

Transforming Libraries for Sustainability:

Issues and Challenges

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Universiti Putra Malaysia



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Sustainability :

- is the capacity to endure
- *kebolehan untuk bertahan*



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Sustainability

- as “the capacity to endure”
- the policies we write, the customer service expectations we have of our staff, the technology we deploy, the messages we send, all can contribute to having a sustainable library.



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Trends affecting libraries

- communication systems are continually changing the way people access information
- technologies commonly used today will be replaced by something new
- ultimate small particle for storage - coming soon
- demand for global information is growing exponentially
- libraries will transition from a center of information to a center of culture

Evolution of Sound Recording



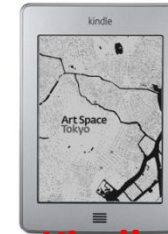
Ebooks Platform



iBook



Web Base



Kindle



Bundle , Mobi, .epub, pdf

Rapid growth of information

- The number of songs available on iTunes – over 3.5 million.
- The number of books on Amazon – over 4 million.
- The number of blogs available online – over 60 million.
- The number of entries on Wikipedia – over 4 million.
- The number of user accounts on MySpace – over 100 million
- The number of videos on YouTube – over 6.1 million



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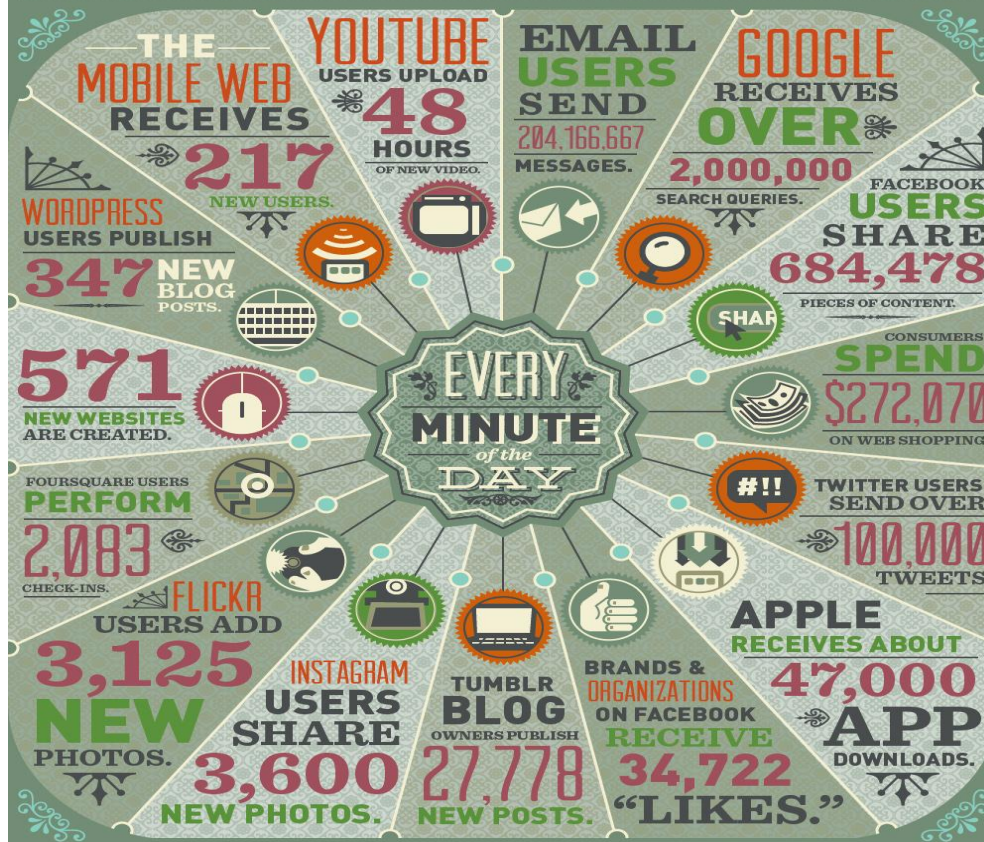
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DATA NEVER SLEEPS

How Much Data Is Generated Every Minute?

Big data is not just some abstract concept used to inspire and mystify the IT crowd; it is the result of an avalanche of digital activity pulsating through cables and airwaves across the world. This data is being created every minute of the day through the most innocuous of online activity that many of us barely even notice. But with every website browsed, status shared, or photo uploaded, we leave digital trails that continually grow the hulking mass of big data. Below, we explore how much data is generated in one minute on the Internet.



WITH NO SIGNS OF SLOWING, THE DATA KEEPS GROWING

These are just some of the more common ways that Internet users add to the big data pool. In truth, depending on the niche of business you're in, there are virtually countless other sources of relevant data to pay attention to. Consider the following:

The global Internet population grew 6.59 percent from 2010 to 2011 and now represents

2.1 BILLION PEOPLE.

These users are real, and they are out there leaving data trails everywhere they go. The team at Domo can help you make sense of this seemingly insurmountable heap of data, with solutions that help executives and managers bring all of their critical information together in one intuitive interface, and then use that insight to transform the way they run their business. To learn more, visit www.domo.com.

SOURCES: [HTTP://NEWS.INVESTORS.COM/](http://NEWS.INVESTORS.COM/), ROYAL.PINGDOM.COM, BLOG.GROVO.COM, BLOG.HUBSPOT.COM, SIMPLYZESTV.COM, PCWORLD.COM, BIZTECHMAGAZINE.COM, DIGBY.COM



<http://www.domo.com/blog/2012/06/how-much-data-is-created-every-minute/>



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Brought to you by **DOMO** THE PHYSICAL SIZE OF BIG DATA

How Much Data Does the World Create Every Year?

A report from Stanford University found that the whole of humanity produces around **1,200 EXABYTES** of data every year.

Let's break that down into **GIGABYTES** and see what would happen if we were to store this data on **SEVERAL COMMON DEVICES**.

80.53 BILLION
16 GB iPhone 5s
 Laid down end to end, those iPhones would **CIRCLE THE EARTH** more than **100** times.

40.27 BILLION
32 GB Apple iPads
 Stacked one on top of the other, this pile would reach to the **MOON**.

20.13 BILLION
64 GB USB flash drives
 The volume of these drives would be enough to fill up more than **33 1/2** Empire State Buildings.

629.14 MILLION
2 TB external hard drives
 The total volume of these drives could fill more than **292** Great Pyramids.

Managing even a small portion of that data can be incredibly daunting, especially for executives and business managers who don't typically speak in terms of "giga" this or "tera" that. If the data overload is slowing down your business, the team at Domo can help. By bringing together all of your critical information, from finance and sales to ops and IT, into one intuitive dashboard, Domo helps turn big data into this-actually-makes-my-business-better data. To learn more, visit WWW.DOMO.COM.

SOURCES: WWW.NEWEGL.COM | HCLSTANFORD.EDU | WWW.APPLE.COM

<http://www.domo.com/blog/2013/05/the-physical-size-of-big-data/>

LibraryThing

Google books

goodreads

WorldCat®

Microsoft Academic Search



PubMed Central



Search the Library

Google scholar beta

Search Everything

Catalog

Journals

My Accounts

Site Search

JURN

NETFLIX

scitopia.org

EndNote® Web

zotero
Leveraging the long tail of scholarship.

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WIKIPEDIA

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Technorati

About.com
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Searches articles, books, digital collections, and more....

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[Course Reserves & ERes](#)

Google

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from YAHOO!

arXiv.org

@ The Library

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- [AASC100.01](#)
- [AASC167.01](#)
- [ACTG180.01](#)
- [ACTG180.02](#)
- [ACTG180.50](#)
- [ACTG203\(all\)](#)
- [ACTG250.01](#)

Search Reserves by:

- [Instructor](#)
- [Department](#)

Got Questions?

Chat with a...

LIBRARIAN

DIGITALCOMMONS™

PHOTOMUSE
DOAJ
DIRECTORY OF OPEN ACCESS JOURNALS

CiteSeer^x beta
Scientific Literature Digital Library and Search Engine

amazon mechanical turk
Artificial Artificial Intelligence



stackoverflow

YAHOO! ANSWERS

New Generation of Library User



The Great Divide ca. 2012

Digital Immigrants	Digital Natives
	
Passive	Active
Serious	Fun
Ordered	Random Access
Prolonged	Instant
Focused	Multi-tasking
Individual	Networked
Education	Life

Net Geners and Library Services: A Disconnect

- They like
 - Multimedia environments
 - Figuring things out for themselves
 - Working in groups
 - Multitasking
 - Learning directly related to courses
- We offer
 - Text-based environments
 - Systems that require prior understanding (or librarian help)
 - Services for individual use
 - Focus, logical sequence
 - Catalogs, databases, subject guides and pathfinders

Joan Lippincott, Coalition for Networked Information. In *Educating the Net Generation*

Internet altered reading/research habits

- quick scans short passages
- “skimming activity”
- “power browse”

“hopping from one source to another and rarely returning to any source they’d already visited”

Nicholas Carr. *Is Google Making Us Stupid? : What the Internet is doing to our brain.* The Atlantic, July/August 2008.



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What do students think of libraries?

A college student's vision for the academic library

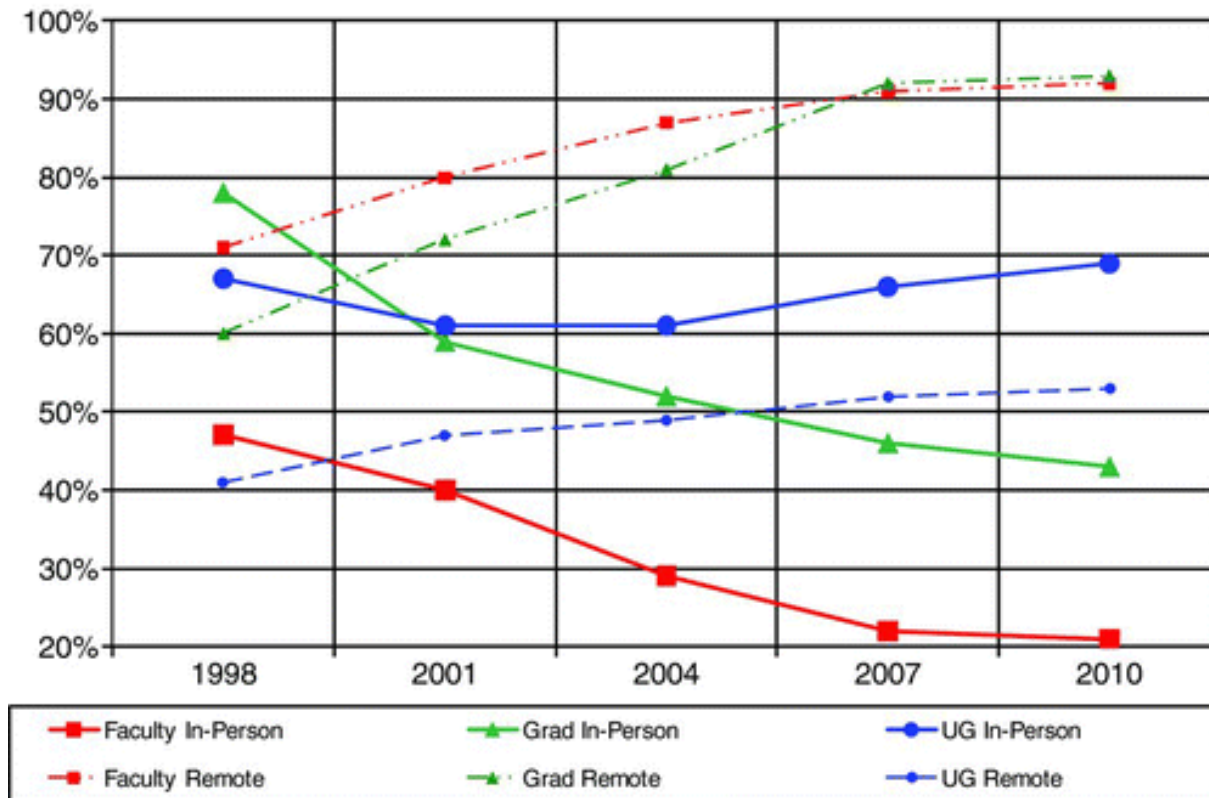
November 7, 2006 6:03 am jrettig academic libraries

My daughter, a junior in college, sent me this IM exchange she and a friend had recently:

” chiquitachik: how are you?
funnyblonde: good
funnyblonde: you
chiquitachik: good
funnyblonde: goodo!
funnyblonde: how was your day?
funnyblonde: eventful?
chiquitachik: not really
funnyblonde: yeah me neither
funnyblonde: the library was boring
chiquitachik: libraries usually are
funnyblonde: yeah such a shame
funnyblonde: they should put a circus in it
chiquitachik: HAHahaha
funnyblonde: that [would] make me want to go a lot more



Declining Frequency of Library Visits



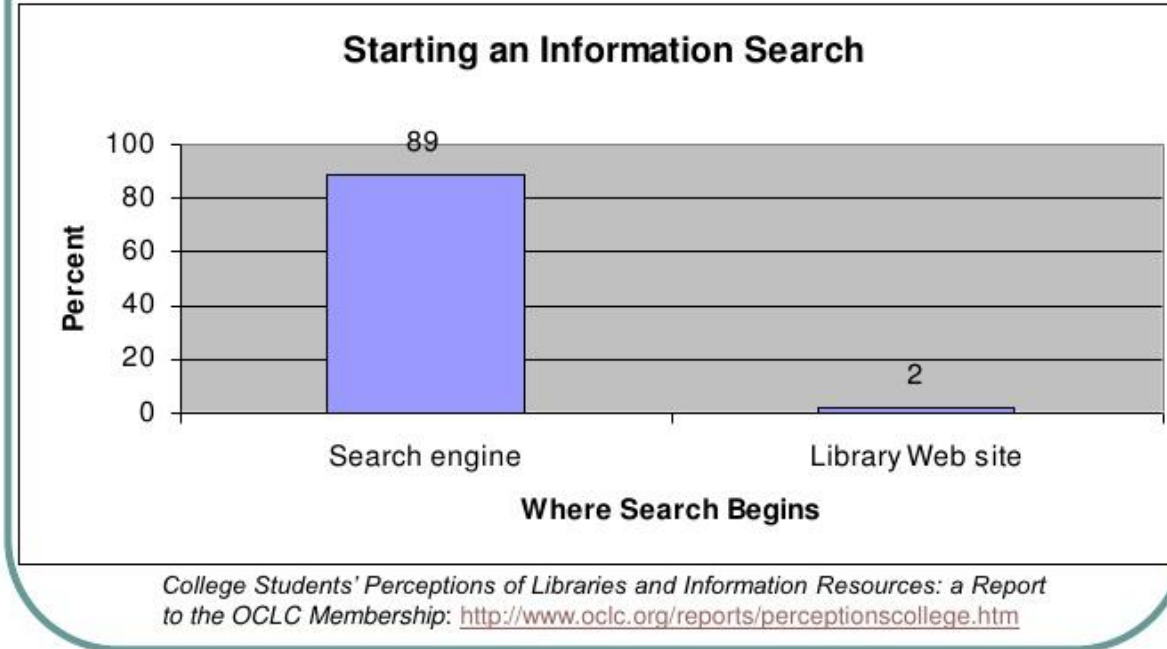
Frequency of Library Visits by Group and Mode, 1998–2010 (% who visit weekly or more often).

Wilson, Lizabeth A. Creating Sustainable Futures for Academic Libraries. *Journal of Library Administration*

Vol. 52, Iss. 1, 2012

Search Site Choice

Where Do You Begin a Search for Information on a Topic? (2005)



January 2012

Duquesne Gumberg Library

7



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Today's library users

- are accessing and using information very differently
- are “savvy” and demanding
- use the internet more than they watch television
- expect integration of digital content
- use portable devices to access information
- multi-task and use media simultaneously
- think they can find all knowledge via Google/Wikipedia



Future of Libraries



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Four different library futures:

1. Failing library;
2. Conventional library;
3. Techno centrist library and
4. Transformational library.

Key characteristics of the Failing Library are:

- **weak leadership** - lacking vision and sustainability thinking;
- **failure to innovate** - using latest information and computer technology;
- traditional functions are absorbed or acquired by other institutional units;
- control over library future has shifted to other administrators;
- collaboration with other libraries is virtually nonexistent;
- fallen victim to “everything is on the Internet” syndrome.



Key characteristics of the Conventional Library are:

- retains strong value culture;
- slow adaptation of technology;
- weak vision of future and direction library must take for sustainability;
- tries to be all things to all people;
- lacks service focus;
- aims for homogenization rather than diversity;
- weak consortia links.

Key characteristics of the Technocentrist Library are:

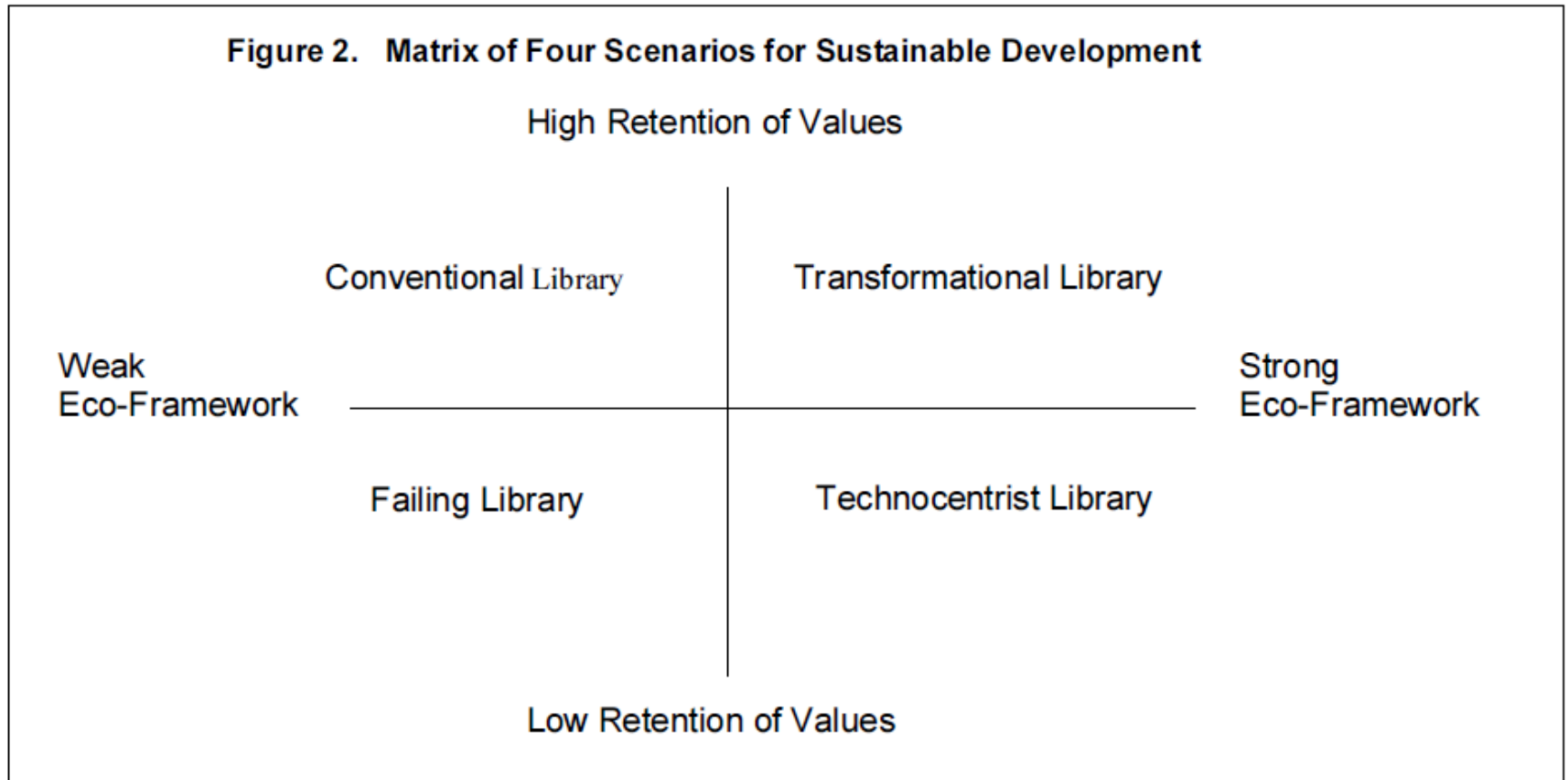
- **weak** and disappearing **value culture**;
- technology perceived as solution to problems and link to future;
- human element critical to traditional services is de-emphasized;
- staff is alienated, overwhelmed and frustrated by fast technological change;
- strong vision of future.

Key characteristics of the Transformational Library are:

- guiding philosophy states present actions must sustain library futurity;
- emphasizes value climate and value culture internally and externally;
- **embraces technology** but allows staff to adapt to and master it;
- internal and external collaborative efforts are vital to organization;
- vision of future is library as **evolving, permutable organization.**



Figure 2. Matrix of Four Scenarios for Sustainable Development



Bell, Steven J. Using the Scenario Approach for Achieving Sustainable Development in Academic Libraries. ACRL Ninth National Conference, April 8-11, 1999, Detroit, Michigan

Libraries Must Evolve & Change With Time

Change is necessary

- Less money to support the library
- Search starts elsewhere; many substitutes for what the library offers
- Of what does get used:
 - Seemingly unquenchable demand for e-resources
 - Physical collections rarely used
 - Use of traditional collection-based services in decline (the catalog, reference services)
- Traditional academic library service model is less relevant every day and has a dim future

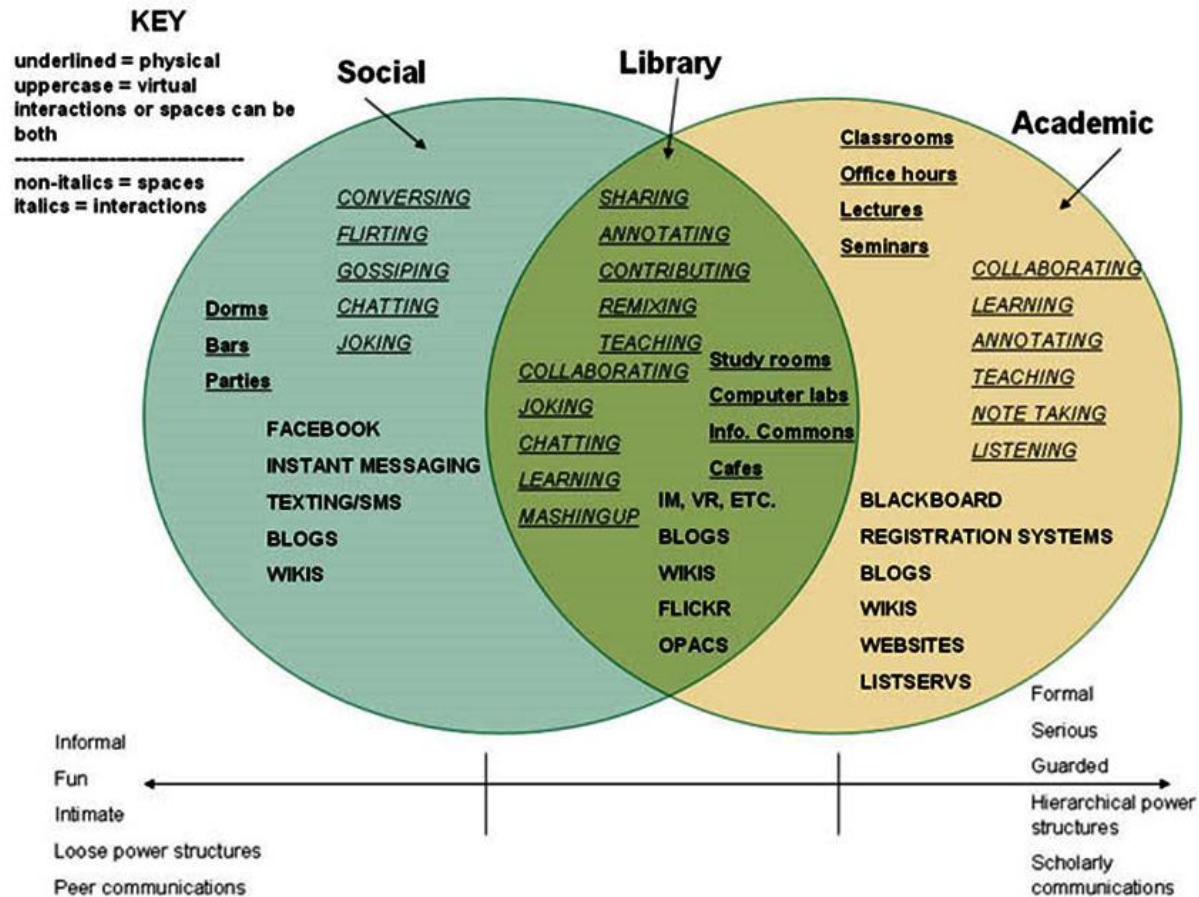
Academic Library Autopsy Report, 2050 by Brian T. Sullivan

1. Book collections became obsolete
2. Library instruction was no longer necessary
3. Information literacy was fully integrated into the curriculum
4. Libraries and librarians were subsumed by information-technology departments
5. Reference services disappeared
6. Economics trumped quality

Source: <http://chronicle.com/article/Academic-Library-Autopsy/125767/>

Michael Habib's Library 2.0

Figure 4: Academic Library 2.0 Concept Model, Detailed



Role of Librarians in the Digital Age



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Role of Librarian



“The librarian isn't a clerk who happens to work at a library. A librarian is a data hound, a guide, a sherpa and a teacher. The librarian is the interface between reams of data and the untrained but motivated user”.

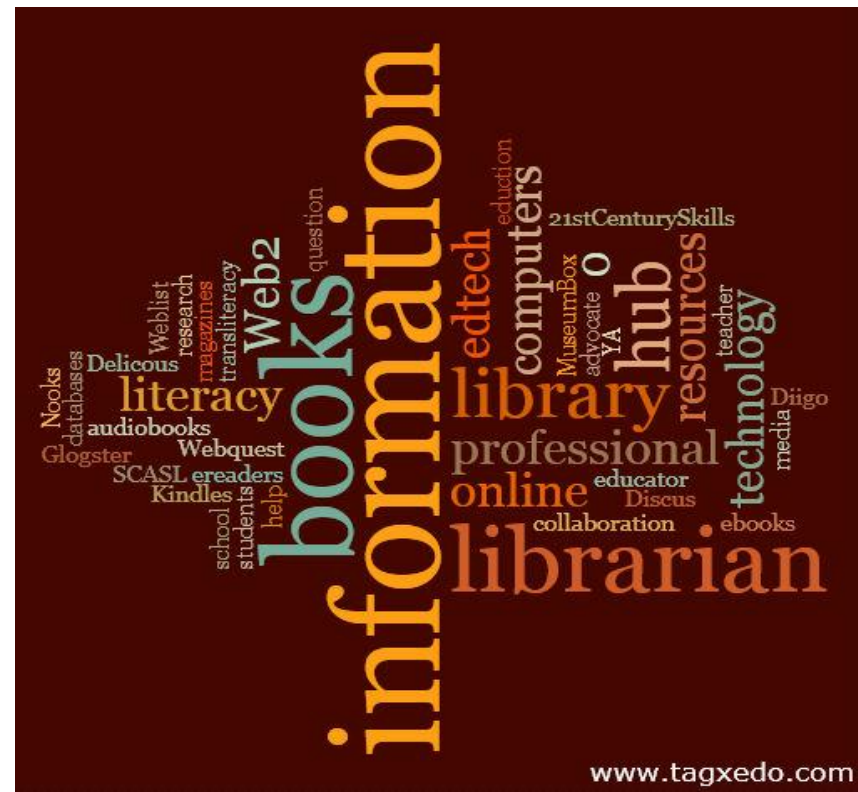
Seth Godin. *The future of the library*. Seth' Blog

(http://sethgodin.typepad.com/seths_blog/2011/05/the-future-of-the-library.html)

Role of Librarian

- Get Yourself Out of the Library
- Know What You Do and How to Describe It
- Be Where the Decisions Get Made
- Don't Be a Clerk
- Collaborate as an Equal

Steve Casburn. Prove Yourself: What Public and Academic Librarians Can Learn from Special Librarians
(http://www.liscareer.com/casburn_special.htm)



Role of Librarian

Liaison librarian model

Coming Out from Behind the Desk

Library Staff Engaging Directly with Student and Faculty Needs



EAB report p. 66

January 2012

Duquesne Gumberg Library

Source: Education Advisory Board interviews and analysis.

32

- English language classes:
 - ESOL courses, conversational practice sessions, Pre-GED classes, and English for Health.
- Job skill training
 - certification in Sigma Six, Quickbooks, and Autodesk software systems.
- Yoga class
- Art class for kids

Role of Librarian

- Librarians need to do less selection and processing
- New library roles will include, teaching new information skills, developing and managing systems and building contents.
- Flexible staffing and flexible staff



End of the Road for Librarians?

PENNSSTATE
University Libraries

Slide 56 of 94 powered by mediasite



Paused 39:38/01:04:45

New hires

- Unlikely to be librarians
- Unlikely to be traditional paraprofessional
- Likely to come out of IT, including audio/video production
- Likely to be PhD's
- Likely to have skills we haven't even thought of
- Likely to be shared with other units

Transforming Traditional Organizations

Jeffrey Trzeciak

The Libraries Colloquia Committee presents a talk by Jeffrey Trzeciak

4/8/2011 1:00 PM EDT Length: 01:04:45 More...

MediaTech
Media Technology Support Services

Why Librarians are Needed

"The majority of information lies outside the Internet."

Jens Redmer, Director of Google Book Search



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Redesigning Library Space



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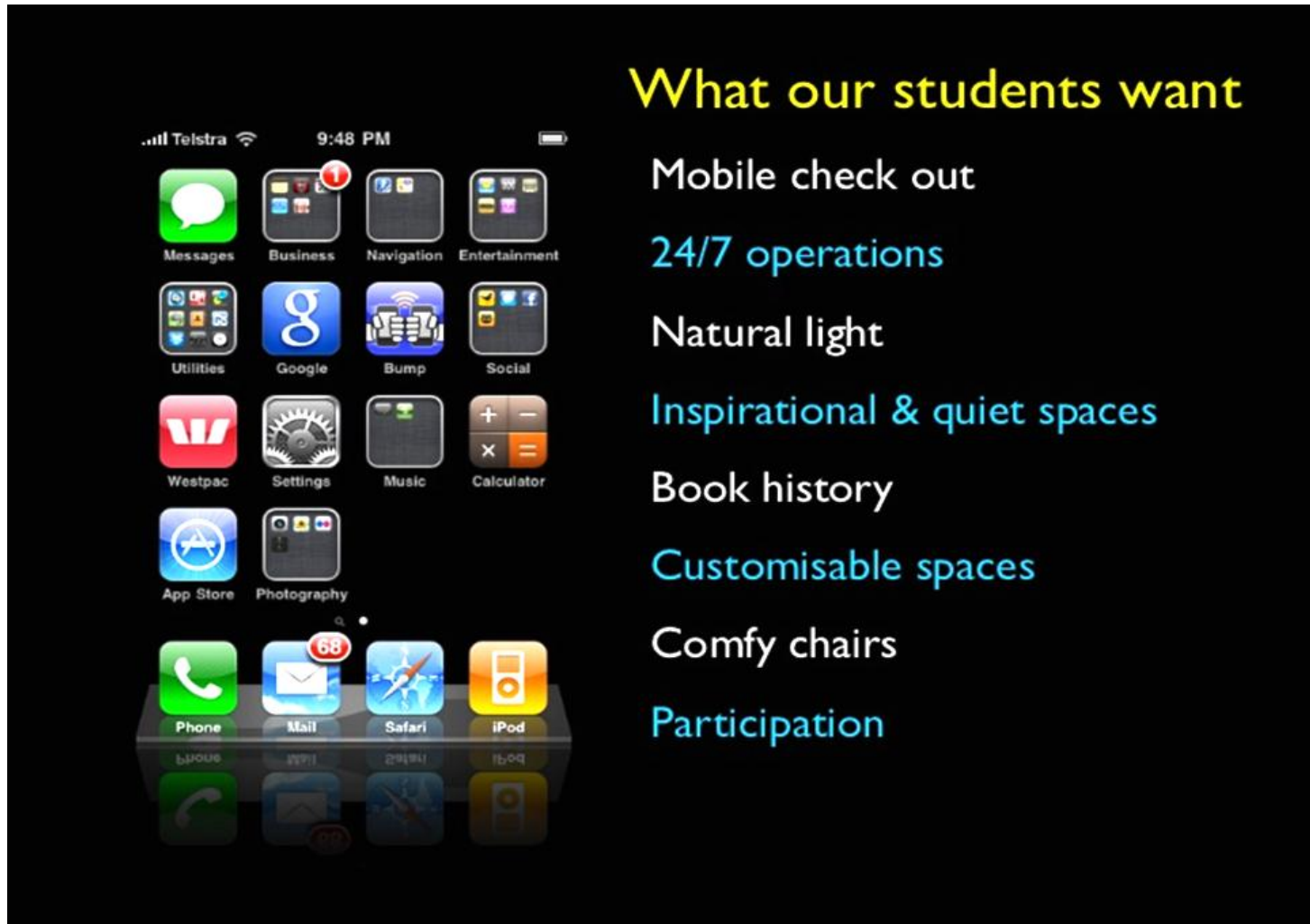
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Redesigning Library Space

“Undergraduates live on the Web. They begin, and often finish, their research with Google, and mostly use the library as a place to study.”

David W. Lewis. A model for academic libraries 2005 to 2025.

Redesigning Library Space



What our students want

Mobile check out

24/7 operations

Natural light

Inspirational & quiet spaces

Book history

Customisable spaces

Comfy chairs

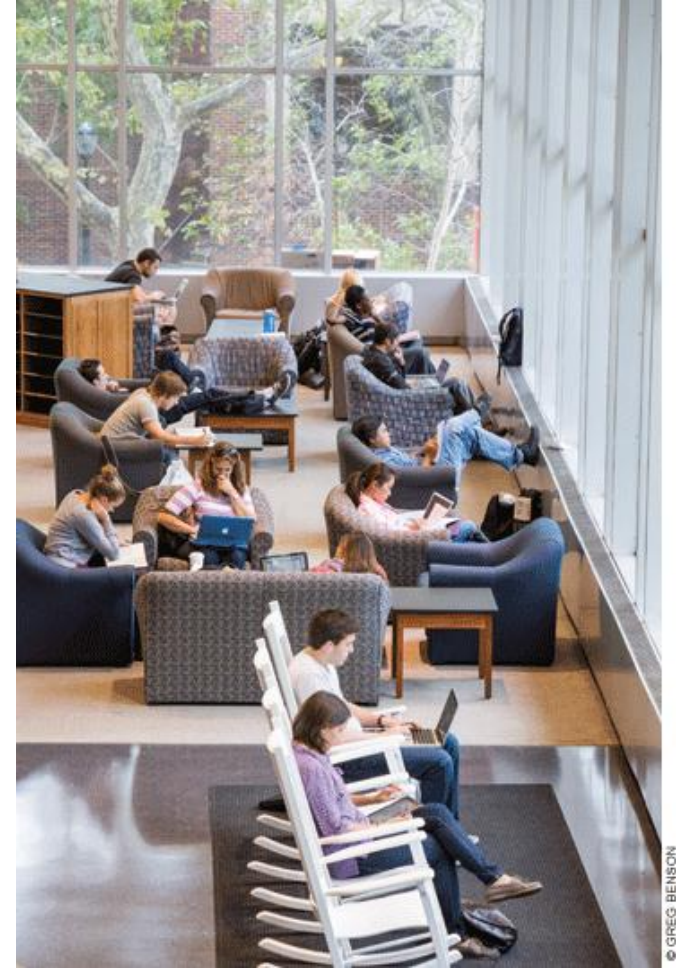
Participation



Redesigning Library Space

- Library spaces need to be redesigned & experiment with new use cases in mind.
- Rethinking our services and spaces is far more complex than adopting a new technology or two; it involves engaging with our community in a manner that meets real patron needs.

Robert Schwarzwalder. The changing face of academic libraries: Why less space does not have to mean less impact. *LibraryConnect* , no. 1, vol.9, 2011



Redesigning Library Space

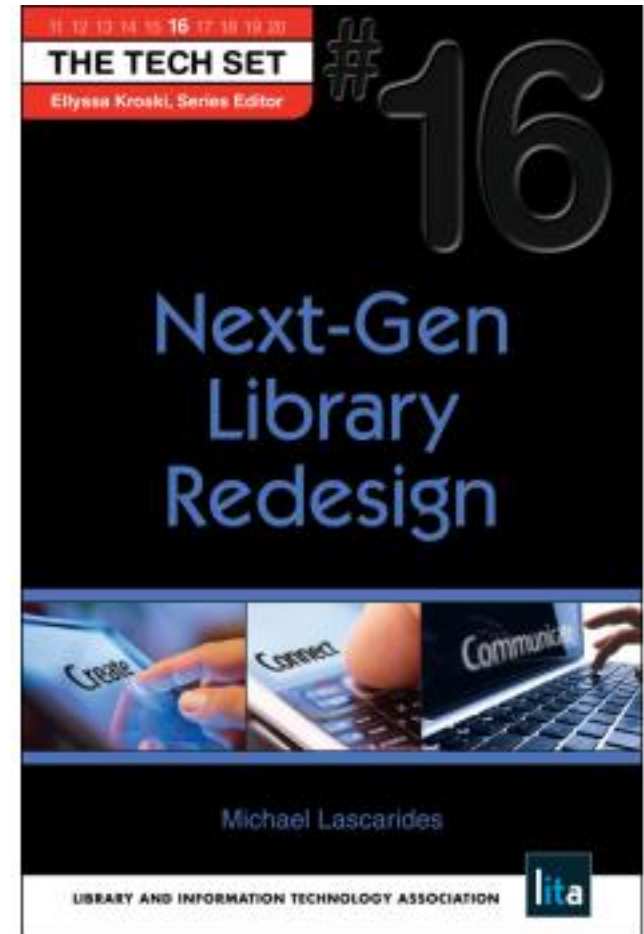
Libraries must be spaces where multiple activities can take place simultaneously. And since there are many different learning styles, the library should offer as many different types of environments as possible—quiet study areas, group activity areas, spaces for individual and small group work, spaces for instruction, spaces where students can listen to music, and—dare I say it—spaces where food and drinks are allowed.

Rolf Erikson on “should the library of the future be a ‘sacred’ space dedicated to honoring the book, or a dynamic interactive space dedicated to honoring the student and community?”



Redesigning Library Space

- Create a diversity of user study space
 - Academic commons
 - Quiet areas
 - Wood-paneled reading rooms
- Retire inactive print materials to free up space
 - Reshelving/relocate
 - Stack room
 - Compactus shelving



Future Library Services



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Bookless Library

Bexar County Library - BiblioTech

- first country wide bookless public library system
- designed for, not adapted to, the digital age

“It's not a replacement for the (city) library system, it's an enhancement. People are always going to want books, but we won't be doing that in ours,”

Nelson Wolff

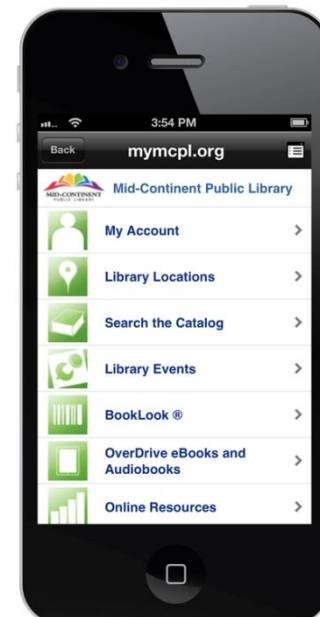
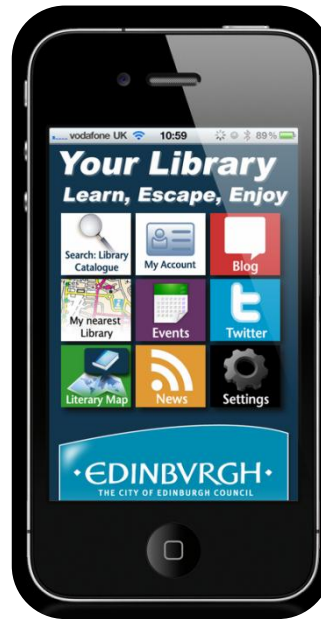


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Future Library Services

- Apps-based access to library materials and programs



Kathryn Zickuhr, Lee Rainie and Kristen Purcell, Library Services in the Digital Age. *Pew Internet* (<http://libraries.pewinternet.org/2013/01/22/library-services/>)

Future Library Services

- Access to technology “petting zoos” to try out new devices



PALO ALTO CITY LIBRARY presents

Technology Petting Zoo

Thursday, October 7
Drop in anytime between 1:30-3:30 p.m.

Palo Alto Main Library
1213 Newell Road

FREE

Discover new technological devices in a hands-on experience!

- E-book readers: Kindle, Nook, Sony
- iPad, iPhone, iPod
- Netbooks
- Flip Video Camera
- HP Touchsmart laptop
- Portable media players
- And more!

LIBRARY PALO ALTO CITY
Information: 650-329-2436 www.cityofpaloalto.org/lib

Lester Public Library of Rome

TECH Petting Zoo

...a Kindle, iPad, digital camera, and iPod will be available at regular intervals, allowing participants to “test drive” these devices with a knowledgeable staff person on hand to guide their learning experience.

Wednesday, 9/14/11
1:00pm to 3:00pm

Registration is required

Two ways to register:
• call the library
• stop in

Questions?
Please call us at
(718) 829-9900 or visit us at
1187 Rome Center Drive
in the Town of Rome.

TECH Petting Zoo is funded by Community Grant Funds through the Community Foundation of Greater South Wood County.

Kathryn Zickuhr, Lee Rainie and Kristen Purcell, Library Services in the Digital Age. *Pew Internet* (<http://libraries.pewinternet.org/2013/01/22/library-services/>)

Future Library Services

- GPS-navigation apps to help patrons locate material inside library buildings



Kathryn Zickuhr, Lee Rainie and Kristen Purcell, Library Services in the Digital Age. *Pew Internet* (<http://libraries.pewinternet.org/2013/01/22/library-services/>)

Future Library Services

- “Redbox”- style lending machines or kiosks located throughout the community, where people can check out books, movies or music without having to go to the library itself



Kathryn Zickuhr, Lee Rainie and Kristen Purcell, Library Services in the Digital Age. *Pew Internet* (<http://libraries.pewinternet.org/2013/01/22/library-services/>)

Future Library Services

- “Amazon”-style customized book/audio/video recommendation schemes that are based on patrons’ prior library behavior



Found Products (13)	Price
South of the Border, West of the Sun: A Novel	\$10.96
Sputnik Sweetheart: A Novel	\$10.96
Dance Dance Dance	\$10.39
Hard-boiled Wonderland and the End of the World: A Novel (Vintage International)	\$11.56
A Wild Sheep Chase: A Novel	\$11.56
The Elephant Vanishes: Stories	\$10.99
Norwegian Wood	\$10.99
Kafka on the Shore	\$11.56
After Dark (Vintage)	\$10.06

Sort by: Popularity

Search: Books | IQ84 | Go

Dance Dance Dance

Price: \$10.39
By: Haruki Murakami
Published: 1995-01-31
Pages: 416

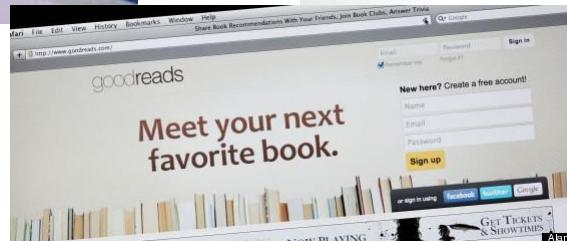
amazon.com

Product Description Customer Reviews

In this propulsive novel by the author of *Hard-Boiled Wonderland and the End of the World* and *The Elephant Vanishes*, one of the most idiosyncratically brilliant writers at work in any language fuses science fiction, the hard-boiled thriller, and white-hot satire into a new element of the literary periodic table.

As he searches for a mysteriously vanished girlfriend, Haruki Murakami's protagonist plunges into a wind tunnel of sexual violence and metaphysical dread in which he collides with call girls; plays chaperone to a lovely teenaged psychic; and receives cryptic instructions from a shabby but oracular Sheep Man. *Dance Dance Dance* is a tense, poignant, and often hilarious ride through the cultural Cuisinart that is contemporary Japan, a place where everything that is not up for sale is up for grabs.

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Kathryn Zickuhr, Lee Rainie and Kristen Purcell, Library Services in the Digital Age. *Pew Internet* (<http://libraries.pewinternet.org/2013/01/22/library-services/>)

Future of Academic Libraries

	Historical	Emerging	Future
Collections	Just-in-case	Just-in-time	On demand, anytime
Space	Static, mostly for collections	Flexible, user-focused	Embedded in academic units, a collaborative space for Knowmads
User Experience	Unintentional	Experimentation with service design	Academic libraries as campus leaders in community engagement
Reference	In person, over the phone	Digital	Highly automated, mobile
Users	Students, faculty at their home institution	MOOCs, New majority learners, unaffiliated global learners	Community members, Knowmads
Skills	Master's of Library Science, subject specialists	Blended Librarians	Entrepreneurial Blended Librarians
Teaching & Learning	Assist students and faculty with research assignments, drop-in sessions by request	Embedded in colleges, departments, and courses	Blended Librarians
Demonstrating Value	Collection size	Expanding partnerships on campus, create evidence for invisible services	Learning analytics
Relationships with Faculty	Limited, based on research needs	Co-creative, joint research projects	Partnerships with unaffiliated research entrepreneurs

<http://www.educationfutures.com/2012/03/26/the-future-of-academic-libraries-an-interview-with-steven-j-bell/>

Conclusion



Conclusion

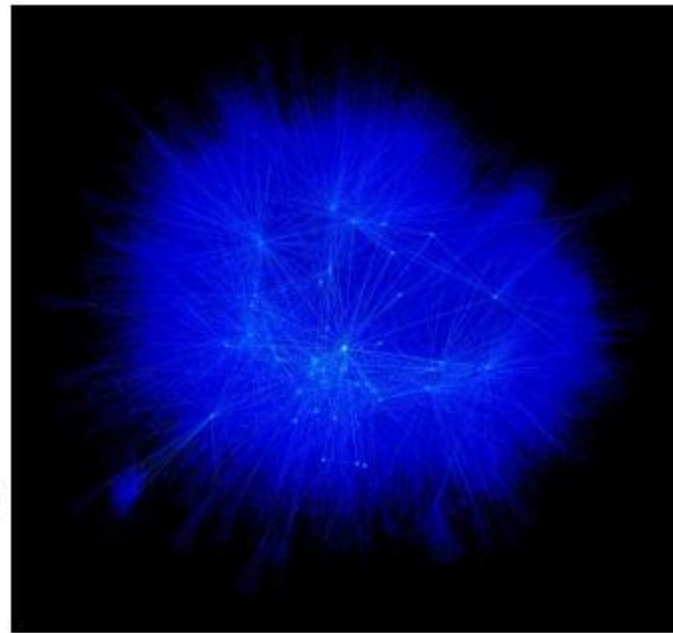
Changes that have been successful elsewhere

- Library space redesign
- Liaison librarian model (the “embedded librarian”)
- Streamlining operations
 - Combining public service points
 - Technical services workflow redesign
- Collaboration and partnerships

Conclusion

A New Kind of Library

- Build a vision of a new kind of library
- Be more involved with research and learning materials and systems
- Be more engaged with campus communities
- Make library collections and librarians more visible
- Move to next generation systems and services



Embedding the library in the
knowledge community

Conclusion

“The library of the future may not be a stable, predictable place, but it should be a place with room for diversity, strategic redundancy, innovation, and experimentation. As librarians and library leaders, we must be able to relinquish the idea that we can control our environment, and instead take on the hard work of building resilience”.

Karen Munro. Resilience vs. Sustainability: The Future of Libraries. *In the Library with the Lead Pipe*. August 24, 2011

(<http://www.inthelibrarywiththeleadpipe.org/2011/resilience-vs-sustainability-the-future-of-libraries/>)



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Librarians in the new context must to be able to

- implement innovative responses in a timely and positive manner;
- meet users where they are and not wait for users to come to them;
- change their own behavior to meet changes in client behavior;
- focus on the user's point of view, not the librarian's point of view;
- provide services at times and in places which are convenient to users (24 × 7);
- understand user needs for personalization and categorization;



Librarians in the new context must to be able to

- support self-service as well as service in person and online, including online chat;
- provide the “library to go”, visiting users where they need it;
- adopt marketing approaches to information service delivery;
- train themselves and others;
- collaborate and work in partnership with others;
- provide information via web pages, wikis, blogs or online gateways; and
- demonstrate **agility**, **flexibility** and an ability to **innovate**.



“(L)ibraries are about more than just e-readers or any other media, as important as those things are. They are about more than just buildings ..., or the sleek and controversial new design **They are also about human beings and their relationships, specifically, the relationship between librarians and patrons.**”



Sarah Goodyear. The Future of Librarians in an EBook World. *The Atlantic Cities*. February 4, 2013.

No libraries,
no memory,
no history,
no future.



David W. Lewis. *A Model for Academic Libraries 2005 to 2025*. Paper to be presented at "Visions of Change," California State University at Sacramento, January 26, 2007

Bell, Steven J. *Using the Scenario Approach for Achieving Sustainable Development in Academic Libraries*. ACRL Ninth National Conference, April 8-11, 1999, Detroit, Michigan



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