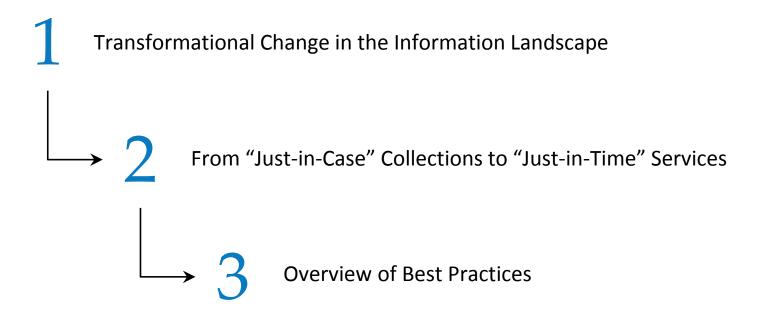


Redefining the Academic Library

Managing the Migration to Digital Information Services

Road Map for Discussion



Writing Our Own Obituary

Library Professionals Themselves See Abrupt End to Traditional Models



"A community of Associate
University Librarians and Associate
Library Deans challenging the
traditional boundaries in libraries"

By 2015...

Patrons Go Elsewhere for Information

"Our users will meet more than 90% of their information needs from sources that are not directly connected to the library."

No Need for Traditional Librarians

"Successful libraries will be those that have managed to turn over the majority of their staff or reassigned staff to different roles within the library."

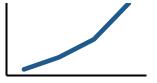
A Space for More Than Just Books

"Most library space will be taken over by functions that have nothing to do with library collections or services."

This Time It's Different

Transformation of the Academic Library Likely to Happen on Your Watch

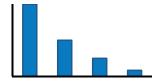
The Four Horsemen of the Library Apocalypse



Unsustainable Costs



Viable Alternatives



Declining Usage



New Patron Demands

Too Rich Even for the Deepest Pockets

Even Top Institutions Pushing Back on "Best Library at Any Cost" Model



16.3 M Physical volumes

100 K+ Serial titles

1,200 Full-time library employees

\$159 M Annual operating expenditures





Limits of the Ownership Model

"Given these potent trends, the Harvard libraries can no longer harbor delusions of being a completely comprehensive collection, but instead must develop their holdings more strategically. To do so, Harvard will need to embrace a model that ensures access to—not necessarily ownership of—scholarly materials needed by faculty, students, and other library users, now and in the future."

Library Task Force Report Harvard University, 2009

Size Doesn't Matter

Librarians Struggling to Define Appropriate Performance Metrics

Traditional Metrics Measure Inputs and Size

- Number of volumes held
- Number of current serial titles.
- Total expenditures
- Gate count
- Reference requests
- Presentations

A New Proving Ground

"Community college, college, and university librarians no longer can rely on their stakeholders' belief in their importance. Rather, they must demonstrate their value."

Megan Oakleaf "Value of Academic Libraries"

Evolving Metrics Aligned With Value, but Hard to Quantify

- Impact on student enrollment, retention and graduation rates
- Impact on student learning
- Contribution to faculty research productivity
- Impact on faculty grant proposals and funding
- Support of faculty teaching

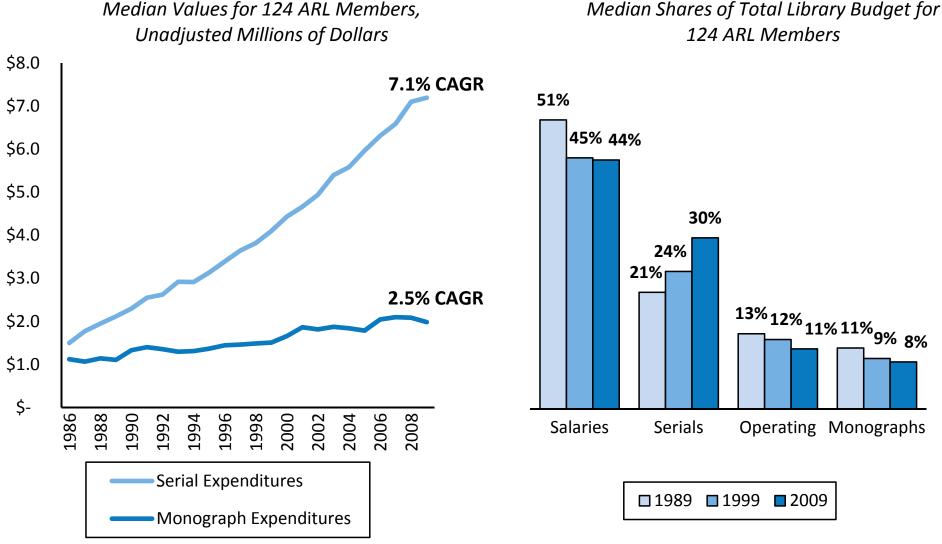
Accreditors Can Pull in Both Directions

- Some libraries pressured to answer to new, "value-centric" standards
- Others limited by collection and staff size requirements
- Rapidly changing; depends on agency and individual teams

Journal Costs Crowding Out Books

Serials Costs Rising Faster Than Library Budgets

Expenditures in ARL Libraries



Are Rising Journal Costs Justified?

Librarians and Publishers Increasingly at Odds



Librarians Bemoan Predatory Pricing

- Prices outpacing inflation
- Bundled deals limit ability to cancel titles
- Risk losing access to back catalog
- Publisher owns copyright
- Costs would be lower in a non-profit model
- "Our faculty did the research, why should we have to pay so much to access their work?"



Prescription:
Support open access journals



Publishers Point to Explosion in Scholarly Output

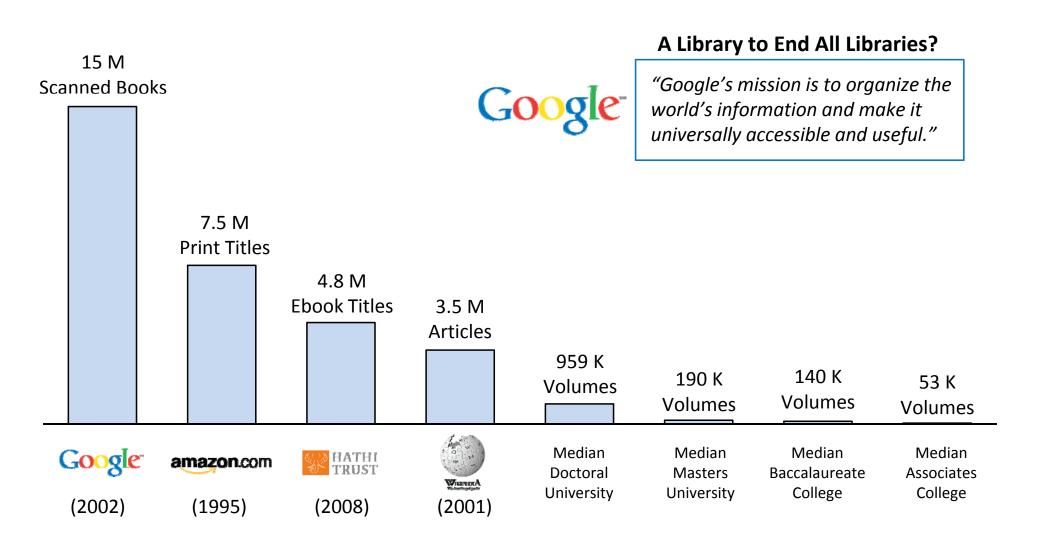
- Research output has increased significantly
- Cost per download has actually gone down
- Bundles give institutions wider access at a discount
- Transition to e-journals required massive investment in new infrastructure
- "We are willing to try open access models as long as we can continue to cover our costs."



Prescription: Find new sources of funding

Scale Beyond Imagining

Fastest Growth, Broadest Access Now Outside of Academic Libraries



The Thousand Year Plan

Why Academic Libraries Will Never Beat Google



Estimated time to scan all of their 7 M volumes

1,000 years



Actual time for Google to scan 7 M volumes

6 years

A Devil's Bargain?

"The prospect of mounting a book-digitization project at the scale of Google's never seemed within the capabilities of research libraries until an outside partner with seemingly limitless resources emerged. But this outside partner has often seemed more focused on its commercial interests than on meeting scholarly needs."

Roger Schonfeld ITHAKA S+R

With Us or Without Us

Many Predict Libraries Will Be the Next Media Outlet to Be Disintermediated

Local Physical Distribution Models Displaced by Remote and Fully Digital Approaches Local Distribution BORDERS Models 1990s Global Digital **i** Tunes NETFLIX amazon.com Models 2000s Cloud Based **Convergent Media Services** Models (music, video, books) 2010s

Even Librarians Concede

"The new consumer utopia of instantly available digital books is leaving the library behind as a relic of a bygone age when users were not self-sufficient and when the information or book a user wanted was not simply a click away."

Dennis Dillon, Associate Director for Research Services University of Texas at Austin Libraries

Patrons Switching Faster Than Libraries

Faculty and Students Already Looking Elsewhere for Search Help

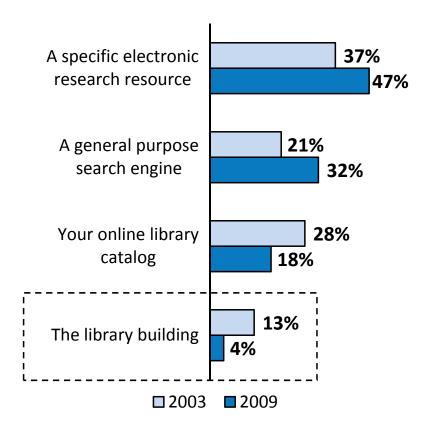
Where Do Students Start a Search?

$$n = 2,229$$

Search Engine Wikipedia 7% Social Networking Site 2% E-mail 1% E-mail Subscription 1% Online Database 1% Ask an Expert Site 0% Library Website 0%

Where Do Faculty Start Their Research?

$$n = 3,025$$

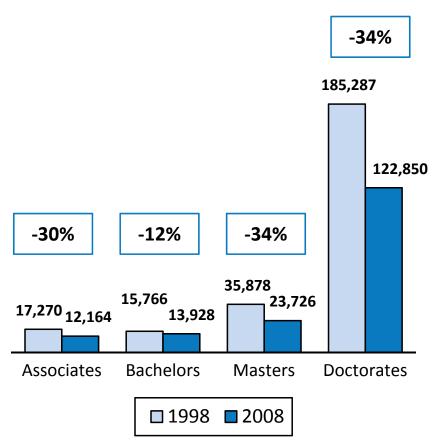


The Lonely Reference Librarian

Circulation and Reference Requests Down Across All Institutional Types

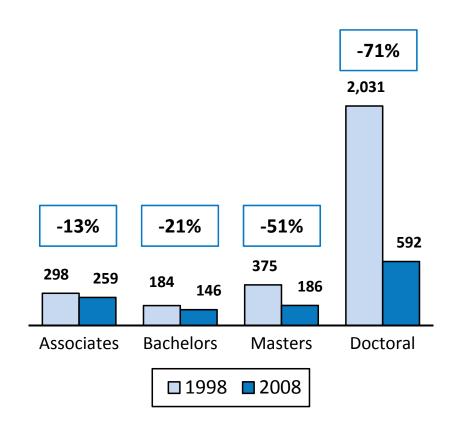
Declining Circulation

Average General Collection Circulation



Declining Reference Requests

Average Weekly Reference Requests

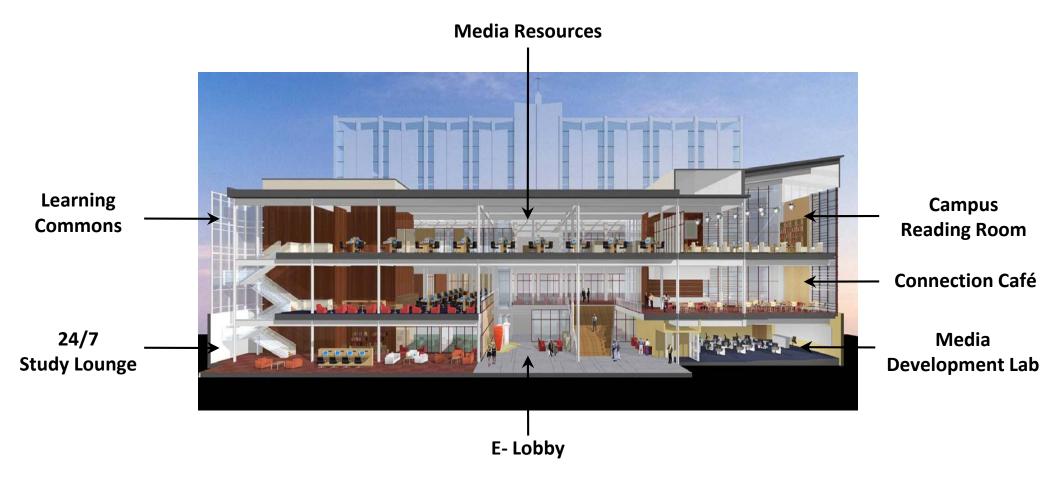


The Library as a Social Learning Space

New Libraries Support a Range of Academic Activities



Lemieux Library & McGoldrick Learning Commons, Seattle University



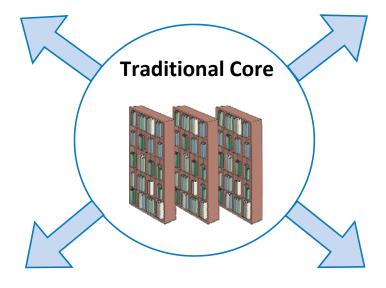
Opportunity and Uncertainty Ahead

Should Libraries Do All of These Things?



Onsite Services

- Teaching and Learning
- Collaborative Study
- 24/7 Access
- Tutoring
- Café





Web Services

- Databases
- Search
- Chat reference
- Mobile Access



Instructional Support

- Multimedia Production Support
- Instructional Design
- Information Literacy

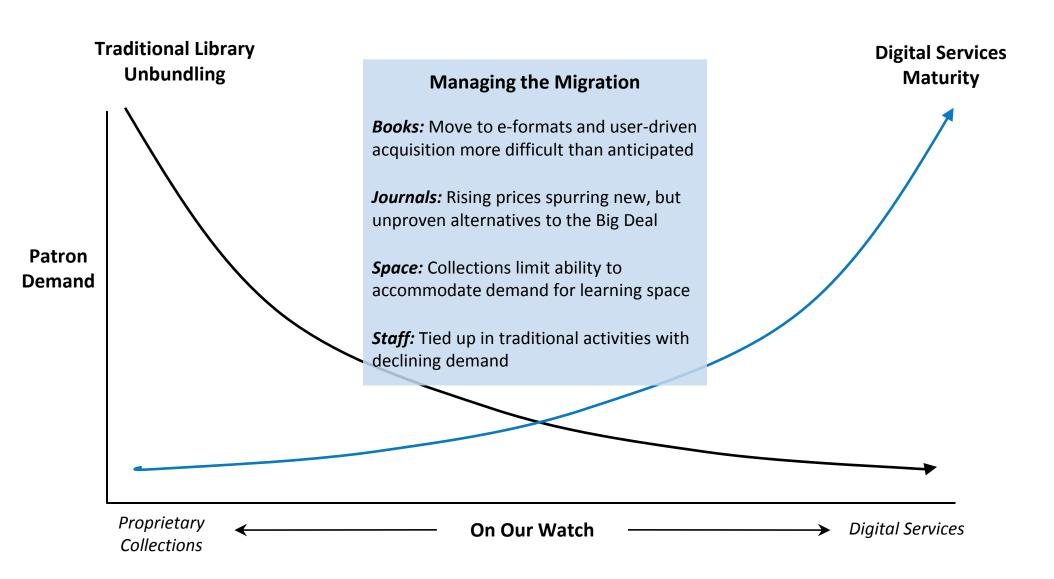


Research Support

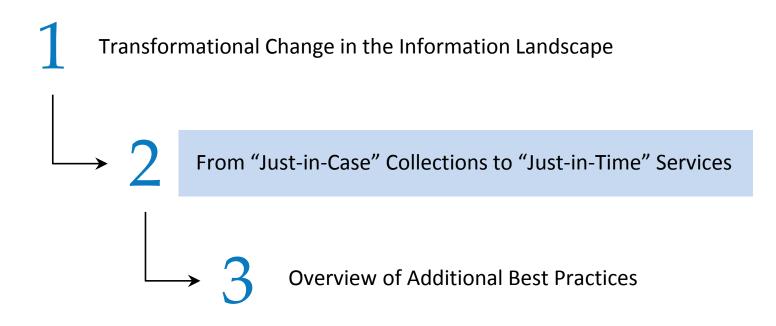
- Copyright Advising
- Publication Support
- Data Curation

Straddling Two Eras

Traditional Library Unsustainable, but Digital Services Still Unready for Prime Time



Road Map for Discussion



From Ownership to Access

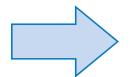
Reducing Collections While Expanding Access to Books

Current State

- Large collections of physical books in open stacks with low circulation
- Duplicate book holdings at the institutional, system, consortial and regional level
- Books purchased prospectively "just in case" a patron might need them in the future



Books



Preferred End-State

- Ebook catalogs larger than previous physical collection
- Physical books preserved (and accessible) through collections shared across consortia and stored offsite
- Ebooks purchased only when patrons use them (patron-driven acquisition)

Barriers to Change

- Copyright prevents access to orphan works and scanned material
- Ebook versions of academic monographs not yet universally available
- Ebook procurement more complicated than traditional purchasing
- Current DRM restrictions limit how patrons can use ebooks

The Ebook Tipping Point

With Commercial Take Off, Can Academic Ebooks Be Far Behind?

Ebooks Sales on Amazon

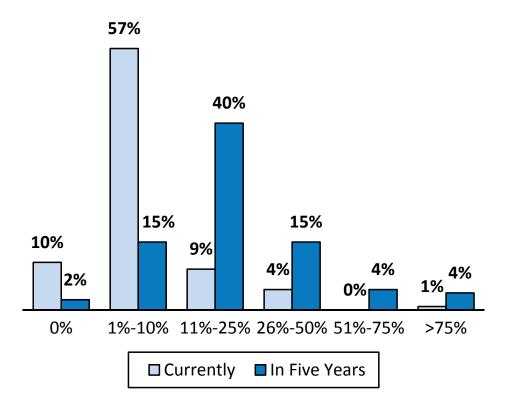
amazon.com

Nov 2007
Kindle eReader launched

Kindle eReader all print books

Ebooks as a Percentage of Academic Library Acquisition Budget

Survey of 136 Colleges and Universities



The Promise of the Cloud

Leveraging Ebooks and Shared Repositories to Reduce Local Holdings



HathiTrust Offers Collaborative Digital Library for the Academy

- Began in 2008 as collaboration of CIC, the University of California system, and the University of Virginia to establish a repository to archive and share digitized collections
- Now involves 52 partner libraries
- Includes both in-copyright and public domain materials digitized by Google, the Internet Archive, Microsoft, and in-house initiatives
- Bibliographic and full-text search are available for all volumes
- Public domain volumes are freely accessible to the public and can be downloaded in their entirety with authentication by persons affiliated with partner institutions

Scaled, Digital Collections Will Free Up Significant Local Resources

- Nearly 1/3rd of content purchased by research libraries in the US has already been digitized and is preserved in HathiTrust
- More than 60% of retrospective print collections held in ARL libraries will be duplicated in HathiTrust by June 2014
- Median space savings that could be achieved at an ARL library is more than 45,000 assignable square feet (ASF).
- Total annual cost avoidance that could be achieved is between \$500,000 and \$2 M per ARL library

From Assets to Liabilities

"Unless this transition is proactively managed by library directors and supported by the academic institutions they serve, there is a strong probability (not to say certainty) that the legacy print collections we have long cultivated as institutional assets will eventually be regarded local liabilities."

Constance Malpas "Cloud-sourcing Research Collections"

A Matter of Time

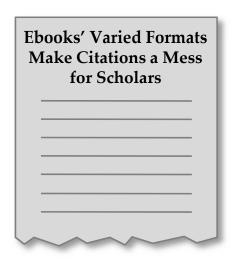
Resistance to Ebooks Persists, But Likely to Fade as Technology Improves



"The narrow path still leads, as it must, to crowded public rooms where the sunlight gleams on varnished tables, and knowledge is embodied in millions of dusty, crumbling, smelly, irreplaceable documents and books."

Anthony Grafton Professor of History, Princeton University

Technology Won't Be the Limiting Factor





Source: Anthony Grafton, "Future Reading," *The New Yorker*, Nov 5, 2007; Tushar Rae, "E-Books' Varied Formats Make Citations a Mess for Scholars," *The Chronicle of Higher Education*, Feb 6, 2011; Education Advisory Board interviews and analysis.

Ebooks Are Easy, Right?

Usage Restrictions from a Major Ebook Publisher

- Cannot download file more than 6 times
- Cannot move file to a different computer
- Cannot lend, sell, or give ebook to others
- Cannot copy the ebook
- Cannot copy or paste entire pages at a time
- Cannot copy or paste diagrams, figures, or artwork
- Cannot annotate text

Copyright Law Biggest Obstacle to Widespread Access

Google Books Legal Setback Temporarily Derails Prospects for Massive Digital Text Distribution

Original Settlement

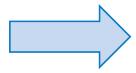
November 2008

- Google paid authors, lawyers, and publishers \$90 M for rights infringements
- Google continues to digitize books on an "opt-out" basis
- Orphan works included, with \$35 M fund for "Book Rights Registry" to compensate claimants



March 2011

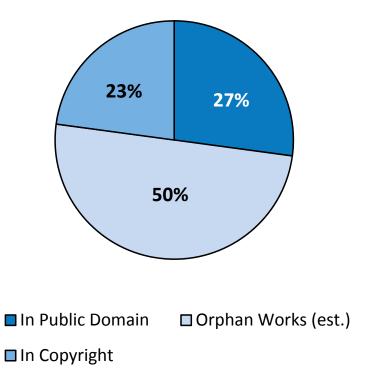
- Court ruled that Google holds unfair monopoly over digitized works
- "Opt out" system contradicts purpose of copyright
- Back to the drawing board... and an opening for HathiTrust and others



Locked Up

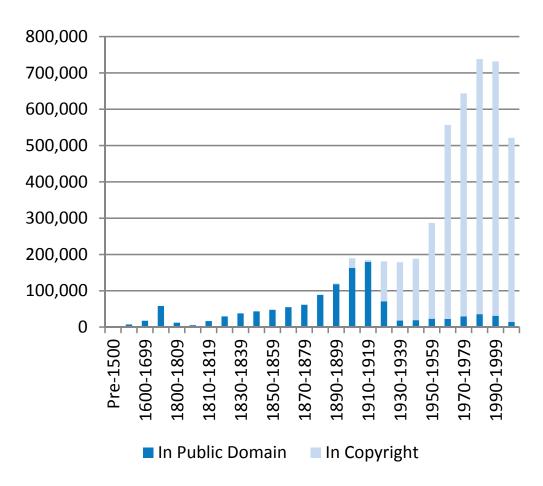
Vast Majority of Content Inaccessible Due to Copyright Restrictions

Copyright Status of Volumes Held by HathiTrust



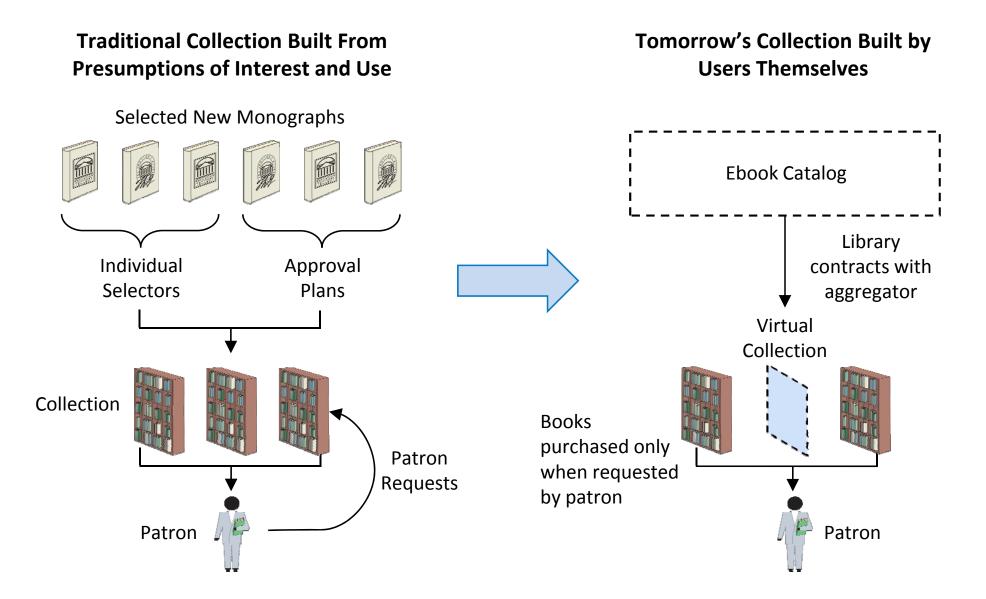
Orphan Work: In copyright, out of print, and copyright holder unknown

Status of Volumes Held by HathiTrust by Year of Publication



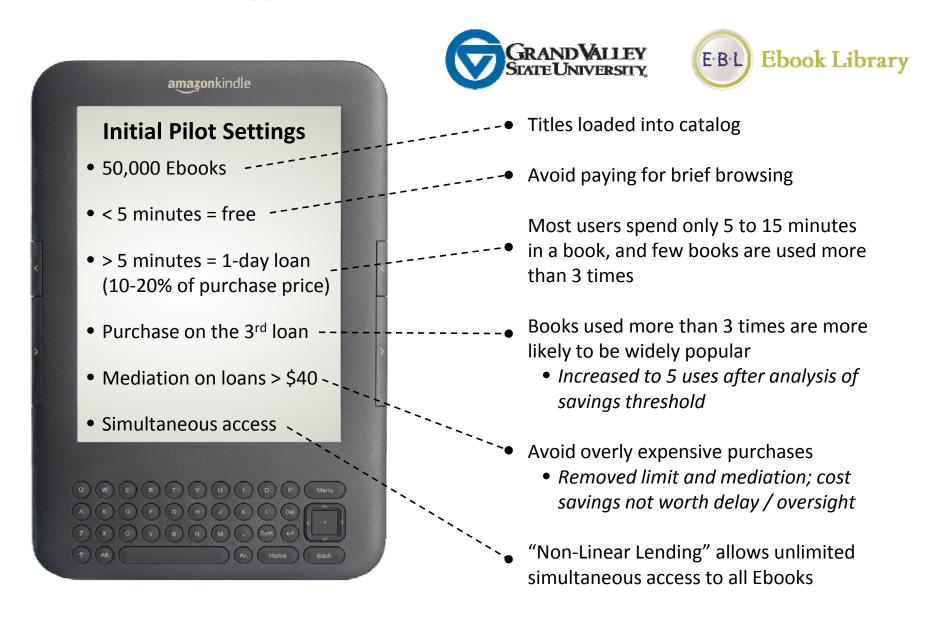
From "Just-in-Case" to "Just-in-Time"

Patron-Driven Acquisition Offers an Alternative to Guesswork



Refining the Purchasing Algorithm

Triggers, Limits, and Mediation Standards



Are Skeptics Right to Worry?

Lessons Learned from PDA Early Adopters

Concern:

"We'll spend too much, too quickly"

(The \$1,000 book problem)

Assessment:

Library retains control over purchasing strategy

- Budget caps
- Catalog listings (filtered by year, publisher, discipline, duplicates)
- Rent/buy triggers
- Usage definitions
- Price limits
- Librarian approvals/mediation

Concern:

"We'll buy lots of titles we don't really want"

(The Banana Book Problem)

Assessment:

Rent/buy triggers prevent overzealous acquisition

End-users better judges of needs and value

- "Unused books are bad books"
- Each PDA purchase has demonstrated demand
- User-built collection wellrounded and diverse, but unpredictable

Concern:

"We'll have a shallow, narrow collection" (The Barnes & Noble Problem)

Assessment:

Virtual ebook catalogs actually expand and revitalize the collection

- Discoverability no longer guided by physical ownership, proximity, or placement
- Catalog no longer subject to one-time selector decisions
- University press ebook sales rescuing the "backlist"
 - 90% at UNC-Chapel Hill Press
 - 87% at U of Kentucky Press
 - 70% at Johns Hopkins Press

Moving Beyond the "Big Deal"

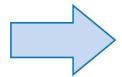
Creating a Broader Range of Options for Scholarly Communication

Current State

- Researchers transfer copyright to journal publishers
- Disciplinary societies contract with publishers for journal production
- Publishers sell access to libraries in bundles of journal titles
- Gaps in subscriptions filled by inefficient and expensive interlibrary loan programs



Journals



Preferred End-State

- Authors retain certain aspects of copyright and deposit copies of articles in open access repositories
- Subscription model coexists with ondemand services and open access models
- Researchers have outlets for making data accessible, sharing pre-prints, and publishing non-article forms of scholarship

Barriers to Change

- Faculty tenure and promotion guidelines favor publication in selective journals (typically produced by a handful of publishers)
- Publishers hesitant to adopt open access models that threaten their financial viability

Pressure Mounting to Change the System

Gathering Calls for Open Access

Large Publishers Skeptical of Alternatives

Institutions Unable to Effect Change Alone

Cornell Bans Non-Disclosure Agreements

U of California Stands Up to Nature Group

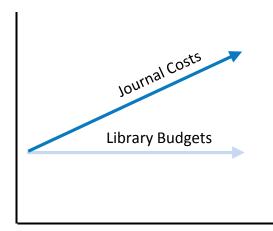
U.K. Research Libraries Say "No" to Big Deals

Be Our Guest

"If libraries and universities think they can manage peer review, editing, publication, marketing, and distribution themselves, then why don't they? No one's stopping them."

> Executive Major Publisher

Knowledge Explosion Vastly Outstrips Purchasing Power



Emerging Pay-Per-View Models

User-Driven Article Access Offers an Alternative to the "Big Deal"



"Get It Now" Service An Alternative to Inter-Library Loan

- Can be directly user-driven or librarian-mediated
- Full PDF e-mailed to user within 5 minutes
- Avg. cost per article: \$24
- Articles shareable if institution adopts CCC Annual Copyright License



DeepDyve

Article Rentals for Knowledge Professionals

- Aggregates articles from partner publishers
- Users can browse and preview abstract for free
- 24-hour article rentals starting at \$0.99; Cannot print or download
- Tiered monthly plans available, allowing longer access

For this model to supplant subcriptions, publishers would have to...

- Accept lower profits ("Big Deal" dismantled)
- Migrate to usage micro-charges or direct-to-user sales model

Subsidizing Accessibility

Four Ways to Unilaterally Encourage Open Access



- Modeled on Compact for Open-Access Publishing Equity (COPE)
- Any UF faculty, post-doc, student, or staff can apply
- Up to \$3,000 in fee support
- Must be published in open access journal

Open Access Fee Subsidy

Disciplinary Repository

 OpenFolklore hosted by Indiana U. library, home to free folklore journals

ArXiv hosted by Cornell library,

home to hard science e-prints

 A model platform for future scholarly communication?

arXiv.org

Open Folklore

KU KANSAS

- KU "ScholarWorks" hosts faculty e-prints and data
- Available freely worldwide, Google-friendly (stable URL)
- Allows tracking of output, access, readership

Institutional Repository

 Can negotiate with publishers for faculty backfiles

Open Textbook Pilot

- 2009 Florida legislation spurred open textbook taskforce
- Introductory calculus textbook commissioned by provost
- Free to download, \$35 for print
- Study suggested faculty worried about quality, recognition



Opening the Floodgates

Digitization Transformed the Music Industry in Less Than a Decade

Digital Music Purchase Options



Lessons from the Music Industry

- Long tail thrives: Consumers have broader access and more purchase options
- Every musician a producer: Musicians have more options for distributing their work
- More music, less revenue: Total revenues from sales of CDs, vinyl, cassettes and digital downloads in the U.S. peaked at \$14.6 B in 1999, may fall as low as \$9.2 B
- Adapt or die: Record companies and music retailers have struggled to adapt
- Music wants to be free: Digital Rights
 Management (DRM) restrictions largely
 abandoned after 2007

The Most Valuable Space on Campus

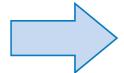
Converting Library Space to Meet Patron Needs

Current State

- Most library space taken up by physical books and journals in open stacks
- Typically 50% of volumes have never circulated (some institutions as many as 80%)



Space



Preferred End-State

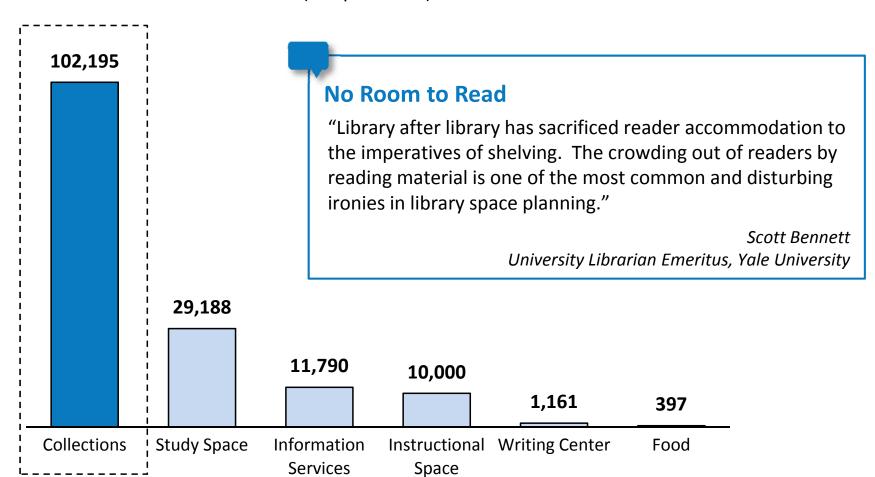
- Ebooks and e-journals provide instant access to needed resources
- Physical volumes are removed when possible to free up space for collaborative learning and other activities
- Other academic support services (e.g., teaching and learning centers) move into the library space

Barriers to Change

- Ebooks and discovery tools not yet an acceptable substitute for browsing open stacks
- Vocal groups of faculty strongly oppose reducing onsite physical collection
- Deselecting books and journals can be expensive and time-consuming
- Often expensive to renovate libraries to accommodate new uses

Majority of Library Space Is Devoted to the Print Collection

Typical Space Allocation at a Mid-Size University Library (in square feet)



A Long Tail in the Stacks

Most Volumes Rarely Circulate, If Ever

A long-known problem

"Use of Library Materials" 1979

- 40% of collection never circulated
- If a book did not circulate during first 6 years, chances of it ever circulating were 1 in 50



Now even worse

Cornell University

"Task Force on Print Collection Usage" 2010

- 55% of books purchased since 1990 have never circulated
- 65% of books purchased in 2001 had not circulated by the end of 2009

Average annual circulation rate from open stacks

1-2%

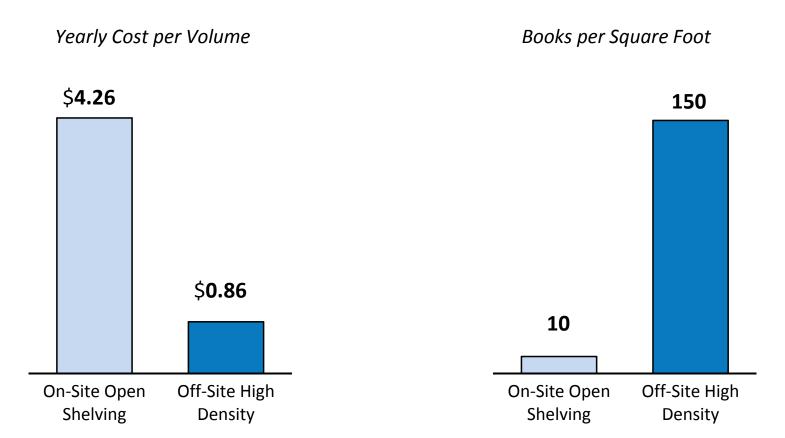
Average annual circulation rate from high-density storage

Source: Allen Kent et al., "Use of Library Materials: The University of Pittsburgh Study," Marcel Dekker, 1979; "Report of the Collection Development Executive Committee Task Force on Print Collection Usage," Cornell University Library, 2010; Paul Courant, "On the Cost of Keeping a Book," *The Idea of Order*, CLIR, 2010; Lizanne Payne, "Library Storage Facilities and the Future of Print Collections in North America," OCLC, 2007.

The Price of "Just-in-Case" Collections

Attachment to Open Stacks Comes With Significant Costs

The Cost of Keeping a Book



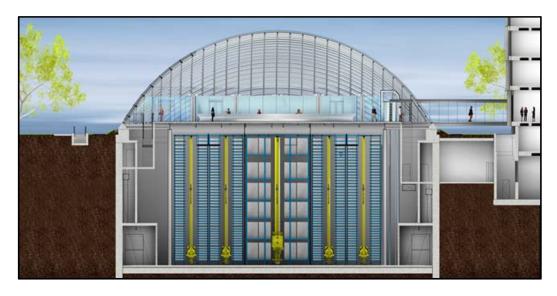
Source: Courant, Paul and Matthew Nielsen, "On the Cost of Keeping a Book", The Idea of Order: Transforming Research Collections for 21st Century Scholarship. CLIR Pub#147. June 2010; Education Advisory Board interviews and analysis.

A Cathedral for Books

University of Chicago Asserts the Continuing Importance of Print



The Joe and Rika Mansueto Library



- Opened May 16, 2011
- Construction cost \$81 M
- Space for 3.5 M volumes in Automated Storage and Retrieval System (ASRS)
- Now houses more volumes (8M) under a single roof than any other university library

Building a Beacon for Scholars

"...[F]or all the talk about digitization, our flow of printed material into the library hasn't diminished at all ... What if there were a dramatic move away from digitization? Our aim here was to be absolutely the top-notch university library."

Richard Saller, Provost University of Chicago

Repurposing the Warehouse

Top Trends in Next-Generation Library Space Planning



Fewer physical resources



Wireless connectivity and outlet access



Comfort and collaboration



Integration of academic support services



Flexibility and modularity



Food and drink

Coming Out from Behind the Desk

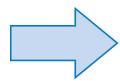
Library Staff Engaging Directly with Student and Faculty Needs

Current State

- Significant staff time devoted to cataloging and processing physical books and journals
- Declining utilization of circulation and reference services



Staffing



Preferred End-State

- Librarians embedded in online courses, departments, and research teams
- Specialized staff lead campus efforts in academic technology, e-science, and digital information resources

Barriers to Change

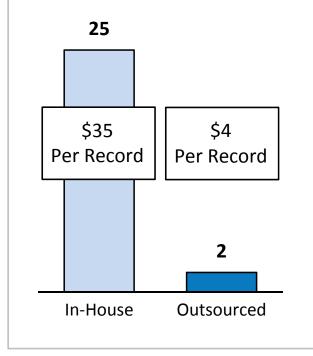
- Some librarians lack skills, interest in providing new support services
- Faculty do not always see librarians as a useful resource for teaching and research support

Smarter Allocation of Staff Time

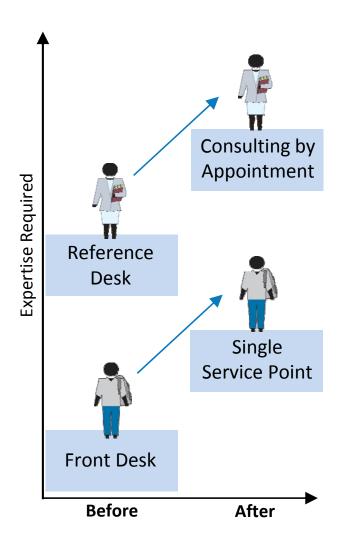
Shelf-Ready Acquisition



Staff required to process 30,000 books in time for library opening



Tiered Reference Services



Crowd-Sourced Reference



- Cooperative, 24/7 reference service staffed by librarians
- Run by OCLC
- Participating libraries contribute portion of staff time



- 24/7 reference service funded by state of Ohio
- Free of charge
- Staffed by Ohio librarians

Information Literacy in the Age of Google

Tailoring Library Instruction to the "Instant Gratification" Generation

If You Can't Beat It, Make It Better



A Look Inside Google Search



Learning First Hand

"Everyone in academe teaches. And the course provides an amazing moment, when you work with advanced undergraduates or grad students on writing assignments. What if we make working on Wikipedia part of those assignments?"

Mahzarin Banaji Psychology Professor Harvard University

Behind the Curtain

"Given their popularity with students, knowing more about how search engines work is vital to understanding information access in a digital age. Unfortunately, most students do not understand how Google and other search engines rank results."

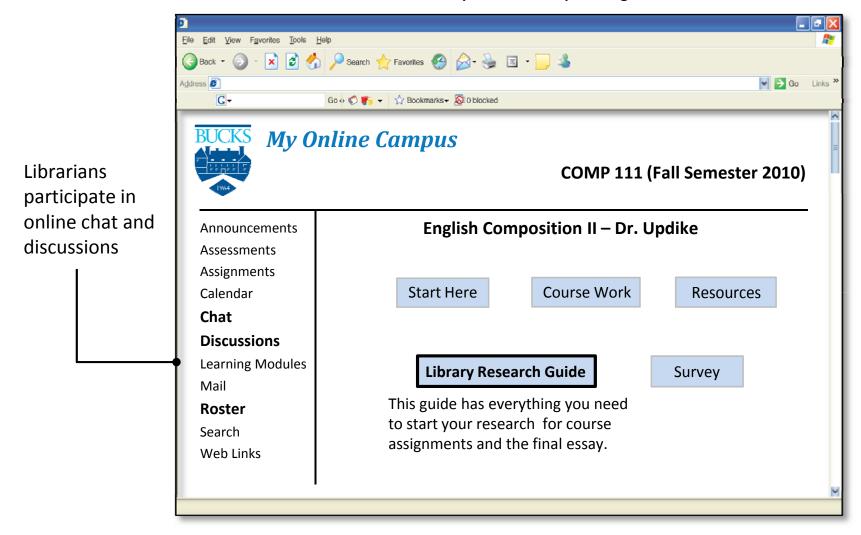
Paul Barron Library Director George C. Marshall Foundation

Source: Paul Barron, "How Google Works: Are Search Engines Really Dumb and Why Should Educators Care?" Internet@Schools, Jan 1, 2011; John Fischman, "Academics, In New Move, Begin to Work With Wikipedia", The Chronicle of Higher Education, May 28, 2011.

Going Where the Students Are

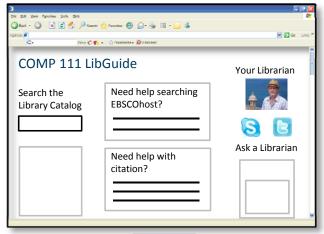
Embedded EBrarians Integrated into Online Courses

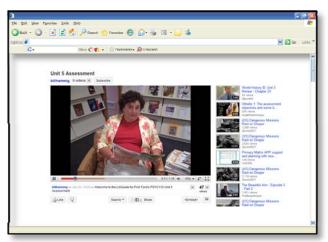
Bucks County Community College



LibGuides

Video Tutorials













There's an App For That

Mobile Information Services at Students' Fingertips

NC STATE UNIVERSITY

As the world becomes increasingly digital and mobile...

- Students expect perpetual and instant access to resources
- The line between physical and virtual interaction becomes blurred
- Adoption costs come down, expanding user base
- Social networks make collaborative learning the norm
- Networks enable new possibilies for "augmented reality"

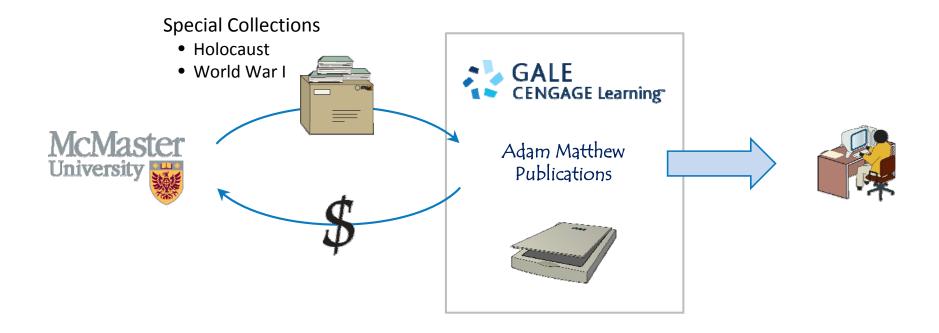


NCSU Libraries Mobile brings library to devices

- Search the catalog
- Locate available computers in library
- Locate available work space
 - GroupFinder
 - Study Room Reservations
- Real-time chat with librarians
- Hours and Locations of library branches
- Check the coffee shop line using live webcam

Getting the Most Out of Special Collections

Vendor Partnerships in Digitization, Preservation, and Marketing



- Publishers digitize, describe, market, and host 25-30,000 items for each project
- McMaster retains ownership, gets free digital access and copies of scans
- Portion of revenue from publishers returns to McMaster
- Non-compete agreement allows publishers a negotiated period of exclusivity, after which the collections become public

Starting from Scratch

Building an Academic Library Based on Future Needs Rather than Past Precedent



Minimal Physical Collection

- 93 K print books
- 632 K digital books
- 56 K digitized journals

Large Collaborative Collection

- Rapid access to 36 M physical books and 1.7 M digitized books held in UC libraries
- CDL handles licensing e-resources

Patron-Driven Acquisition

- Most purchases selected by patrons
- No subject librarians on staff

Outsourced Technical Services

- Use YBP Library Services
- Receive shelf-ready books that are already cataloged and labeled
- Sends gift book to OCLC for cataloging

Virtual Reference

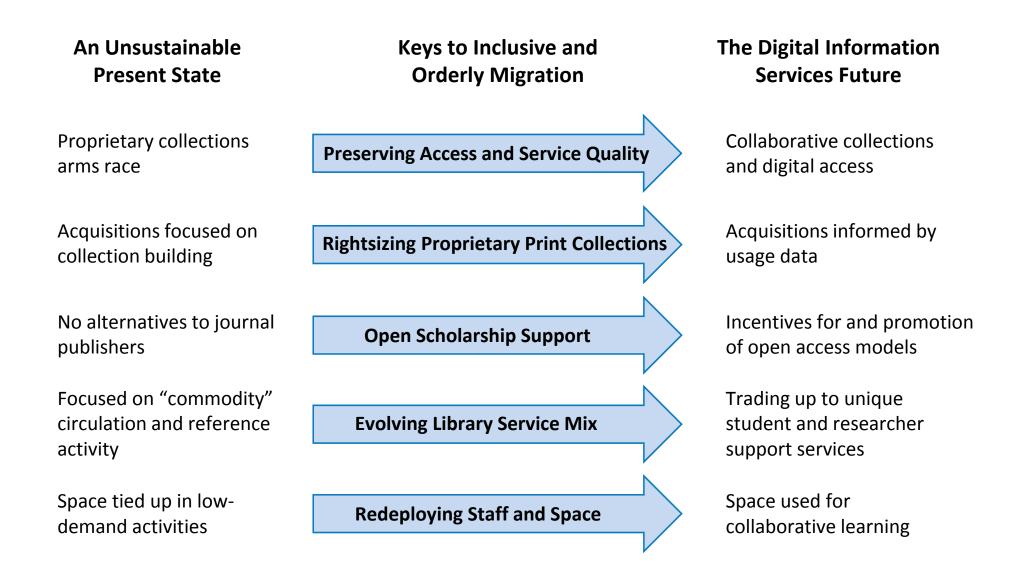
- No reference desk
- Outsourced reference service through phone, e-mail, chat, workshops

Automated Circulation

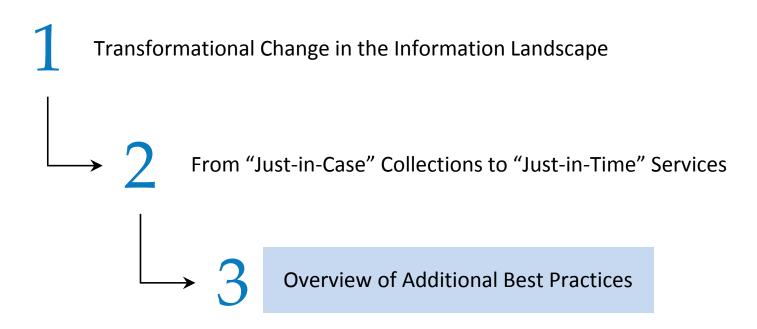
- Self-checkout
- RFID tags on all books

Transforming the Library

Defining and Removing On-Campus Barriers to a Preferred End-State



Road Map for Discussion



Redefining the Academic Library

Managing the Migration to Digital Information Services

Sustainable Collection Management

Redeploying Library Staff



Rightsizing the **Print Collection**

- Usage-Based Deselection
- Collaborative Collection Planning
- Item-Level Faculty Appeals

Aligning Purchasing with Demand

- Patron-Driven Acquisition
- Print-On-Demand Books

Reducing Scholarly Publishing Costs

- Centralized Licensing Structure (The Walmart Model)
- On-Demand Article Purchasing (The iTunes Model)
- Open Access
 Publishing
 (The Linux Model)

IV

Externalizing Lower-Value Activity

- Shelf-Ready Acquisition
- Tiered Reference Services
- Integrated IT Services

V

Embedding High-Value Local Services

- Embedded eBrarian
- Multimedia Support
- Departmental Informationist
- Data Curation
- Shared Specialists