Vision for the Future of Academic Libraries

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Agenda

1. What has Changed?
2. Steps Down the Road
3. Ten Things to Do Now
What Has Changed?
“Now, like then, public leaders and public institutions have failed to keep up with rapid change, and popular trust has been deeply eroded.”

Now, like then, “this is the best moment in history to be alive” — human health, literacy, aggregate wealth and education are flourishing — and “there are more scientists alive today than in all previous generations.”
Now, like then, “sizable parts of the population found their skills were no longer needed, or they lived in places left behind, so inequality grew.”

– Ian Goldin as quoted by Thomas Friedman


Vernacular Bible

Novel

Scholarly Journal
Literacy Became an Amateur Activity
Alphabetical Order as a Way of Arranging Knowledge
Katherine Hepburn (at right) faces down EMERAC in *Desk Set* (1957).
Moore’s Law

Moore’s Law

Raymond Kurzweil, Kurzweil Accelerating Intelligence, [http://www.kurzweilai.net/exponential-growth-of-computing#!prettyPhoto](http://www.kurzweilai.net/exponential-growth-of-computing#!prettyPhoto)
“The exponential, digital, and recombinant powers of the second machine age have made possible for humanity to create two of the most important one-time events in our history: the emergence of real, useful artificial intelligence (AI) and the connection of most of the people on the planet via a common digital network.”

— Erik Brynjolfsson and Andrew McAfee

“I’m a human being. When I see something that is well beyond my understanding, I’m afraid.”

— Garry Kasparov 1997

“I felt like quiz show contestant was now the first job that had become obsolete under this new regime of thinking computers.”

— Ken Jennings 2011
“I am very surprised because I have never thought I would lose,” Mr. Lee said at a news conference in Seoul. “I didn’t know that AlphaGo would play such a perfect Go.”

— Lee Se-dol 2016

There are about $10^{170}$ board positions in Go, and only $10^{80}$ atoms in the universe.
Watson’s hardware cost $3,000,000 in 2011. Assuming Moore’s Law holds, in 2020 the same hardware will cost less than $50,000. in 2030 it should cost less than $750.
Start using Watson Analytics in minutes!

1. Sign up for an IBM ID
   * or use your existing IBM ID
2. Validate your account in the confirmation email
3. Log in and start exploring your data

Try it for Free
ARPNET LOGICAL MAP, MARCH 1977

(PLEASE NOTE THAT WHILE THIS MAP SHOWS THE HOST POPULATION OF THE NETWORK ACCORDING TO THE BEST INFORMATION OBTAINABLE, NO CLAIM CAN BE MADE FOR ITS ACCURACY.)

NAME SHOWN ARE NO NAMES. NOT NECESSARILY HOST NAMES.

1977
About 3.7 billion Internet Users
40% of the World’s Population

http://thecreatorsproject.vice.com/blog/what-the-internet-looks-like
What Has Changed?

Documents are Digital and on the Network
<table>
<thead>
<tr>
<th>Print Documents</th>
<th>Digital/Networked Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>Universal</td>
</tr>
<tr>
<td>User goes to the content</td>
<td>Content comes to the user</td>
</tr>
<tr>
<td>Takes time to acquire</td>
<td>Available instantaneously</td>
</tr>
<tr>
<td>Designed for one user</td>
<td>Designed for many users</td>
</tr>
<tr>
<td>Immutable</td>
<td>Easily changed</td>
</tr>
<tr>
<td>Preservation understood</td>
<td>Can easily incorporate all forms of media</td>
</tr>
<tr>
<td></td>
<td>Preservation challenging</td>
</tr>
</tbody>
</table>
### Print Documents

- Rival good
- Authorship is most often individual

### Digital/Networked Documents

- Non-rival good
- Often authorship is shared and social production is common
- Marginal cost of production and distribution is zero
Print Documents

Publishing is a professional activity

Digital/Networked Documents

Publishing becomes an amateur activity
A labor of love, of obsession, of erudition, of self-awareness, of self-confrontation, and of restless protean evolution, what Tasha Lewis has done is to create a parallel to the reading experience that not only transforms the text, it elevates it.

**MATT KISH**, creator of *Moby-Dick in Pictures: One Drawing for Every Page*

Illustrating Joyce’s *Ulysses* is a deeply inventive “visualization,” rather than illustration, of Joyce’s novel. [...] This is a fascinating project.

**KAREN R. LAWRENCE**, author of *The Odyssey of Style in Ulysses*

Illustrating Joyce’s *Ulysses* is a monumental feat—644 images, one for each page of the novel. Tasha Lewis offers us a litany of styles and a virtuoso array of techniques: collage, embroidered advertisements, silkscreen hallucinations, food art, the aural shapes of words, their histories embedded in wax, Polaroid nostalgia and Google Street View’s All-Seeing Eye. The result is a provocative artwork, at once a whimsical homage and a beautiful recreation of James Joyce’s masterpiece.

**KEVIN BIRMINGHAM**, author of *The Most Dangerous Book: The Battle for James Joyce’s Ulysses*
Libraries in the Print World

Local
Complicated to use
Subject to congestion

Libraries in the Digital/Networked World

Network scale
Powerful discovery tools
Fast, cheap and easy
Libraries in the Print World

Acquire and manage content from the world for the community or institution

Libraries in the Digital/Networked World

Manage and preserve local content for the world
What Has Changed?
The Scholarly Record is Bigger, Slipperier and Harder to Manage
From Brian Lavoie, Eric Childress, Ricky Erway, Ixchel Faniel, Constance Malpas, Jennifer Schaffner ans Titia van der Werf, The Evolving Scholarly Record (Dublin, OH: OCLC Research, June 2014), 10,
## Characterizing Research Process and Outputs

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Past Practice</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Process</td>
<td>Hidden</td>
<td>Visible</td>
</tr>
<tr>
<td>Nature of the Object</td>
<td>Fixed</td>
<td>Varying</td>
</tr>
<tr>
<td>Atomicity of Object</td>
<td>Atomic</td>
<td>Compound</td>
</tr>
<tr>
<td>Process of Making Public</td>
<td>Discrete</td>
<td>Continuous</td>
</tr>
<tr>
<td>Speed of Communication</td>
<td>Delayed</td>
<td>Instant</td>
</tr>
<tr>
<td>Communicated Object</td>
<td>Publication plus Data Proxies</td>
<td>Publication plus Linked Data plus Linked Models</td>
</tr>
<tr>
<td>Nature of Process</td>
<td>Formal</td>
<td>Informal</td>
</tr>
</tbody>
</table>


http://journals.plos.org/plosone/article?id=info:doi/10.1371/journal.pone.0115253
What Has Changed?

Economics of Scholarly Information No Longer Work
Monograph & Serial Costs in ARL Libraries, 1986-2011*

Serial Expenditures (+402%)

Monograph Unit Cost (+99%)

Monograph Expenditures (+71%)

Monographs Purchased (+10%)

NOTE: Data for monograph and serials expenditures was not collected in 2011-12.

*includes electronic resources from 1999-2011.
If gasoline had increased in price at the same rate as Chemistry and Physics journals from 1975 to 2015, it would cost $30.61 (£23.03) a gallon.

In the U.S. gasoline currently costs $2.50 to $3.00 a gallon.

Fundamental Shift
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Steps

Defining the Job
Creating the Library as Place
Retiring the Legacy Print Collection
Preserving Digital Content
Making the Money Work
Working with the Smart Machine
Ronald H. Coase asks the question: if markets are the most efficient means for the economy to work, why do we have firms?

Transaction costs

Academic libraries provide a function for the university that has been brought in-house because the market in the past has been unable to provide the documents and other services that the university required.

Now the market can provide many of the services once provided by the library.
Who is hiring us? To do what job?

What product or service can help students and faculty do more effectively, conveniently and affordably a job they’ve been trying to do in their scholarly lives.

“Clayton Christensen: Milkshakes Understanding the Job,” video, http://ed.ted.com/on/KwEb5IAJ
The Legacy Print Collection Needs to be Safe

• Who Keeps What?
• Use Copies and Dark Preservation Copies
• Discovery and Delivery
• Financial Model

• “Collective Collection” – National Scale Project Allows Local Action
RLUK Collective Print Book Collection: Size

20.9M titles*

48.4M holdings in RLUK libraries

695.8M holdings in WorldCat

Avg. = 2 RLUK holdings per title

Avg. = 33 WorldCat holdings per title

*distinct publications; de-duplicated OCLC numbers

Malpas and Lavoie. 2016.

RLUK Collective Print Book Collection: Duplication Rates

In-group Duplication of RLUK-held Print Book Titles (N = 20.9M)

- 88% scarce at RLUK-scale

WorldCat Duplication of RLUK-held Print Book Titles (N = 20.9M)

- 56% scarce at WorldCat scale

Membership $20,000 per year includes 5TB for 20 years
Extra TB for $5,000 for 20 years

Membership: $5,500-$3,000 per year
Storage: $585/TB/year

Many options $700 to $3,000 per TB/year
Hub for DPN

Invitation only membership $20,000 per year includes 10 TB
Hub for DPN
1. Patron Driven Acquisition (PDA) for books, both print and e-books.
2. Article purchasing rather than subscriptions for journals.
3. Gold Open Access (OA) journals will continue to grow and become the business model of choice for a large portion of scholarly journal publishing.
4. The growth in open content and open discovery tools on the Web, such as Wikipedia and Google Scholar, will reduce the need for paid database content.
“We're close to the point where the available knowledge at the hands of the individual, for questions that can be posed clearly and articulately, is not so far from the knowledge of the entire world.”

— Tyler Cowen
1. What do we teach?

2. How do we support people using information?

3. How do we support people creating information?
Things to Do Now
1. Retire the Legacy Print Collection Now.

2. Have a materials Budget Strategy to Manage the Transition from Traditional Publishing Models to Open Access.

3. Support the Creation of, Access to, and Preservation of the Scholarly Content Created on Your Campus.

4. Commit to the Special Collections Your Library will Support and Make the Required Investments.
5. Develop a Space Plan

6. Infuse the Curriculum with the Skills Necessary to Create and Consume Information Productively.

7. Invest in the Development and Sustainability of Network Level Tools and Services.
8. Understand the Demographics of Your Organization and Have a Plan to Hire or Develop the Expertise the will Library Need.

9. Sell the Change.

10. Get the Culture Right.
“Take a close look at these stories, and you’ll see that they deal with three fundamental issues. First is justice: Is this a fair place? Second is security: Is it safe to work here? Third is control: Can I shape my destiny and have influence in this organization?”

— Adam Grant

“All of the risks and all of the opportunities lie in the workforce. In just cultures, no one needs permission to be creative or courageous. But they do need support, encouragement, and belief.”

— Margaret Heffernan


See also: Margaret Heffernan: *Why It's Time to Forget the Pecking Order at Work*. TEDWomen 2015 May 2015, http://www.ted.com/talks/margaret_heffernan_why_it_s_time_to_forget_the_pecking_order_at_work
Questions?

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