web services, faculty publishing interests, information literacy needs, and data management—while seeking input through the strong network that discipline liaison librarians have across campus.

As a foundational component of planning, the Libraries identified strategic themes and invited internationally recognized experts to consult in these areas and to engage the organization broadly through open presentations, focused discussions with staff working groups, and meetings with relevant University leadership (see sidebar for list of consultants). Supplementary input was received via campus governance groups, collegiate meetings, and more focused formal assessments.

PLANNING THEMES AND CONSULTANTS

Content and Collections
James Neal, Vice President for Information Services and University Librarian, Columbia University

Information Discovery and Delivery
Lorcan Dempsey, Vice President for Research, OCLC (non-profit provider of library systems and services)

Scholarly Communication and Publishing
Paul Courant, Dean of University Libraries, Arthur F. Thurnau Professor, Harold T. Shapiro Collegiate Professor of Public Policy, Professor of Economics, and Professor of Information, University of Michigan

E-Scholarship
Clifford Lynch, Executive Director of the Coalition for Networked Information and adjunct professor, University of California-Berkeley School of Information

E-Education and Learning Support
Curtis Bonk, Professor of Instructional Systems Technology, Indiana University (event sponsored by the School of Public Health)

Significant trends and forces frame Libraries' planning:

• Over the past six years, the University provided an increase of nearly $4.5 million recurring funds to support collections. Nevertheless, publishing output continues to grow and **inflation of costs remains consistently high (~7 to 9% annually)**. The Libraries currently rank 14th among the 114 North American university libraries of the Association of Research Libraries in collection expenditures.

• While the cost of developing collections continues to inflate far beyond the Consumer Price Index and Higher Education Price Index, the cost per use of these resources has dropped, since the **digital versions have far greater use than comparable print collections**. The Libraries have invested significantly in digital content, licensing older volumes of journals and primary source material, with resulting increased adoption and use.

• Despite the rapid expansion of digital publication, **physical (analog) collections continue to grow**, enhanced with notable gifts of archives and rare materials. Physical collections are **also showing significant deterioration** in the absence of a formal program of preservation and conservation. Shelving and storage space are at maximum capacity, limiting options for growth and optimal storage conditions.

• **Momentum is growing for changes to publishing practices and models for managing copyright**, with a significant increased demand for consultation services and educational programs around author rights, publisher policies, copyright, and impact measures. Concurrently, federal funding policies and legislative agendas associated with open access to research—both publications and associated data—are becoming a more significant force in shaping access to knowledge resources.

Journal Price Increases from 2009 to 2010

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170%	*Polymer Journal* (Nature Publ. Group starting 2010)
29%	*Nature Genetics* (Nature Publ. Group)
24%	*The Linguistic Review* (De Gruyter)
19%	*Perspectives on Political Science* (Taylor & Francis)
9%	*J. of Comparative Neurology* (Wiley)
1%	Higher Education Price Index
.9%	Consumer Price Index

Journal price increases consistently outpace all inflation indexes, and often spike dramatically when titles are bought by new publishers: the annual price of *Polymer Journal* rose from $660 to $1,666 when it moved to the Nature Publishing Group.
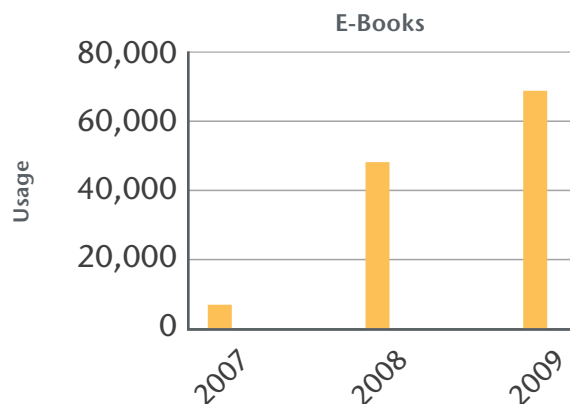
E-Books

A dramatic rise in e-book use accompanies the growth in availability: 8,720 Springer titles were used 6,633 times in 2007 while 15,410 titles were used 67,107 times last year.
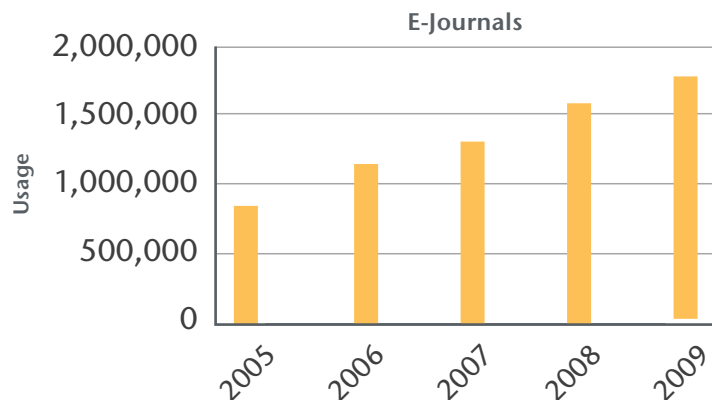
E-Journals

Usage statistics for the approximately 3,600 e-journals provided by the top three major publishers (Elsevier, Springer, and Wiley) rose from 904,440 requests to 1,680,800 over five years.
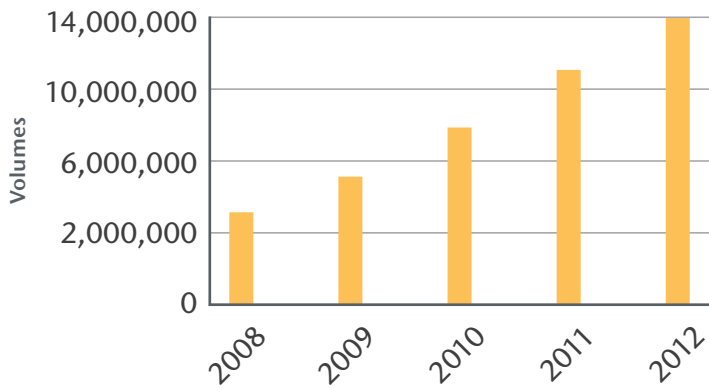
The HathiTrust Digital Library has grown rapidly since its 2008 launch by the Committee on Institutional Cooperation, and is expected to reach 14,000,000 volumes by 2012.
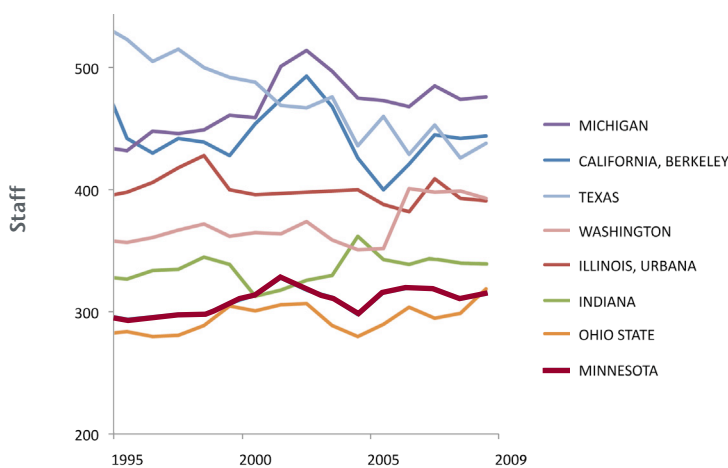
The Libraries' staff numbers far fewer than peer research libraries.
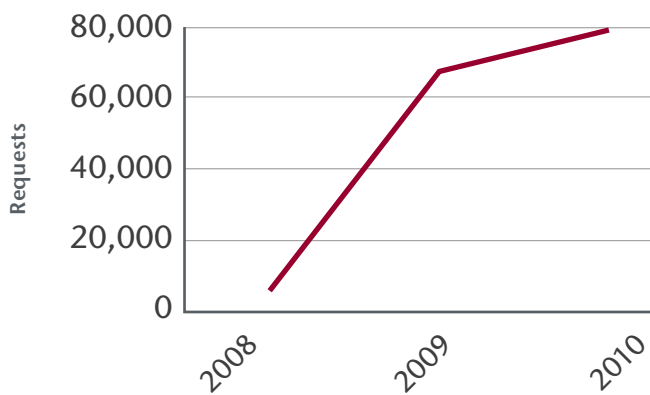
Use of the *GetIt* book delivery service has skyrocketed since its March 2008 launch.

- **Collaborative programs are critical** components of preservation and management of collections but require infrastructure investment. One example is the Libraries' participation in the Committee on Institutional Cooperation (CIC) Google Books partnership, which will digitize over 15 million volumes from across the CIC. Users will find these digital copies in Google Books as well as the HathiTrust, another successful collaboration launched by the CIC and the University of California system to ensure enduring access to the digital files from Google and other partner institution digitization projects.

- **The University of Minnesota Libraries staff is one of the leanest of public university libraries** within the Association of Research Libraries, sustaining budget reductions of $1.8 million since FY2010. While the collection budget was protected from reductions as a policy decision, the staff and operating budgets were decreased by 6.8%. Data from comparably sized institutions suggest the Libraries are as much as 100 FTE smaller than major peer libraries.

- **Campus demand for library services is rising in many areas**. The larger campus libraries are seeing annual growth in visitors, use of the *GetIt* book delivery service has skyrocketed, and demand for instructional programs and online help and tutorials is rising. Yet some services such as book circulation, article delivery, and copy services are declining.

- The **diversity of publisher and campus systems** requires Libraries' investment to ensure the various systems work with one another while also providing the integrated and highly functional experience users expect. Further, the **varying needs of novice and expert researchers and differences among disciplines** make customized applications critical to serving these distinct communities.

- The **increasing demand for support from virtual users**—whether on campus or from distant locations—prompts the expansion of online services and support tools for e-education programs. While digital content and tools can enhance online learning, they come with complex issues of rights management, system security, and access systems.

Supporting the Lifecycle of Knowledge

Digital content abounds, new forms of information access are emerging, and new tools for communication and exchange are multiplying rapidly, changing how faculty and students discover and manage their research resources, create new knowledge, and share their work.

The Libraries support students and scholars throughout the overlapping and iterative phases of the knowledge lifecycle.

Discovery   **Use**

Dissemination   **Creation**
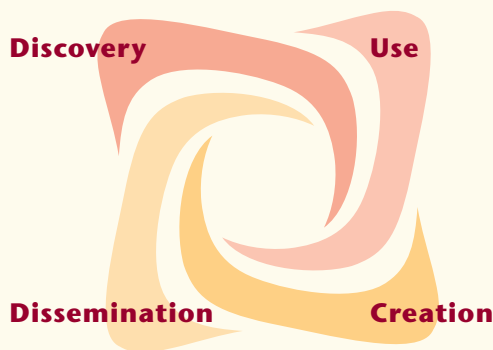
- **Discovery**: finding relevant publications, media, and data, keeping current in one's discipline

- **Use**: acquiring, organizing, and exploiting content and data

- **Creation**: producing new intellectual goods, analyzing, writing, and reviewing

- **Dissemination**: teaching, discourse within disciplinary communities, collaboration, and publishing

STRATEGIC THEMES

The Libraries' planning process identified the following areas of strategic importance for priority attention.

❶ Content & Collections: *Stewardship in a Global Context*

The rapid evolution of digital publishing, coupled with trusted mechanisms for accessing and preserving digital content (e.g., the HathiTrust), offer significant opportunity to explore new and collaborative approaches to collection development and management. In the context of continued inflation and constrained budgets, the Libraries are challenged to refine collecting strategies, while providing cost-effective stewardship for legacy collections.

Goal

The Libraries will provide for contemporary and future research by developing collections that support campus programs and by collaborating with other institutions to manage, preserve, and share distinctive resources for a global community of scholars.

Strategies

- Refine collecting profiles to align with contemporary campus priorities and available funding. Develop, preserve, and provide enhanced access to collections of distinction.

- Leverage the Committee on Institutional Cooperation's (CIC) cooperative licensing capacity to pursue deep discounts through consortium-wide contracts with major publishers.

- Increase Libraries' capacity to preserve and manage print and digital collections to ensure enduring access by developing a program of preservation and conservation and collaborating with cultural organizations in the development of infrastructure to preserve digital collections.

- Pursue opportunities to collaborate with academic and commercial partners, including shared print storage and digital initiatives within the CIC.

- Contribute to the development of the HathiTrust digital preservation program.

❷ Access: *Enabling Robust Information Discovery and Delivery*

The Libraries' classic methods of providing information access through local catalogs and systems have undergone fundamental changes in the context of new models of distributing and accessing content. At the same time, the changing expectations for delivery among students and faculty have been profoundly influenced by prominent players such as Google, Amazon, and WorldCat. This has led the Libraries to recalibrate its critical and useful role in scholarly inquiry in the context of global information networks.

Goal

The Libraries will enhance online information discovery and delivery by providing services that are portable and personalized, open to the world's information network, and integrated into the teaching, learning, and research environments of our users.

Strategies

- Systematically integrate University of Minnesota Libraries' content and collections into global network discovery services, while "opening the door" of our local systems to the world's information network.

- Implement identity management strategies that enable users to navigate seamlessly between campus and external services.

- Enhance information discovery systems so they can be tailored to support discipline-specific research methodologies.

- Streamline the path between the *search* for information (electronic and print) and its *delivery*.

- Provide low-barrier connections between content systems and tools that support personal information management and analysis.

❸ Research and Scholarship: *Enhancing Individual Productivity and Community Discourse*

Methods of scholarship have changed in the context of greater interdisciplinarity, collaboration beyond institutional borders, and exploitation of technology. The Libraries are challenged to support emergent methodologies, working collaboratively with campus and institutional partners. With the rise of new models for creating, sharing, and managing scholarly materials comes increasing demand for support of both the *processes* and *products* of scholarship. The Libraries support the evolution of these processes and play a lead role in educating the campus about issues of copyright and publishing policy.

Goal

The Libraries will play an instrumental role in sparking discovery, creativity, and innovation by advancing research and scholarship processes that allow for the unfettered flow of knowledge creation and sharing.

Strategies

- Extend research consultation services to help researchers manage, preserve, and share publications and research assets and data.

- Leverage Libraries' existing technology, expertise, and partnerships to develop digital content management and publishing solutions.

- Advocate for author publishing choices that align with academic values by expanding educational programs on copyright, authors' rights, and scholarly publishing.

- Assist individuals and academic units in assessing impact and visibility of research and scholarship.

- Leverage successful programs like the UMN-developed *AgEcon Search* and *EthicShare* to advance models of discipline-focused repositories and online communities and services within the academy.

4 Teaching and Learning: *Strengthening Campus Capacity and Enriching Student Experience*

Libraries' collections and campus-wide licenses for digital content provide critical course resources. The Libraries' longstanding programs to build information literacy skills are expanding through partnerships with faculty in curriculum redesign in support of the University's competency-based learning outcomes. Integrating content, learning tools, and course-specific resources within a mature campus learning infrastructure will support and enhance place-based and online learning.

Goal

The Libraries will support education through increased integration of critical content and tools in the curriculum and through programmatic investments in physical and virtual learning environments.

Strategies

- Partner with campus units to understand faculty workflow and needs in the development of courses.

- Assist faculty with incorporating evidence-based learning, essential inquiry, and problem-solving skills into the curriculum.

- Integrate Libraries' content and staff expertise in course management systems such as Moodle, with attention to embedded mechanisms to develop student information literacy.

- Expand cost-effective online strategies to support courses through online tutorials and system-generated Library Course Web Pages.

- Leverage Libraries' physical spaces for campus collaborations and learning support such as the SMART Learning Commons and Institute for Health Informatics.

- Collaborate with collegiate units to share Libraries' resources beyond campus (e.g., History Day and College in the Schools) and leverage Minitex programs to support the information needs of Minnesotans.

5 Organization: *Developing Agility and Advancing Efficiencies*

As the Libraries' roles expand through more active engagement with academic programs and development of infrastructure, the capacities required within the organization shift as well. These trends also require new types of expertise, strategies that are inherently collaborative (within the University and within the academy), and organizational agility to reconfigure resources to respond to changing demands and a changing economic context.

Goal

Invest in staff and organizational capacity for innovation, collaboration, risk taking, and assessment to meet emerging priorities and demands.

Strategies

- Strengthen the Libraries' assessment expertise to support ongoing evaluation of services and functions and to further workflow efficiencies.

- Develop capacities and systems for data capture and evidence-based decision making.

- Focus staff development investments to support achievement of strategic initiatives, leveraging expertise in the Libraries and on campus.

- Prepare managers to develop and realign staff expertise for new initiatives, reassignments, and working across organizational boundaries.

Drivers of Change

The Libraries touch upon the academic life of the entire institution. New program interests, changes in emphases, and emergence of new research methodologies all have a direct impact on the Libraries. While there is increasing pressure for all cost pools to decrease costs, arguably few others have the challenge of responding to the comprehensiveness and diversity of program needs.

Many of the challenges the Libraries face are outside of direct control and prompt strategies to leverage partnerships and allied interests.

The Libraries are faced with a perfect storm of significant challenges:

• Collections are mission-critical, and well integrated into the foundational fabric of scholarship and research—no less important than essential laboratory or computational infrastructure.

• Lean and decreasing staff resources prompt difficult choices associated with sustaining basic access to facilities and collections, while addressing the growing appetite to support the processes of using, creating, and sharing knowledge resources.

• The inflationary costs and models of publication are impervious to change.

• At-capacity storage space seriously limits the Libraries' ability to reduce facility costs and address fundamental needs in preserving and managing physical collections.

Collaborative Strategies

Collaboration will be a significant strategy for effective stewardship of library resources and enhancement of services. There is opportunity to better use available collection space if institutions can work together and develop services for shared storage. There is opportunity for tackling the daunting problem of preserving deteriorating print and at-risk digital collections, if institutions can pool resources in the development of infrastructure, such as the HathiTrust. There is opportunity in realizing savings or more flexible terms in digital content licenses if consortia can use their economic clout in negotiations. There is opportunity in mobilizing faculty to embrace more open publishing practices, if consortial organizations such as

CIC can develop shared programs and infrastructure. In each of these areas, there is opportunity, but the savings may be realized only in the long term or through future avoidance of new costs.

Critical Choices

The Libraries and the campus will face critical choices in setting directions and making investments. Given the diversity of program interests and discipline priorities, choices will invariably have a differential impact. Options to live within limited storage space and to preserve deteriorating collections will likely move some print resources to distant or shared storage facilities. Reduced staffing will limit building hours and the capacity for liaison librarians to respond to discipline needs for instruction, curriculum design, and more specialized collection building. Managing acquisitions in the context of flat or diminished funding will require reduction of purchases and cancellation of subscriptions and licenses in all areas, with potential disproportionate impacts given the sizable differences in costs between disciplines. The recent surge in e-books, and the potential for savings with "e-only" purchases, could handicap students and faculty without ready access to devices to exploit those resources. This is but a sampling of potential effects.

Positioning for Change

Seismic changes in publishing, technology and network development, diverse discipline interests, and the governance demands of collaboration are transformational challenges for an organization with centuries-old traditions of building and organizing collections. Clearly the traditions have changed. The University of Minnesota Libraries have a record of positioning for change, a record recognized in 2009 by the Association of College and Research Libraries Excellence in Academic Libraries award. The transformations that will be required for the years ahead will rival any heretofore experienced, demanding organizational agility and critical campus engagement.