Current Issues in Library Collections

圖書館館藏當前專題研究

Peter Sidorko

The 12th Annual Library Leadership Institute

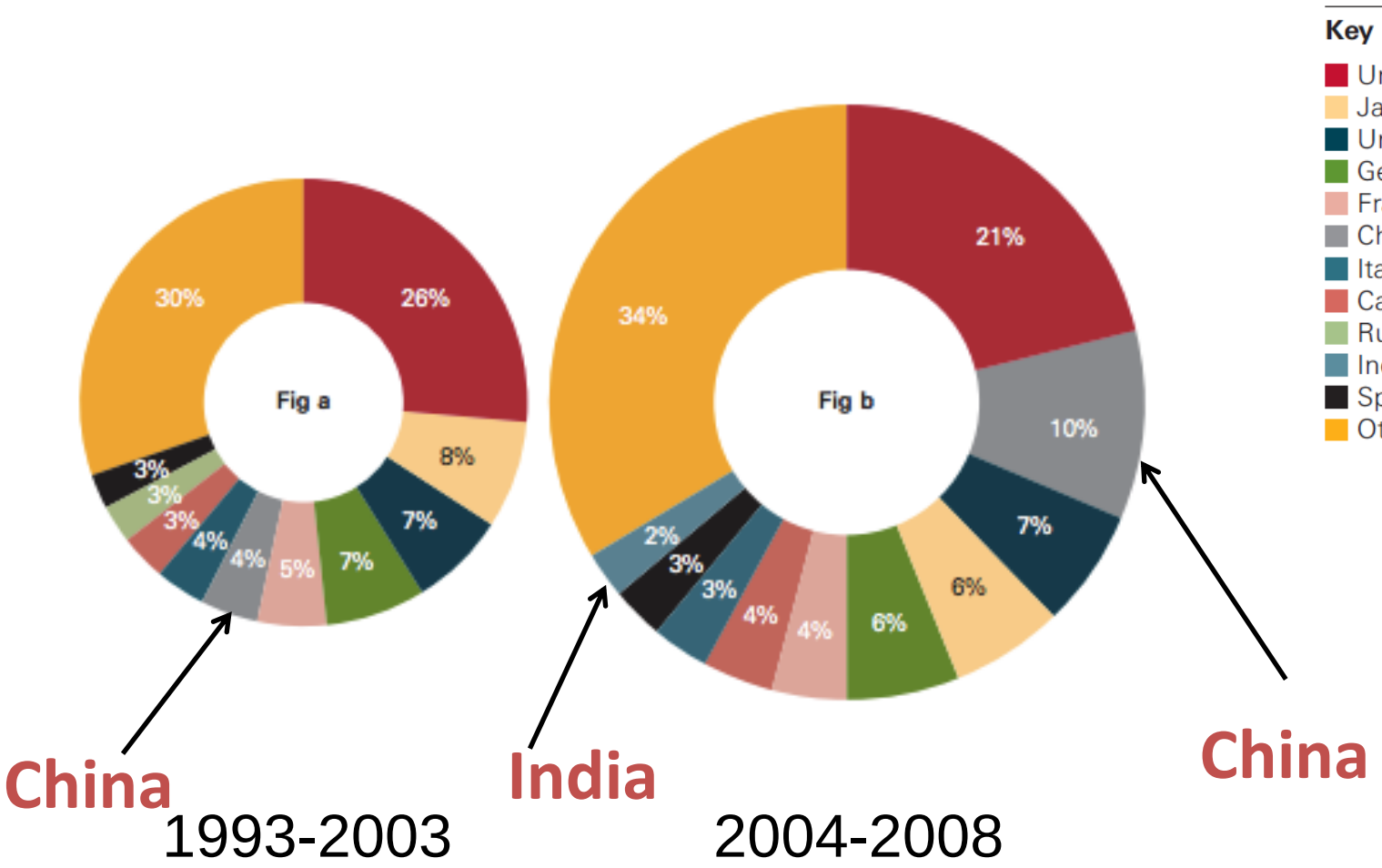
Library Leadership
in the Asia Pacific Century

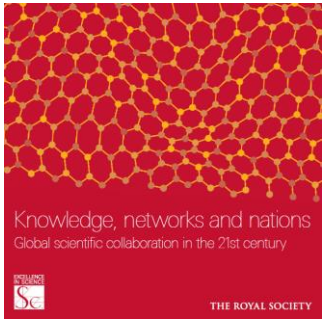
Shanghai, China | 16-20 May, 2014

Organised by: The University of Hong Kong Libraries In conjunction with: 復旦大學圖書館 FUDAN UNIVERSITY LIBRARY

First let’s look at this Asia Pacific Century!

Proportion of global publication authorship by country





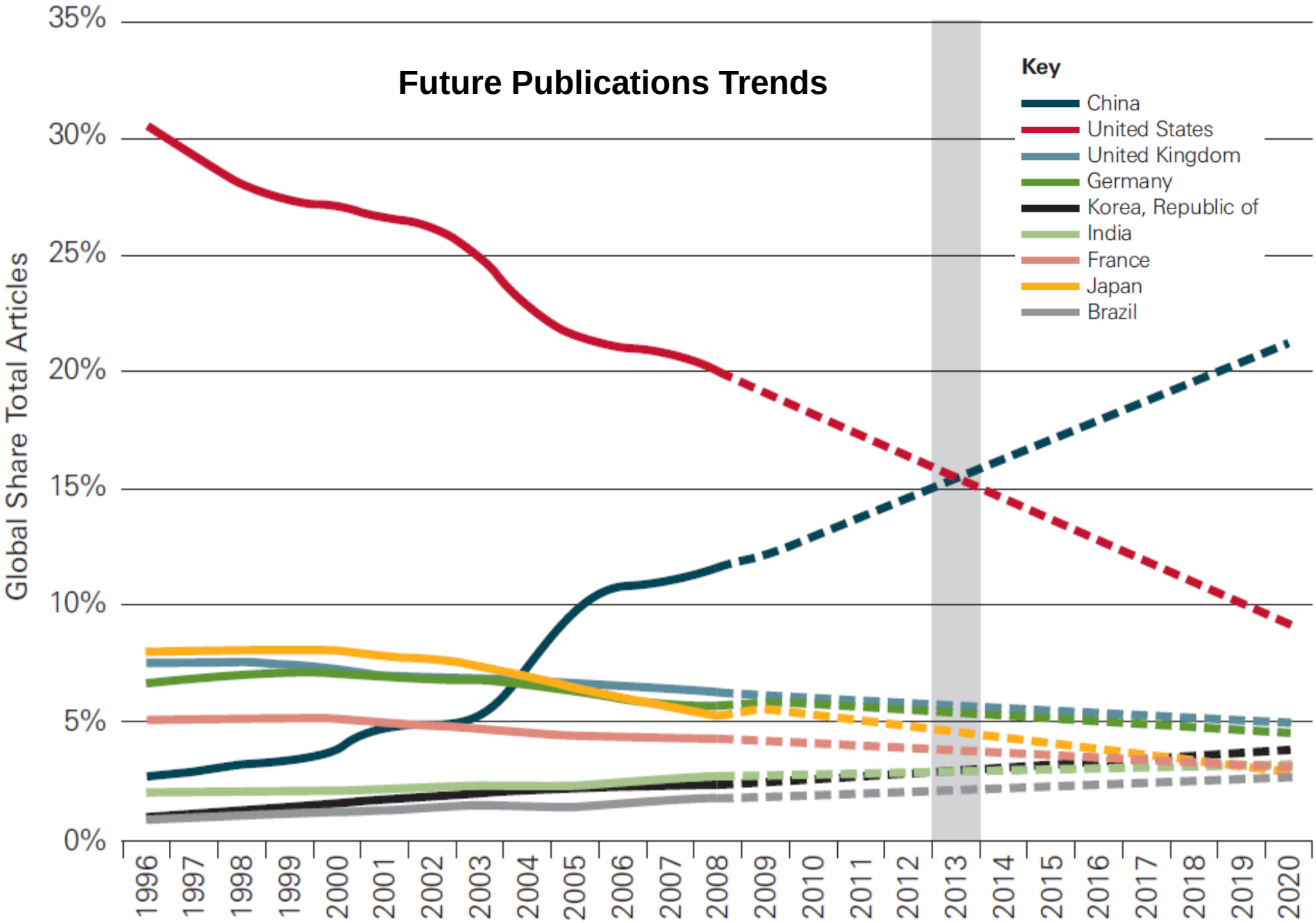
Knowledge, Networks and Nations: Global scientific collaboration in the 21st century. London: The Royal Society, 2011.
http://royalsociety.org/uploadedFiles/Royal_Society_Content/Influencing_Policy/Reports/2011-03-28-Knowledge-networks-nations.pdf

Scientific publishing

Key City with highest publication output in the period 2004-2008; growth is since period 1996-2000.

- Decreased or stayed constant
- Increased 5-10 places
- Increased 10-20 places
- Increased 20+ places

http://royalsociety.org/uploadedFiles/Royal_Society_Content/Influencing_Policy/Reports/2011-03-28-Knowledge-networks-nations.pdf



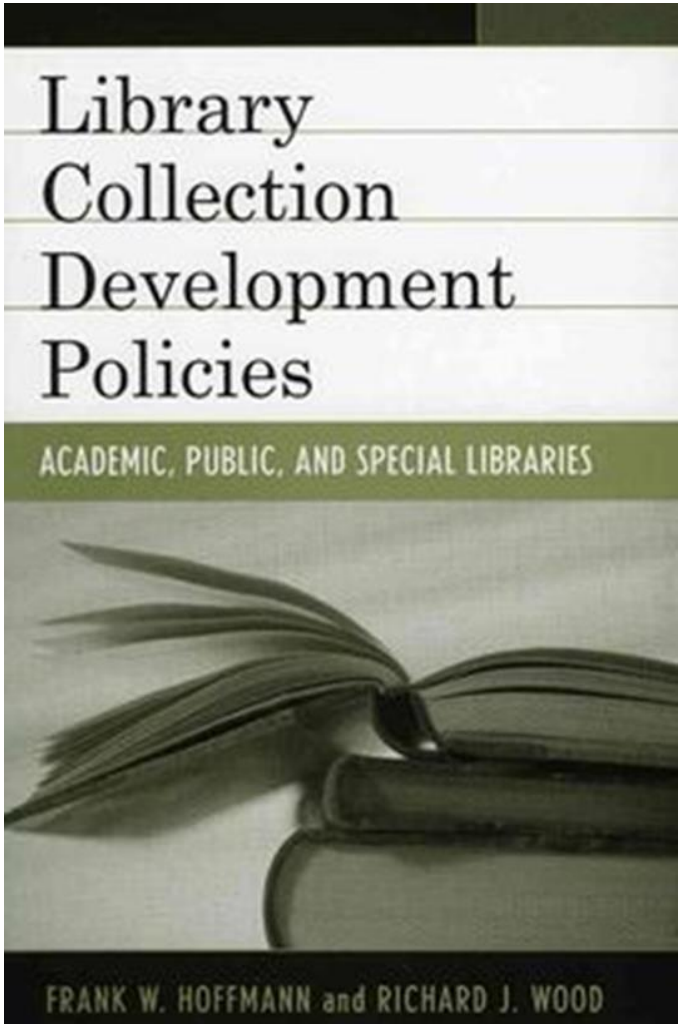
http://royalsociety.org/uploadedFiles/Royal_Society_Content/Influencing_Policy/Reports/2011-03-28-Knowledge-networks-nations.pdf

Collecting shifts

- Big deal: burden or blessing?
- Patron Driven Acquisition models
- E-Books on the rise
- Open Access
- Large-Scale Digital Collections, eg Google Books, Hathi Trust, Internet Archive
- New resource models – research data and datasets

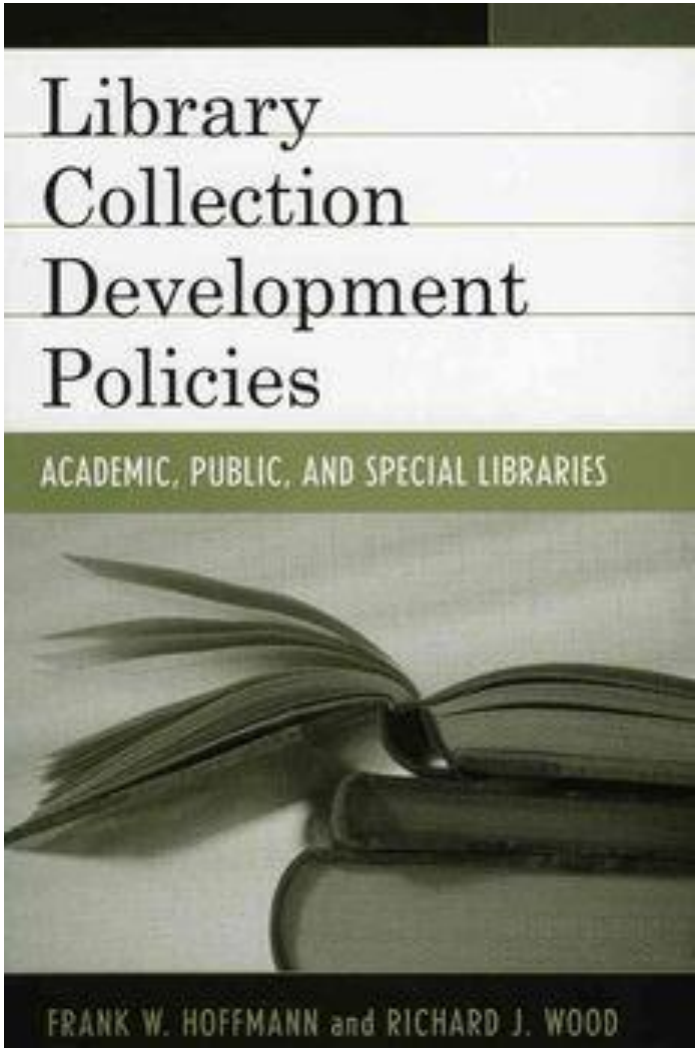
Collection development policies

- Link to University and Library planning and priorities
- Frames library decision-making in context of research and teaching priorities
- Helps set faculty expectations
- Informs librarian selections
- Supports budget decisions - allocations and reductions
- Should be dynamic



Broad principles

- Defines a balance between teaching and research
- Defines collection % spend
- Defines subscriptions % spend
- Identifies preferred format(s)
- Provides collection assessment guidelines
- Solutions for low usage
- Selection tools and decision making
- Collection maintenance guidelines
- Document delivery parameters
- Collaborative activities



Collection Development

Collection Development Policy

http://lib.hku.hk/cd/policies/cdp.html

Table of Contents

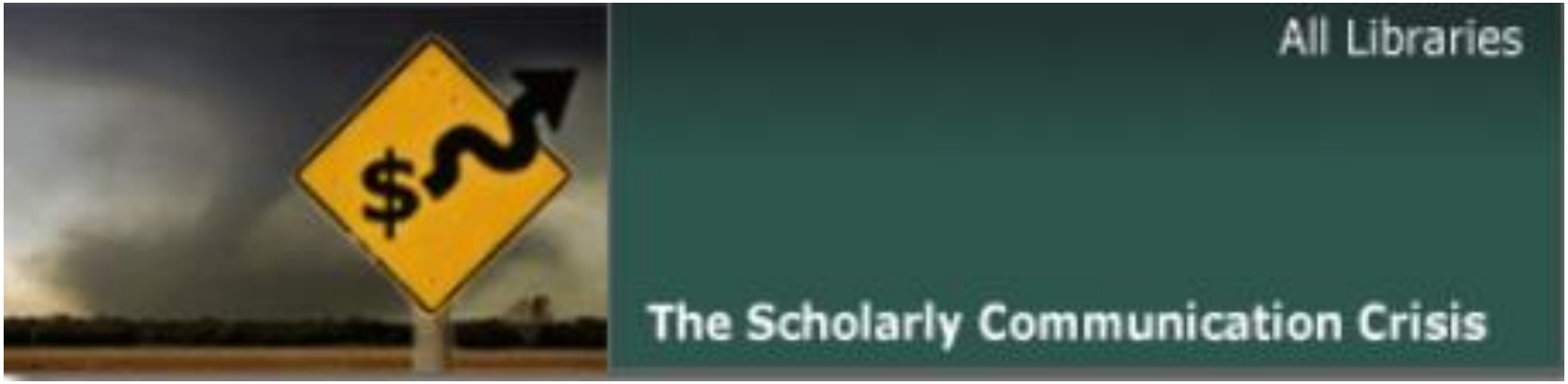
Disciplinary approach

- Subject breakdown - by classification/national codes
- Purpose of collection
- Notable strengths
- Scope of current activity
- Languages, geography, chronology, formats, special considerations

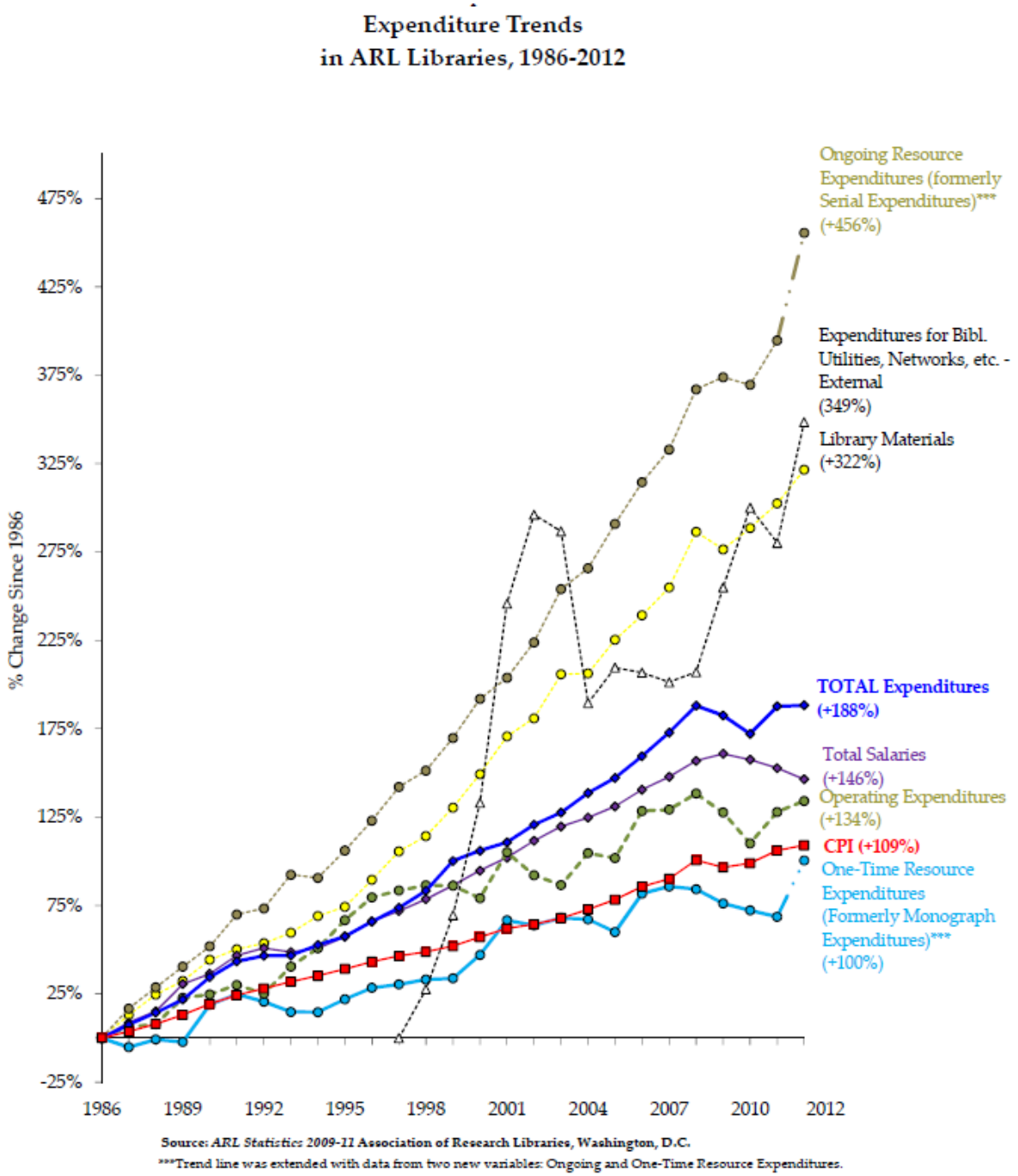
Budgets

- Sources of funds
- Allocations
- Special funding
- Costs of collection maintenance
- Costs of document delivery

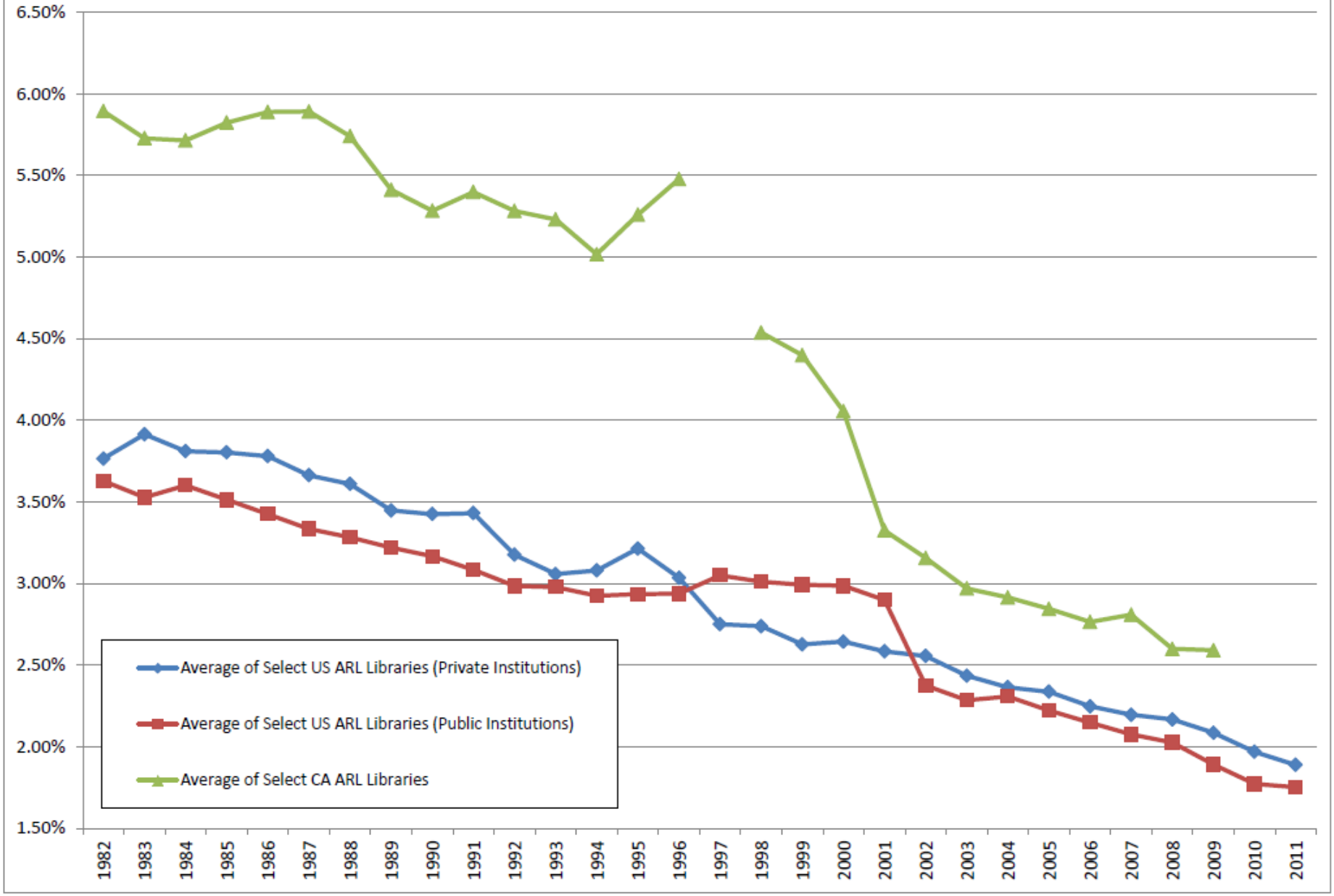
But wait, there is a **crisis**!!



Rising Journal Costs Inspiring Calls for Alternative Publishing Models



Library Expenditure as % of Total University Expenditure



ARL

Are rising (journal) prices justified?

Librarians

- Price increases greater than budget uplift
- Big deals limit ability to cancel titles
- Books are sacrificed for journals
- Costs would be lower in a not-for-profit model
- Publishers own copyright
- ‘Our academics did the work - why should we pay (so much)?’

Support open access

Publishers

- Great increase in research output
- Cost per download falling
- Big deals offer wider access at discount
- e-journal transition required massive investment
- ‘We will try open access if we can cover costs’

Find new sources of funds

The big deal for librarians

- Access to vast numbers of titles
- Bundles bought on basis of package value - titles, downloads etc - than on assessment of individual title quality
- Harder to select or cancel individual titles
- Journal brands replaced by package brands

The big deal for clients

- Access to vast quantities of content
- Access to deep archives
- Wider dissemination of publications
- Search and discovery tools - eg Google Scholar and Summon - taking people direct to article
- Clients expect sophisticated data mining tools

The big deal for publishers

- Economies of scale in the big few making it hard for smaller publishers to compete
- Only the big few can afford to develop sophisticated services
- Bundling has allowed publishers to drop major price increases for specific titles for incremental increases on the bundle
- This is justified often by quantity rather than quality

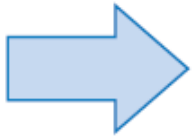
Moving Beyond the "Big Deal"

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 inter-library 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 on-demand 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

Source: Education Advisory Board interviews and analysis.

Library rejects nondisclosure clauses in licenses

Cornell University Library will no longer sign contracts with publishers that include confidentiality agreements.

These nondisclosure agreements (NDAs) typically forbid libraries from revealing the price and terms of their purchases of licensed resources like journal subscriptions and databases.

"Libraries should be able to talk to each other about the details of these contracts. It's as simple as that," said Anne R. Kenney, Carl A. Kroch University Librarian. "When contracts are kept secret, institutions cannot negotiate effectively."

“Collection Size Rapidly Losing Importance”

- Even the wealthiest academic libraries are abandoning the “collection arms race” as the value of physical resources declines. Increasingly, libraries must adapt to a world in which providing access to—rather than ownership of—scholarly resources is their primary role.
    - **Redefining the Academic Library** *Managing the Migration to Digital Information Services*

Use of print collections

Pittsburgh study 1979

40% of collection never circulates

If a book isn't borrowed during first 6 years, only 2% chance it will ever be used

13% Average circulation from open shelf collections

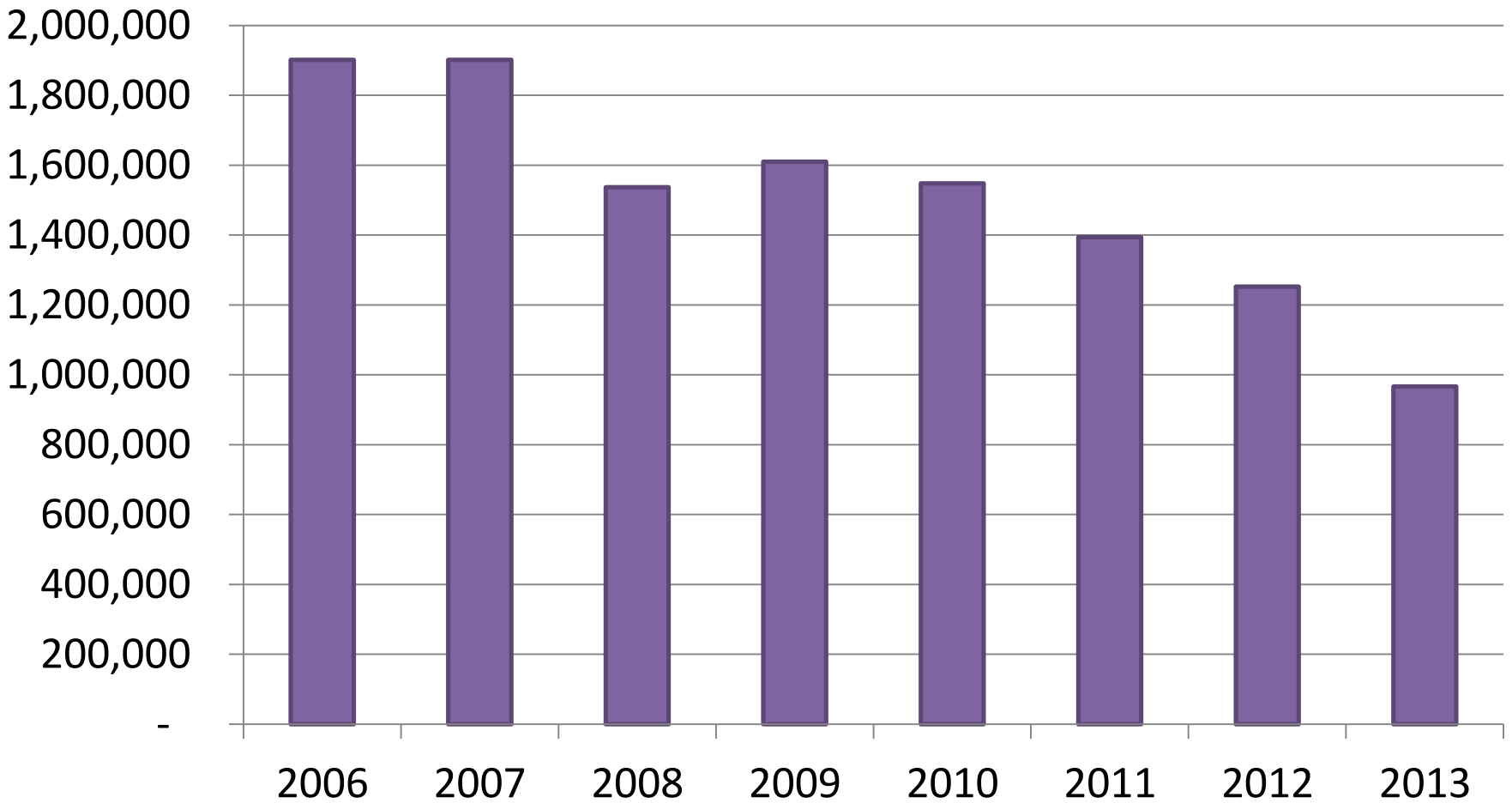
Cornell study 2010

55% of books purchased since 1990 never borrowed

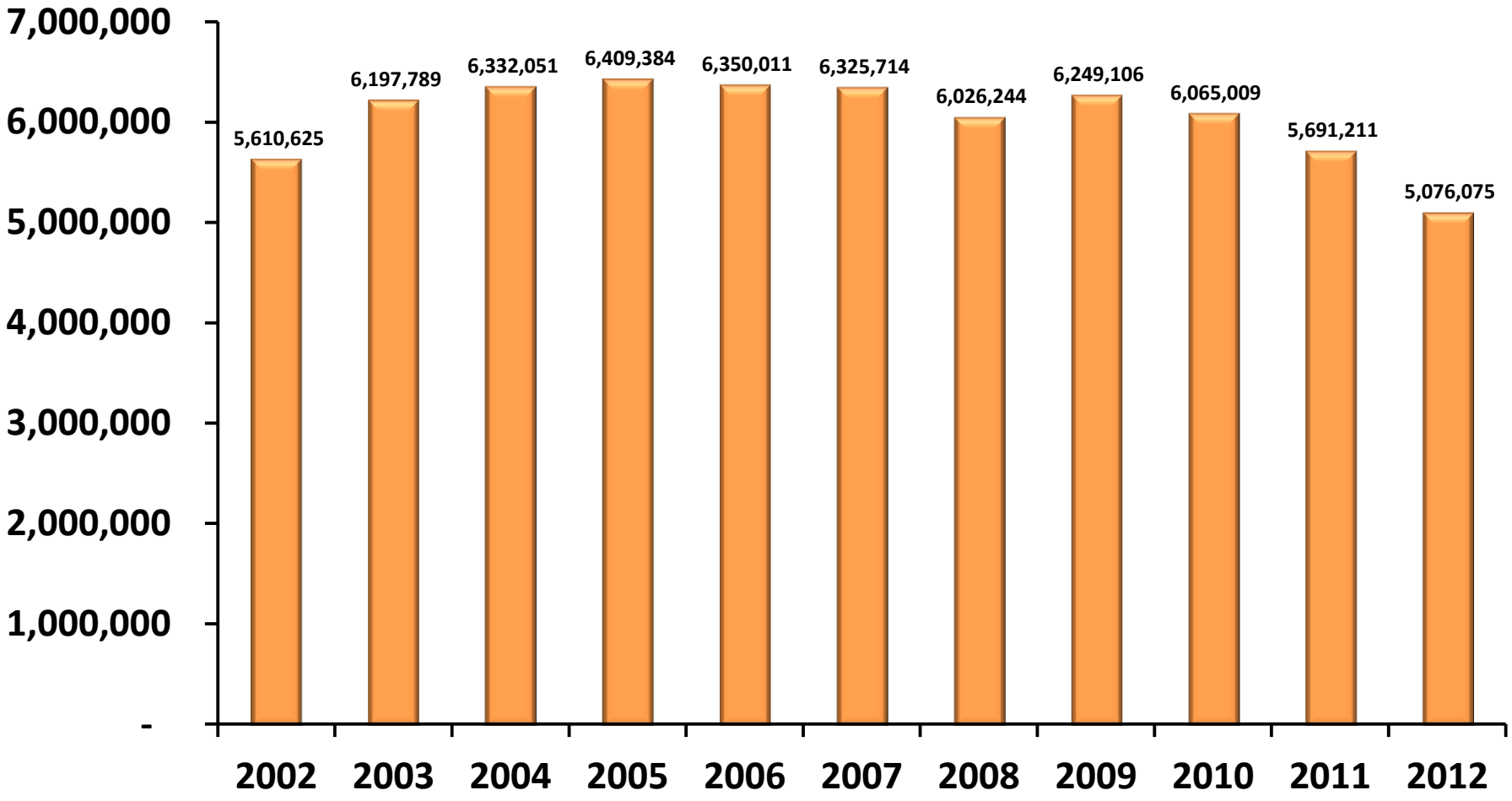
65% of books purchased in 2001 hadn't been borrowed

1% Average circulation from high density collections

Use of *Print* Materials: HKU

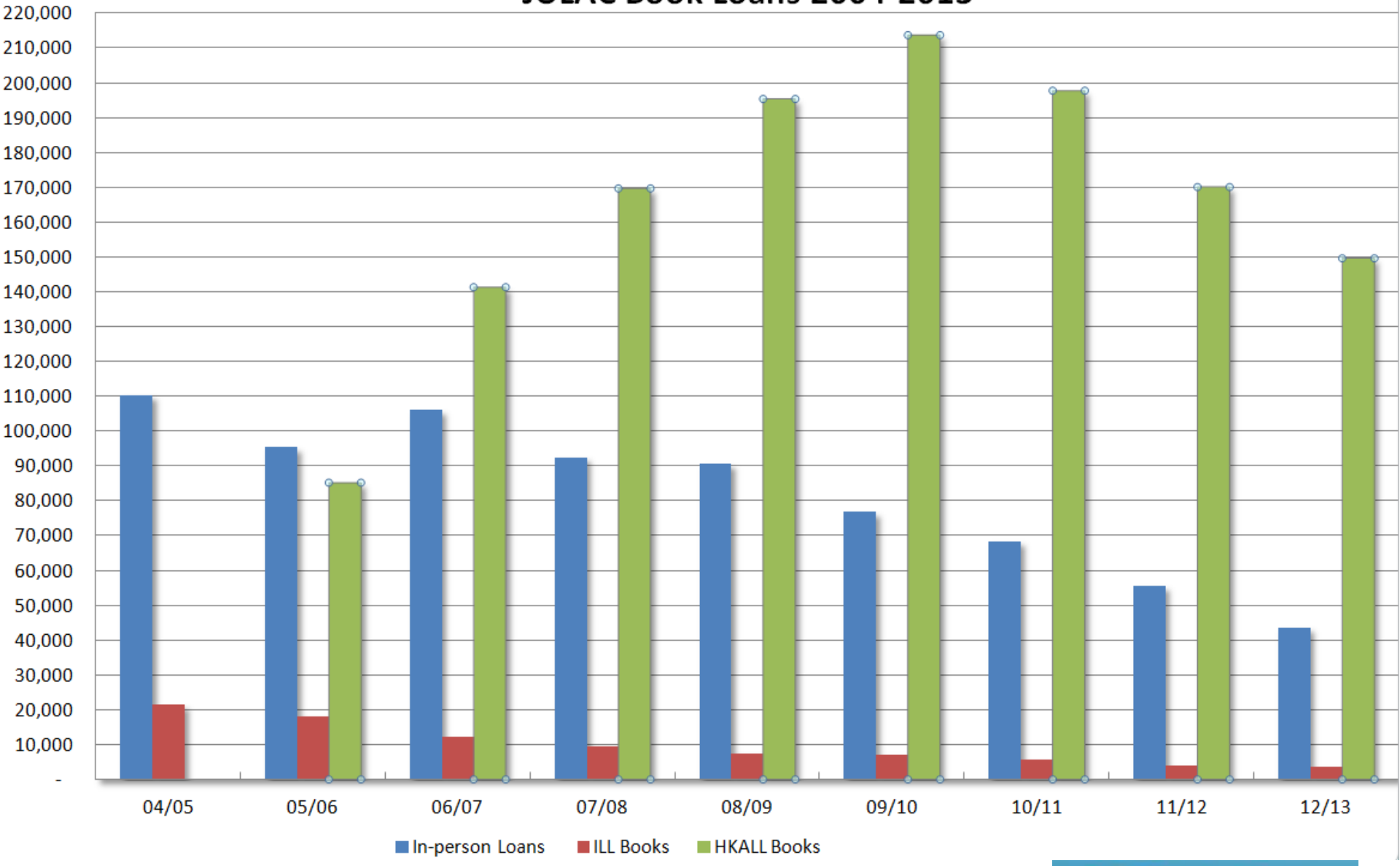


Hong Kong JULAC Libraries
Total Circulation Transactions



JULAC
香港特別行政區大學圖書館長聯席會
Joint University Librarians Advisory Committee

JULAC Book Loans 2004-2013



JULAC
香港特別行政區大學圖書館長聯席會
Joint University Librarians Advisory Committee

Library activities down

Annual use

Research specific reference book

81% (2005) ▶ 56% (2010) — 31% DECREASE

Homework/study

80% (2005) ▶ 66% (2010) — 18% DECREASE

Get copies of articles/journals

64% (2005) ▶ 50% (2010) — 22% DECREASE

Get assistance with research

64% (2005) ▶ 51% (2010) — 20% DECREASE

Use online databases

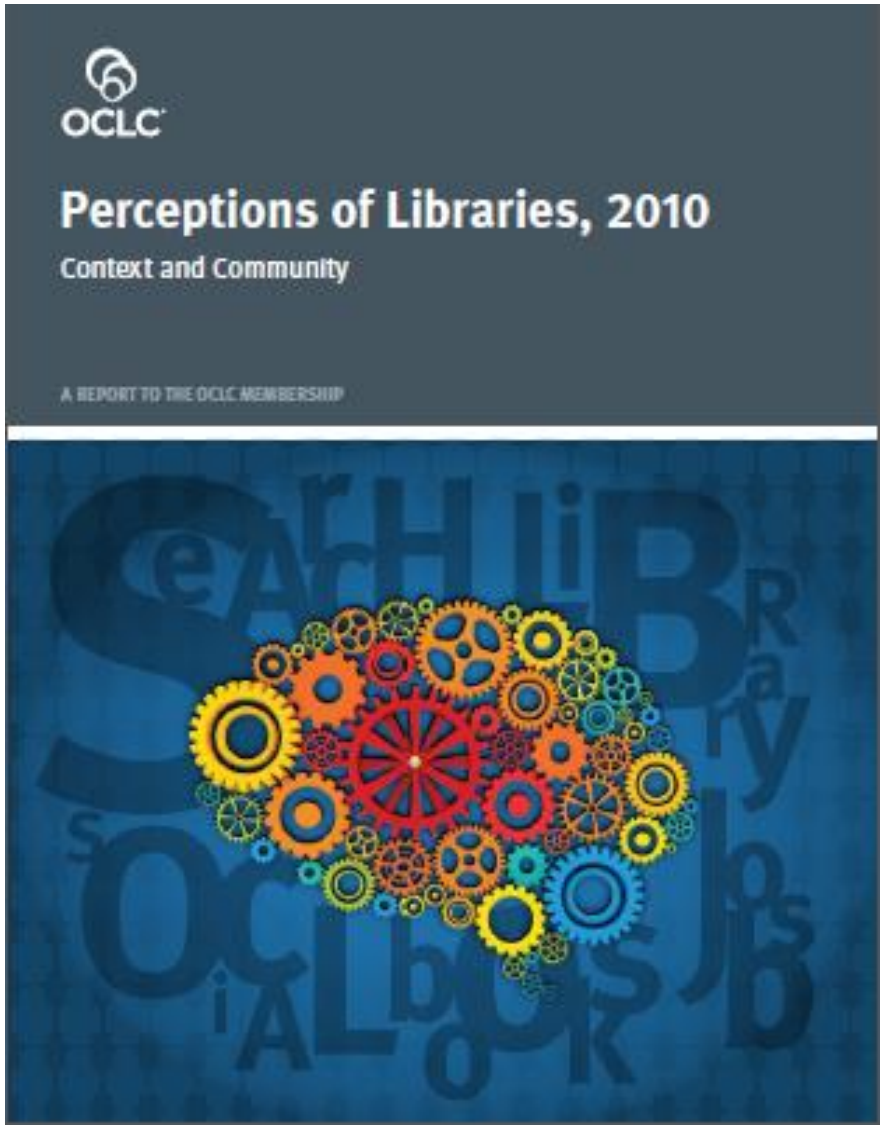
68% (2005) ▶ 59% (2010) — 13% DECREASE

Borrow print books

66% (2005) ▶ 60% (2010) — 9% DECREASE

Leisure reading

52% (2005) ▶ 48% (2010) — 8% DECREASE



From Ownership to Access

Reducing Reliance on the Local Print Collection

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

Source: Education Advisory Board interviews and analysis.

From “Just-in-Case” to “Just-in-Time”

“Just-in-Case”

- Approval plans
- Librarian selection
- Faculty selection
- Publisher “slips”

“Just-in-Time”

- Patron Driven Acquisition
- Pay per view
- Rentals
- Patron (monthly) subscriptions

Collections and collection building

E-Book Limitations

- *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
    - Source: Education Advisory Board interviews and analysis.

INSIDE HIGHER ED

License to Loan

March 31, 2014

By Carl Straumsheim

Libraries accept licensing agreements -- and whatever restrictions that come with them -- "at our peril," the statement reads. By signing agreements that limit how content may be shared, "we turn our backs on a great strength of the academy -- the ability to build complementary collections and share them in good faith with researchers and the community of readers."

Library directors at 66 liberal arts colleges on Friday called for academic libraries to reject licensing agreements with publishers that impose restrictions on how ebooks can be accessed and shared.

In a statement released by the Oberlin Group, a consortium of 80 liberal arts college libraries, the directors point to the "ecosystem of sharing" that academic libraries at small colleges depend on to plug gaps in the resources they offer -- services such as interlibrary loans, for example.

Patron Driven Acquisition (PDA)

- ebook records loaded in library catalogue
- Users see the ebooks and can access them even though the library has not purchased them
- The library pays the vendor only when patrons use an ebook.

Exercise

- What are some of the issues/problems and possible solutions to this form of purchasing?

- Discuss in your group and provide some responses to feedback to the whole group.

Lessons learned from 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 well rounded and diverse, but unpredictable

Concern:

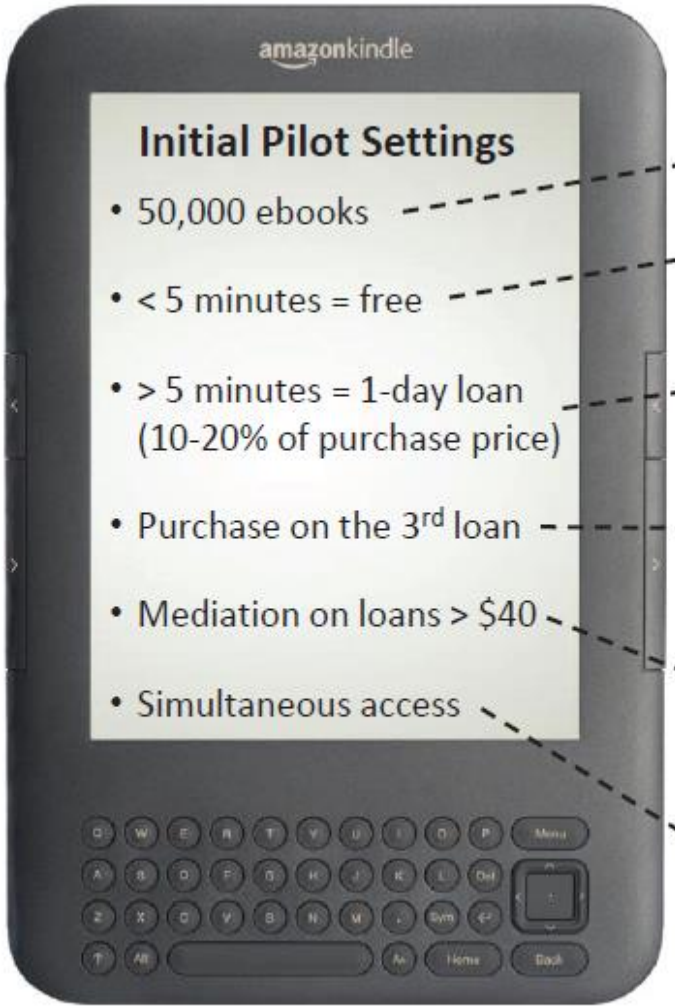
"We'll have a shallow, narrow collection"
(*The Barnes & Noble Problem*)

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

Source: "The E-Reader Effect," *Inside Higher Ed*, June 1, 2011; Education Advisory Board interviews and analysis.



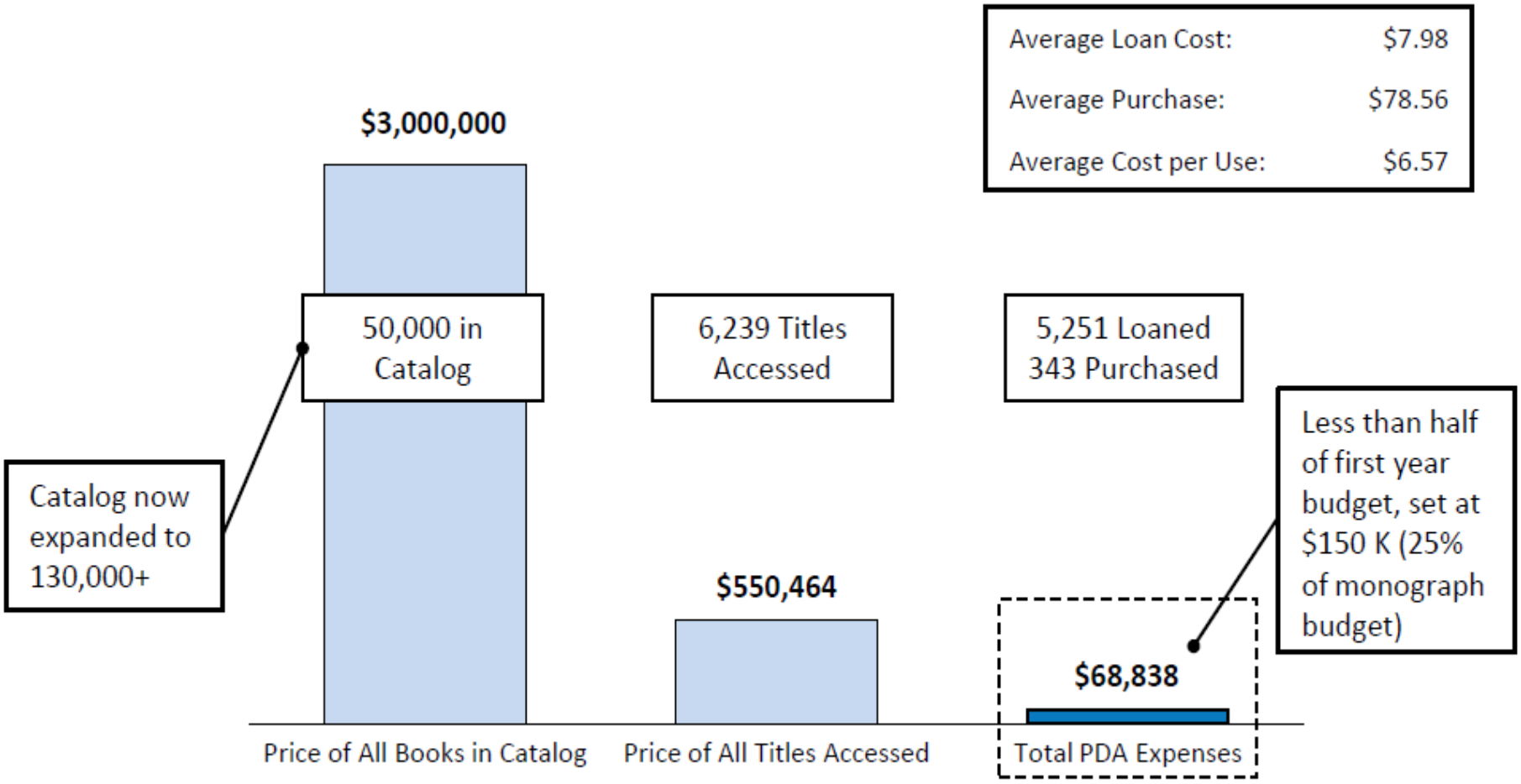
Grand Valley State University

E·B·L Ebook Library

- Titles loaded into catalog
- Avoid paying for brief browsing
- Most users spend only 5 to 15 minutes in a book, and few books are used more than 3 times
- Books used more than 3 times are more likely to be widely popular
  - *Increased to 5 uses after analysis of savings threshold*
- Avoid overly expensive purchases
  - *Removed limit and mediation; cost savings not worth delay / oversight*
- "Non-Linear Lending" allows unlimited simultaneous access to all ebooks

Source: Education Advisory Board interviews and analysis.

Results



Source: Education Advisory Board interviews and analysis.

Unlocking access?

Early influences

Currently, access to research is restricted and the means to gain access are determined by a market in which a small number of publishers have a dominant position (2003)

http://www.wellcome.ac.uk/assets/wtd003182.pdf

It is not for either publishers or academics to decide who should, and who should not, be allowed to read scientific journal articles. It is in society's interest that public understanding of science should increase. Increased public access to research findings should be encouraged by publishers, academics and Government alike.


House of Commons
Science and Technology Committee

Scientific Publications: Free for all?

Tenth Report of Session 2003-04

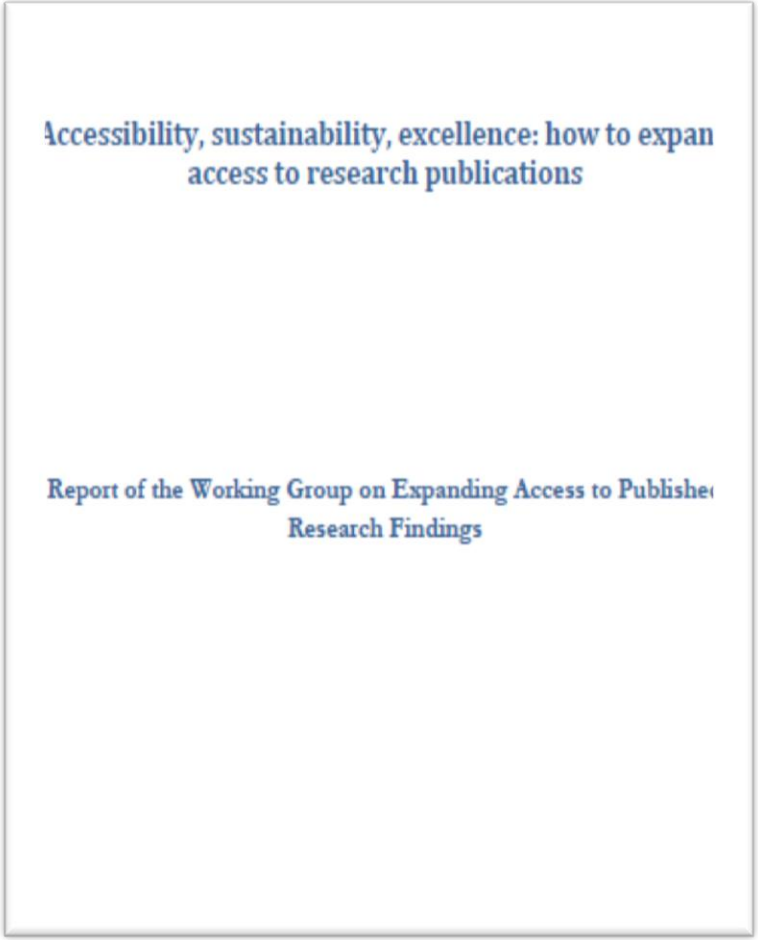
Volume I: Report

HC 399-I

http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/399.pdf

Finch Report (2012)

- Research Councils and other public sector bodies funding research in the UK should establish more effective and flexible arrangements to meet the costs of publishing in open access and hybrid journals;



http://www.researchinfonet.org/publish/finch/

Open access: Gold

Gold OA is achieved by the publication of peer-reviewed articles either in (i) Open Access journals or as (ii) individual (OA) articles in subscription-based journals.

Recent Research | Most Viewed

A selection of articles published in the last 2 days

Computed Tomography Imaging of Primary Lung Cancer in Mice Using a Liposomal-Iodinated Contrast Agent

Topological Analysis of Small Leucine-Rich Repeat Proteoglycan Nyctalopin

Annotation of the *M. tuberculosis* Hypothetical Orfeome: Adding Functional Information to More than Half of the Uncharacterized Proteins

Development of a Unique Small Molecule Modulator of CXCR4

Olive Baboons Compare to Apes in the Primate Cognition Test Battery

Sequence Alignment: Degenerate, Multiplex Primer and Probe Design Using K-mer Matching Instead of Alignments

Structural Insights into TIR Domain Specificity of the Bridging Adaptor Mal in TLR4 Signaling

Metastasis of Neuroendocrine Tumors Are Characterized by Increased Cell Proliferation and Reduced Expression of the ATM Gene

The Effect of Interocular Phase Difference on Perceived Contrast

A Membrane Fusion Protein αSNAP Is a Novel Regulator of Epithelial Apical Junctions

Browse all recently published articles

In the News

In the News

- Second language processing shows increased native-like neural responses after months of no exposure
- Increased sleep fragmentation leads to impaired off-line consolidation of

Featured Image

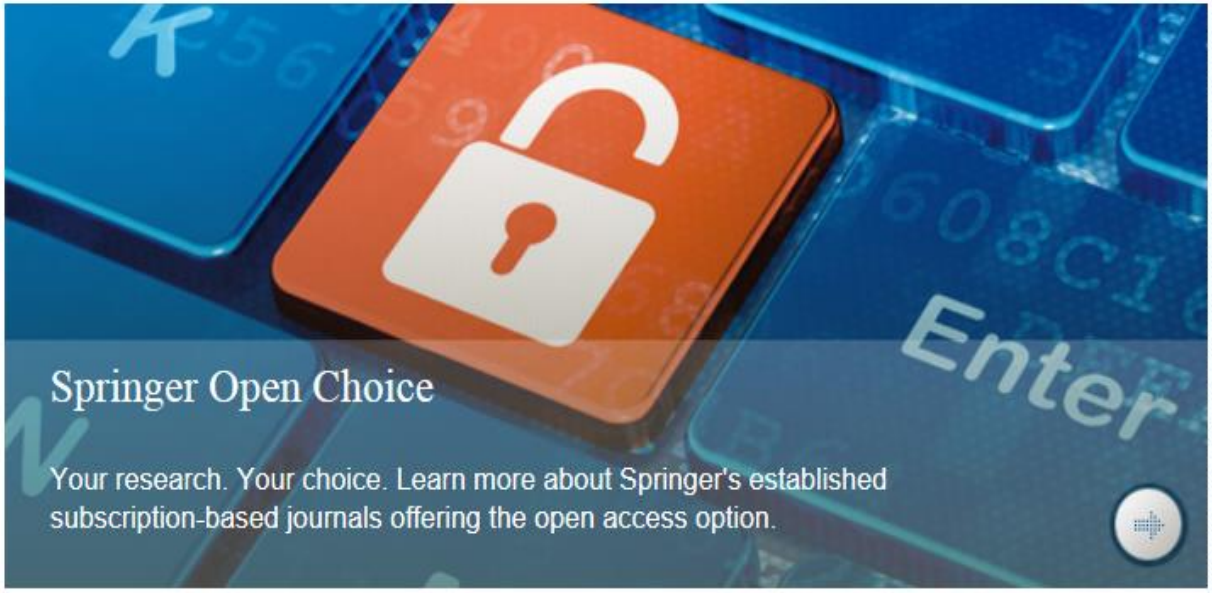
PLoS ONE is an interactive open-access journal for the communication of all peer-reviewed scientific and medical research. Visit everyONE—the *PLoS ONE* community blog—for the latest updates (subscribe).

What the community is saying

adamkriesberg PLos ONE increases exposure – Saw this article while cruising BBCNews today... tmblr.co/ZiJeOyJ0oGmc
about 1 minute ago · reply · retweet · favorite

wahwahnyc Neurofibromatosis type 1 and "elephant man's" disease: the confusion persists: an ethnographic study | PLoS One ncbi.nlm.nih.gov/pubmed/21347399

Open Access Journals



Springer Open Choice – Your Research. Your Choice.

Springer offers an open access program called Open Choice. For the majority of our readership and highly respected subscription-based journals, Open Choice allows authors to decide how their articles are published.

When you choose open access publication, your readers' benefits are

- Your article is freely available online.
- Easy compliance with open access mandates.
- Final version can be re-used and immediately deposited in any repository.
- You retain the copyright.
- Automatic export triggered to PubMed Central/Europe PubMed Central (PMC) *

Subscription-based Journals

OPEN ACCESS AT SPRINGER

Springer Open Choice

Your Research. Your Choice. Publish open access in our established subscription-based journals.

SpringerOpen

Our portfolio of peer-reviewed, fully open access journals and books across all disciplines.

BioMed Central

The open access publisher with a portfolio of over 250 journals in biology and medicine.

Authors' Rights

Your research. Your rights. All you need to know about open access compliance and self-archiving.

Open Access Funding

Find out about available funding from institutions and funders pro...

DOWNLOADS

- Open Access White Paper (pdf, 230 kB)
- SpringerOpen Brochure (pdf, 1.8 MB)
- SpringerPlus Datasheet (pdf, 101 kB)
- SpringerOpen Books Datasheet (pdf, 157 k...

Open access: Green

- Green OA is achieved by depositing a version of a peer-reviewed article, which is available for purchase in its version of record form, in an **online repository or archive**

The University of Hong Kong

The HKU Scholars Hub 香港大學學術庫

HELP

- HKU LOGIN
- GUEST LOGIN

CENTENARY

Home | Researchers | Publications | Theses | Grants | Patents | Community Service | 繁 · 簡

The HKU Scholars Hub is the institutional repository of The University of Hong Kong. As a key vehicle of HKU's Knowledge Exchange Initiative, The Hub strives to make HKU authors and their research very visible, with the goal of increasing all forms of collaboration.

Do you want to see your publications in the Hub?

Please CONTACT US

QUICK SEARCH OF THE HUB

Search the author, title, abstract and series fields.

SEARCH

FEATURED SCHOLAR

Professor Cheung, ASC

- Professor

Research Interests:

- High resolution [illegible] and [illegible] of small [illegible]
- Ab initio Calculation of metal containing radicals

MORE

HUB NEWS

Feb 2014: Added course lists.

Feb 2014: [illegible] No. 1 [illegible] according to [illegible].

Jan 2014: Upgraded to DSpace 3.2 with DSpace-CRIS.

Sep 2013: Sage Open. Pre-paid article processing charges for HKU authors!

More

RELEVANT LINKS

- [illegible] Authors: Open Access Publishing
- Usage Stats & Downloads
- HKU most cited articles in Scopus
- HKU research on Web of Science
- HKU Research & Scholarship
- HKU Libraries OA Policy
- HK Open Access Committee
- Open Access Tracking Project

Institutional Repository

Cornell University Library

We gratefully acknowledge supporting institutions

arXiv.org

Login

Search or Article-id (Help | Advanced search) All papers Go!

Open access to 799,633 e-prints in Physics, Mathematics, Computer Science, Quantitative Biology, Quantitative Finance and Statistics

Subject search and browse: Physics Search Form Interface Catchup

19 Oct 2012: arXiv Holiday Schedule
29 Aug 2012: Simons Foundation funds new arXiv sustainability model
See cumulative "What's New" pages. Read robots beware before attempting any automated download

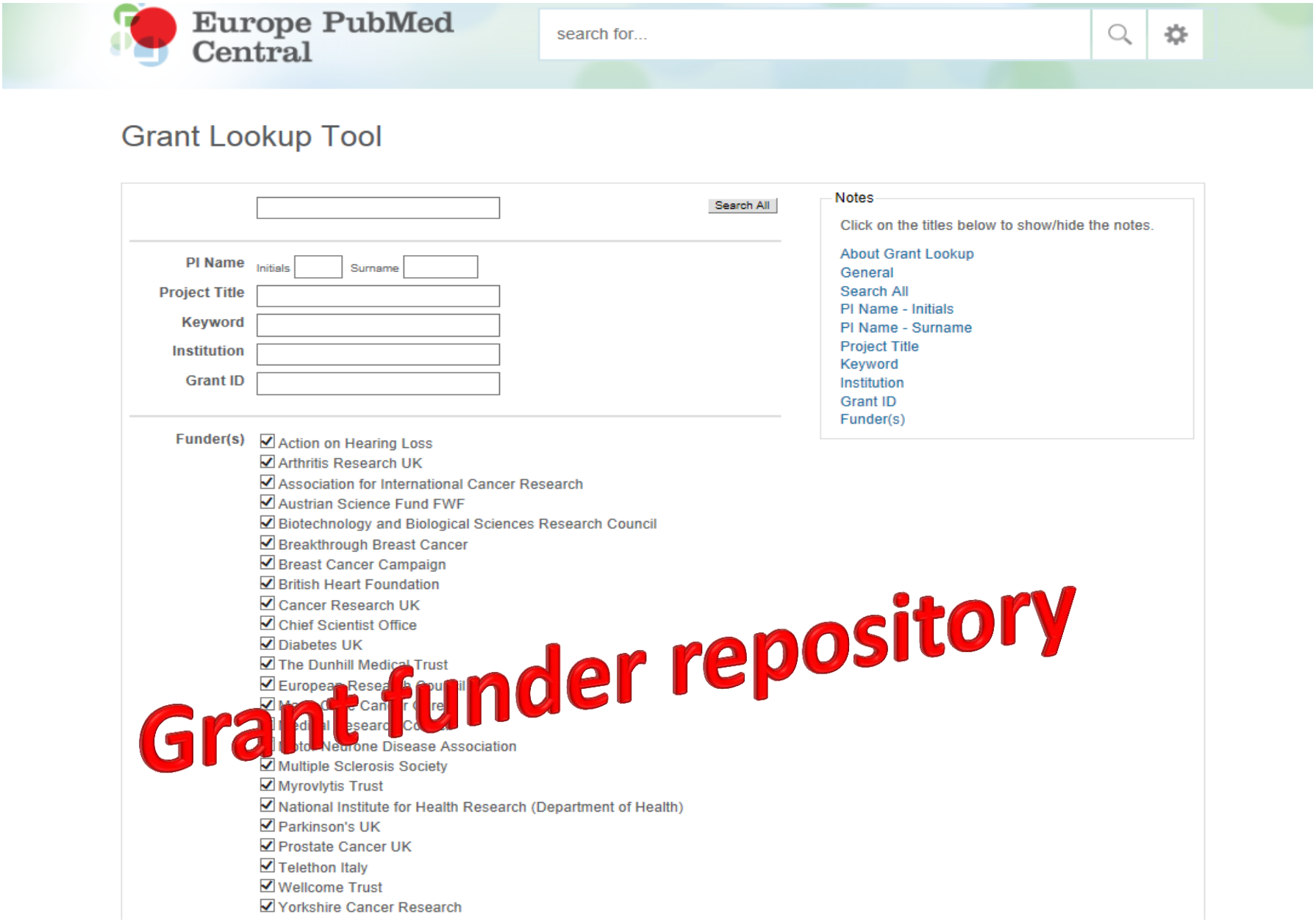
Physics

- Astrophysics (**astro-ph** new, recent, find)
  includes: Cosmology and Extragalactic Astrophysics; Earth and Planetary Astrophysics; Galaxy Astrophysics; High Energy Astrophysical Phenomena; Instrumentation and Methods for Astrophysics; Solar and Stellar Astrophysics
- Condensed Matter (**cond-mat** new, recent, find)
  includes: Disordered Systems and Neural Networks; Materials Science; Mesoscale and Nanoscale Physics; Other Condensed Matter; Quantum Gases; Soft Condensed Matter; Statistical Mechanics; Strongly Correlated Electrons; Superconductivity
- General Relativity and Quantum Cosmology (**gr-qc** new, recent, find)
- High Energy Physics - Experiment (**hep-ex** new, recent, find)
- High Energy Physics - Lattice (**hep-lat** new, recent, find)
- High Energy Physics - Phenomenology (**hep-ph** new, recent, find)
- High Energy Physics - Theory (**hep-th** new, recent, find)
- Mathematical Physics (**math-ph** new, recent, find)
- Nuclear Experiment (**nucl-ex** new, recent, find)
- Nuclear Theory (**nucl-th** new, recent, find)
- Physics (**physics** new, recent, find)
  includes: Accelerator Physics; Atmospheric and Oceanic Physics; Atomic Physics; Atomic and Molecular Clusters; Biological Physics; Chemical Physics; Classical Physics; Computational Physics; Data Analysis, Statistics and Probability; Fluid Dynamics; General Physics; Geophysics; History and Philosophy of Physics; Instrumentation and Detectors; Medical Physics; Optics; Physics Education; Physics and Society; Plasma Physics; Popular Physics; Space Physics
- Quantum Physics (**quant-ph** new, recent, find)

Disciplinary repository

Mathematics

- Mathematics (**math** new, recent, find)
  includes (see detailed description): Algebraic Geometry; Algebraic Topology; Analysis of PDEs; Category Theory; Classical Analysis and ODEs; Combinatorics; Commutative Algebra; Complex Variables; Differential Geometry; Dynamical Systems; Functional Analysis; General Mathematics; General Topology; Geometric Topology; Group Theory; History and Overview; Information Theory; K-


Europe PubMed Central
search for...
Grant Lookup Tool
Search All
PI Name
Initials
Surname
Project Title
Keyword
Institution
Grant ID
Funder(s)
Action on Hearing Loss
Arthritis Research UK
Association for International Cancer Research
Austrian Science Fund FWF
Biotechnology and Biological Sciences Research Council
Breakthrough Breast Cancer
Breast Cancer Campaign
British Heart Foundation
Cancer Research UK
Chief Scientist Office
Diabetes UK
The Dunhill Medical Trust
Multiple Sclerosis Society
Myrovlytis Trust
National Institute for Health Research (Department of Health)
Parkinson's UK
Prostate Cancer UK
Telethon Italy
Wellcome Trust
Yorkshire Cancer Research
Notes
Click on the titles below to show/hide the notes.
About Grant Lookup
General
Search All
PI Name - Initials
PI Name - Surname
Project Title
Keyword
Institution
Grant ID
Funder(s)
Grant funder repository

The University of Hong Kong

The HKU Scholars Hub 香港大學學術庫

HELP

- HKU LOGIN
- GUEST LOGIN

HKU 100 CENTENARY

The HKU Scholars Hub is the institutional repository of The University of Hong Kong. As a key vehicle of HKU's Knowledge Exchange Initiative, The Hub strives to make HKU authors and their research very visible, with the goal of increasing all forms of collaboration.

Do you want to see your publications in the Hub?

Please CONTACT US

QUICK SEARCH OF THE HUB

Search the author, title, abstract and series fields.

SEARCH

FEATURED SCHOLAR

Professor Cheung, ASC

- Professor

Research Interests:

- High resolution laser [illegible] and Fourier Transform [illegible] of small molecules
- Ab initio Calculation of metal containing radicals

MORE

HUB NEWS

Feb 2014: Added course lists.

Feb 2014: The Hub [illegible] in Asia, according to [illegible]

Jan 2014: Upgraded to DSpace 3.2 with DSpace-CRIS.

Sep 2013: Sage Open. Pre-paid article processing charges for HKU authors!

More

RELEVANT LINKS

- [illegible]
- [illegible]thors: Open Access Publishing
- Usage Stats & Downloads
- HKU most cited articles in Scopus
- HKU research on Web of Science
- HKU Research & Scholarship
- HKU Libraries OA Policy
- HK Open Access Committee
- Open Access Tracking Project

Institutional Repository

File Download

Content.pdf

Contact the author(s) ?

Links for fulltext
(May Require Subscription)

- **Publisher Website:** 10.1063/1.3663619
- **Scopus:** eid_2-s2.0-82555164630
- **PMID:** 22128936
- **WOS:** WOS:000297944600019

Supplementary

Citations:

· Scopus: 3

Item Statistics (The Hub)

Appears in Collections:

· Chemistry: Journal/Magazine Articles

Article: Electronic transitions of cobalt monoboride

Basic View | Metadata View | XML View

Title Electronic transitions of cobalt monoboride

Authors
Ng, YW[1]
Pang, HF[1]
Cheung, ASC[1]

Issue Date 2011

Publisher American Institute of Physics. The Journal's web site is located at http://jcp.aip.org/jcp/staff.jsp

Citation Journal of Chemical Physics, 2011, v. 135 n. 20, article no. 204308 *[How to Cite?]*
DOI: http://dx.doi.org/10.1063/1.3663619

Abstract Electronic transition spectrum of cobalt monoboride (CoB) in the visible region between 495 and 560 nm has been observed and analyzed using laser-induced fluorescence spectroscopy. CoB molecule was produced by the reaction of laser-ablated cobalt atom and diborane (B 2H 6) seeded in argon. Fifteen vibrational bands with resolved rotational structure have been recorded, which included transitions of both Co 10B and Co 11B isotopic species. Our analysis showed that the observed transition bands are ΔΩ=0 transitions with Ω″ = 2 and Ω″ = 3 lower states. Four transition systems have been assigned, namely, the [18.1] 3Π 2-X 3Δ 2, the [18.3]φ 3φ 3-X 3Δ 3, the [18.6]3-X 3Δ 3, and the [19.0]2-X 3Δ 2 systems. The bond length, r o, of the X 3Δ 3 state of CoB is determined to be 1.705 Å. The observed rotational lines showed unresolved hyperfine structure arising from the nuclei, which conforms to the Hunds case (a β) coupling scheme. This work represents the first experimental investigation of the CoB spectrum. © 2011 American Institute of Physics.

ISSN 0021-9606
2012 Impact Factor: 3.164
2012 SCImago Journal Rankings: 1.321

ISI Accession Number ID WOS:000297944600019

Funding Agency	Grant Number
Research Grants Council of the Hong Kong Special Administrative Region, China	HKU 701008

Funding Information:
The work described here was supported by a grant from the Research Grants Council of the Hong Kong Special

Electronic transitions of cobalt monoboride

Y. W. Ng, H. F. Pang, and A. S.-C. Cheung[a)]
Department of Chemistry, The University of Hong Kong, Pokfulam Road, Hong Kong

(Received 21 August 2011; accepted 2 November 2011; published online 30 November 2011)

Electronic transition spectrum of cobalt monoboride (CoB) in the visible region between 495 and 560 nm has been observed and analyzed using laser-induced fluorescence spectroscopy. CoB molecule was produced by the reaction of laser-ablated cobalt atom and diborane (B_2H_6) seeded in argon. Fifteen vibrational bands with resolved rotational structure have been recorded, which included transitions of both $Co^{10}B$ and $Co^{11}B$ isotopic species. Our analysis showed that the observed transition bands are $\Delta\Omega = 0$ transitions with $\Omega'' = 2$ and $\Omega'' = 3$ lower states. Four transition systems have been assigned, namely, the $[18.1]^3\Pi_2$–$X^3\Delta_2$, the $[18.3]^3\Phi_3$–$X^3\Delta_3$, the [18.6]3– $X^3\Delta_3$, and the $[19.0]2$–$X^3\Delta_2$ systems. The bond length, r_o, of the $X^3\Delta_3$ state of CoB is determined to be 1.705 Å. The observed rotational lines showed unresolved hyperfine structure arising from the nuclei, which conforms to the Hund's case (a_β) coupling scheme. This work represents the first experimental investigation of the CoB spectrum. © *2011 American Institute of Physics*. [doi:10.1063/1.3663619]

I. INTRODUCTION

Many transition metal (TM) borides are known catalysts for the hydrogenation of alkenes and alkynes, reduction of nitrogenous functional groups and deoxygenation reactions.[1] Besides, metal borides are also good candidates of compounds possessing remarkable physical properties such as very high conductivity (TiB_2) (Ref. 2) and even superconductivity (MgB_2),[3] and super hardness (ReB_2).[4] Recently, boron nitride nanotubes could be synthesized from zirconium boride (ZrB_2) rod in a nitrogen atmosphere using electric arc discharge.[5] Despite the chemical and physical importance, very little is known about

In this paper, we report the analysis of electronic transitions of the CoB molecule recorded from the products of laser vaporization reactive free jet expansion and laser-induced fluorescence (LIF) spectroscopy in the visible region. Spectra of both $Co^{10}B$ and $Co^{11}B$ isotopes were resolved and recorded. One of the aims in this work is to identify and characterize the ground state of CoB. Electronic configurations giving rise to the observed electronic states have also been examined using a molecular orbital energy level diagram.

AIP | The Journal of Chemical Physics

Electronic transitions of cobalt monoboride

Y. W. Ng[1], H. F. Pang[1] and A. S.-C. Cheung[1,a)]

+ VIEW AFFILIATIONS

a) Author to whom correspondence should be addressed. Electronic mail: hrsccsc@hku.hk. Tel.: (852) 2859 2155 . Fax: (852) 2857 1586.

J. Chem. Phys. **135**, 204308 (2011); http://dx.doi.org/10.1063/1.3663619

Electronic transition spectrum of cobalt monoboride (CoB) in the visible region between 495 and 560 nm has been observed and analyzed using laser-induced fluorescencespectroscopy. CoB molecule was produced by the reaction of laser-ablated cobalt atom and diborane (B_2H_6) seeded in argon. Fifteen vibrational bands with resolved rotational structure were recorded which included transitions of both $Co^{10}B$ and $Co^{11}B$ isotopic species. Our analysis showed that the observed transition bands are $\Delta\Omega = 0$ transitions with $\Omega'' = 2$ and $\Omega' = 3$ lower states. Four transition systems have been assigned, namely, the $[18.1]^3\Pi_2$–$X^3\Delta_2$, the $[18.3]^3\Phi_3$–$X^3\Delta_3$, the [18.6]3– $X^3\Delta_3$, and the [19.0]2–$X^3\Delta_2$ systems. The bond length, r_o, of the $X\,^3\Delta_3$ state of CoB is determined to be 1.705 Å. The observed rotational lines showed unresolved hyperfine structure arising from the nuclei, which conforms to the Hund's case (a_β) coupling scheme. This work represents the first experimental investigation of the CoB spectrum.

THE JOURNAL OF CHEMICAL PHYSICS 135, 204308 (2011)

Electronic transitions of cobalt monoboride

Y. W. Ng, H. F. Pang, and A. S.-C. Cheung[a)]
Department of Chemistry, The University of Hong Kong, Pokfulam Road, Hong Kong

(Received 21 August 2011; accepted 2 November 2011; published online 30 November 2011)

Electronic transition spectrum of cobalt monoboride (CoB) in the visible region between 495 and 560 nm has been observed and analyzed using laser-induced fluorescence spectroscopy. CoB molecule was produced by the reaction of laser-ablated cobalt atom and diborane (B_2H_6) seeded in argon. Fifteen vibrational bands with resolved rotational structure have been recorded, which included transitions of both $Co^{10}B$ and $Co^{11}B$ isotopic species. Our analysis showed that the observed transition bands are $\Delta\Omega = 0$ transitions with $\Omega'' = 2$ and $\Omega'' = 3$ lower states. Four transition systems have been assigned, namely, the $[18.1]^3\Pi_2$–$X^3\Delta_2$, the $[18.3]^3\Phi_3$–$X^3\Delta_3$, the $[18.6]3$– $X^3\Delta_3$, and the $[19.0]2$–$X^3\Delta_2$ systems. The bond length, r_o, of the $X^3\Delta_3$ state of CoB is determined to be 1.705 Å. The observed rotational lines showed unresolved hyperfine structure arising from the nuclei, which conforms to the Hund's case (a_β) coupling scheme. This work represents the first experimental investigation of the CoB spectrum. © *2011 American Institute of Physics*. [doi:10.1063/1.3663619]

I. INTRODUCTION

Many transition metal (TM) borides are known catalysts for the hydrogenation of alkenes and alkynes, reduction of nitrogenous functional groups and deoxygenation reactions.[1] Besides, metal borides are also refractory compounds process remarkable physical properties such as very high c[illegible]ity (TiB_2) (Ref. 2) [illegible] superconductivity (MgB_2), [illegible] super hardness (ReB_2) [illegible] nanotubes [illegible] by the reaction from Zirconium boride (ZrB_2) rod in a nitrogen atmosphere using electric arc discharge.[5] Despite the chemical and physical importance, very little is known about the chemical bonding of this class of boride compounds. Since diatomic TM boride is the simplest building block of the more complicated TM boride compounds, detail knowledge of the characteristic of chemical bonding and electronic structure of this simple system would be useful for understanding large molecules and even their bulk properties.

In this paper, we report the analysis of electronic transitions of the CoB molecule recorded using the technique of laser vaporization/reaction free jet expansion and laser-induced fluorescence (LIF) spectroscopy in the visible region. Spectra of both $Co^{10}B$ and $Co^{11}B$ isotopes were resolved and rotationally analyzed. Efforts were made to identify and characterize the ground state of CoB. Electronic configurations giving rise to the observed electronic states have also been examined using a molecular orbital energy level diagram.

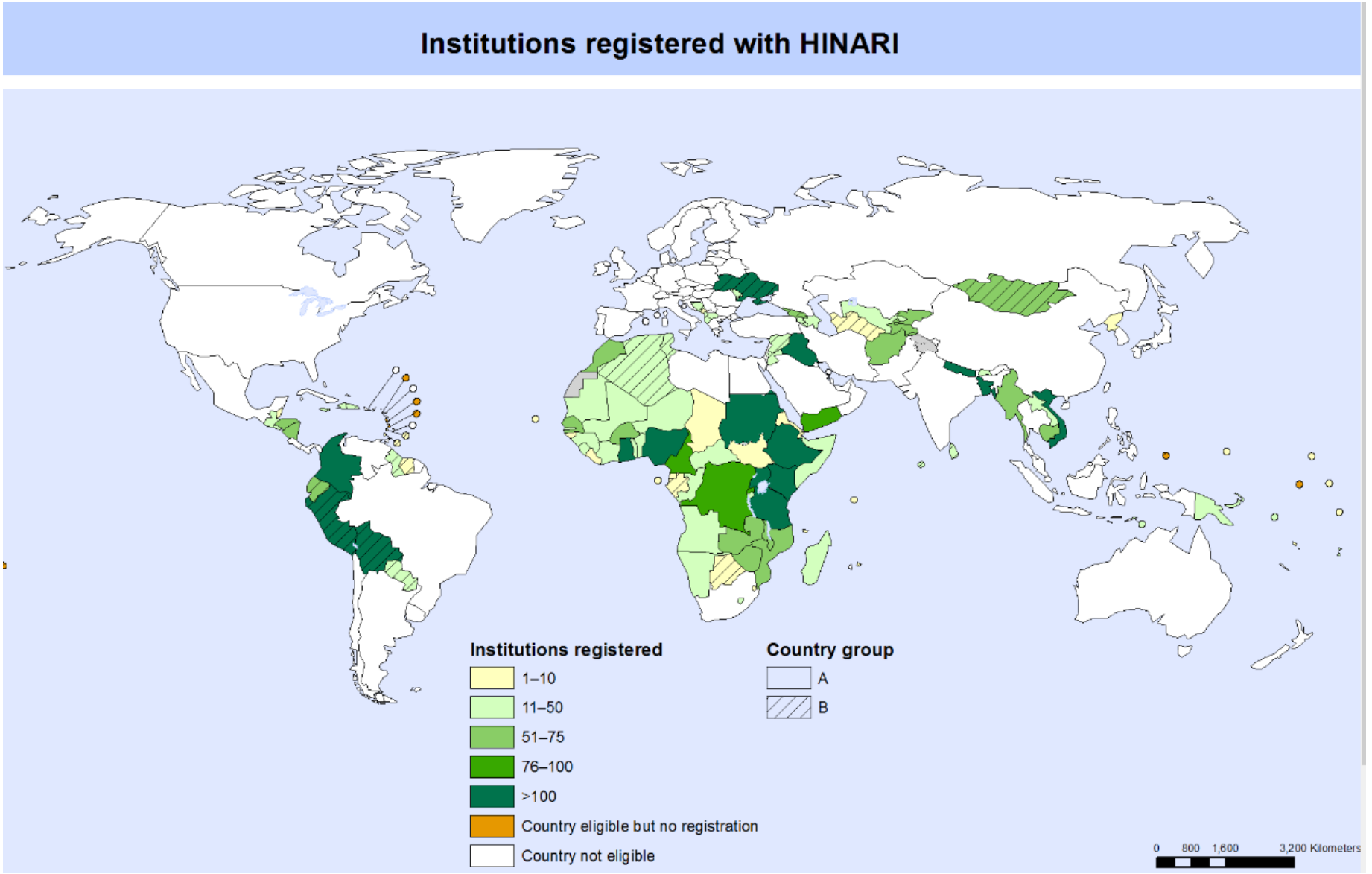
II. EXPERIMENTAL

The apparatus used in the present study has been described in earlier papers.[10,11] Only a brief description of the relevant experimental conditions for obtaining the CoB spectrum is given here. Frequency-doubled Nd:YAG laser pulses with 5–6 mJ, were focused onto the surface of a cobalt rod to

HINARI

- Run by World Health Organisation
- Launched in 2002 in partnership with six major publishers
- Now offers 13,000 journals and 28,800 ebooks in 30 languages
- Available in more than 100 countries and territories
- Eligibility based on: Total GNI (World Bank figures), GNI per capita (World Bank figures), United Nations Least Developed Country (LDCs) List and Human Development Index (HDI).

OA for developing countries



Open Access 2014

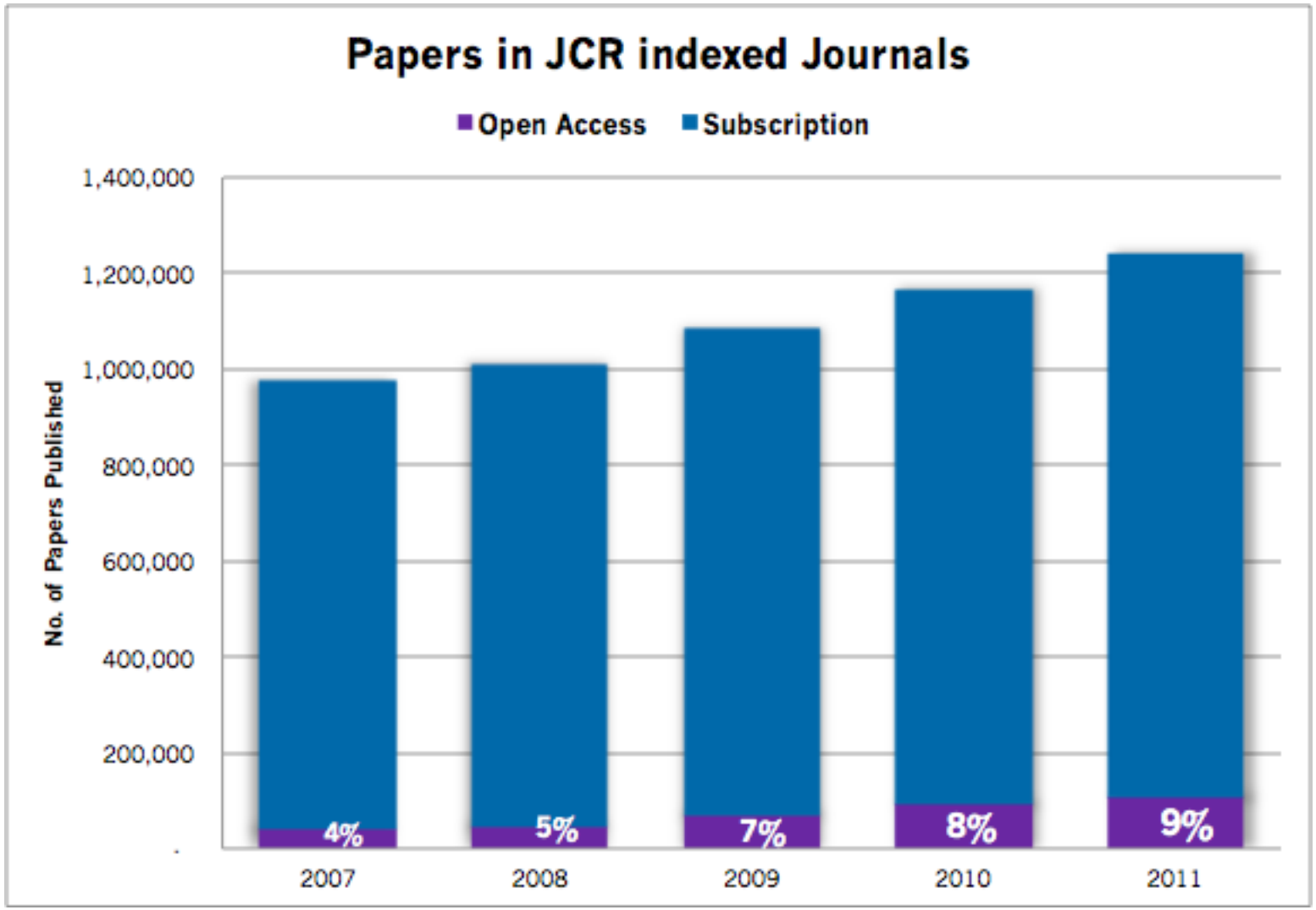
9,744 Journals (+14%)
1,585,420 Articles (+66%)

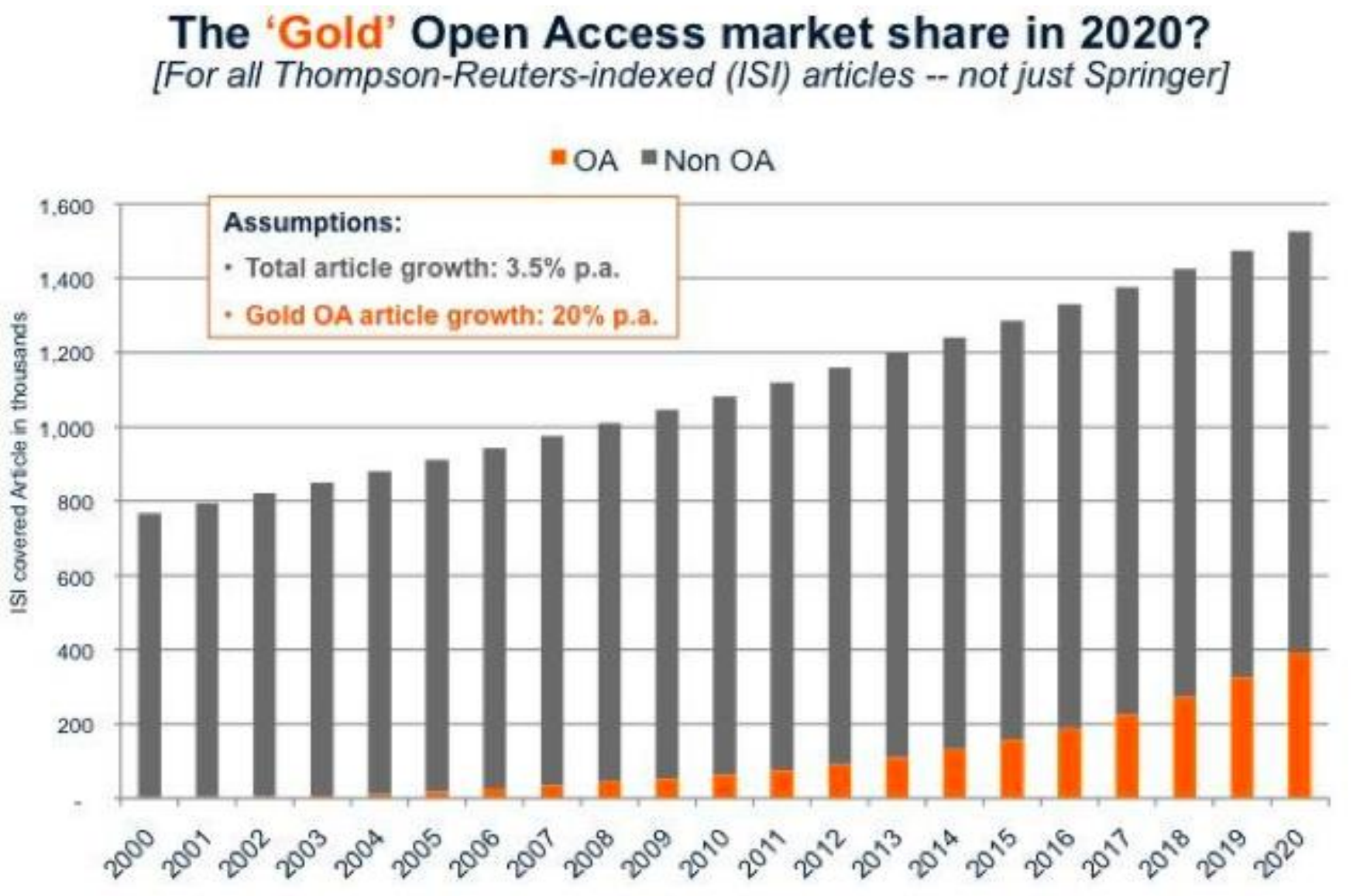
2006 = **138** Articles

…

2013 = **31,500** Articles

The growth of OA





Projections of Gold OA Growth for ISI-indexed journal articles (data from Springer publishers). Growth will reach 27% of all journal articles by 2020.

http://www.richardpoynder.co.uk/Open_Access_By_Numbers.pdf

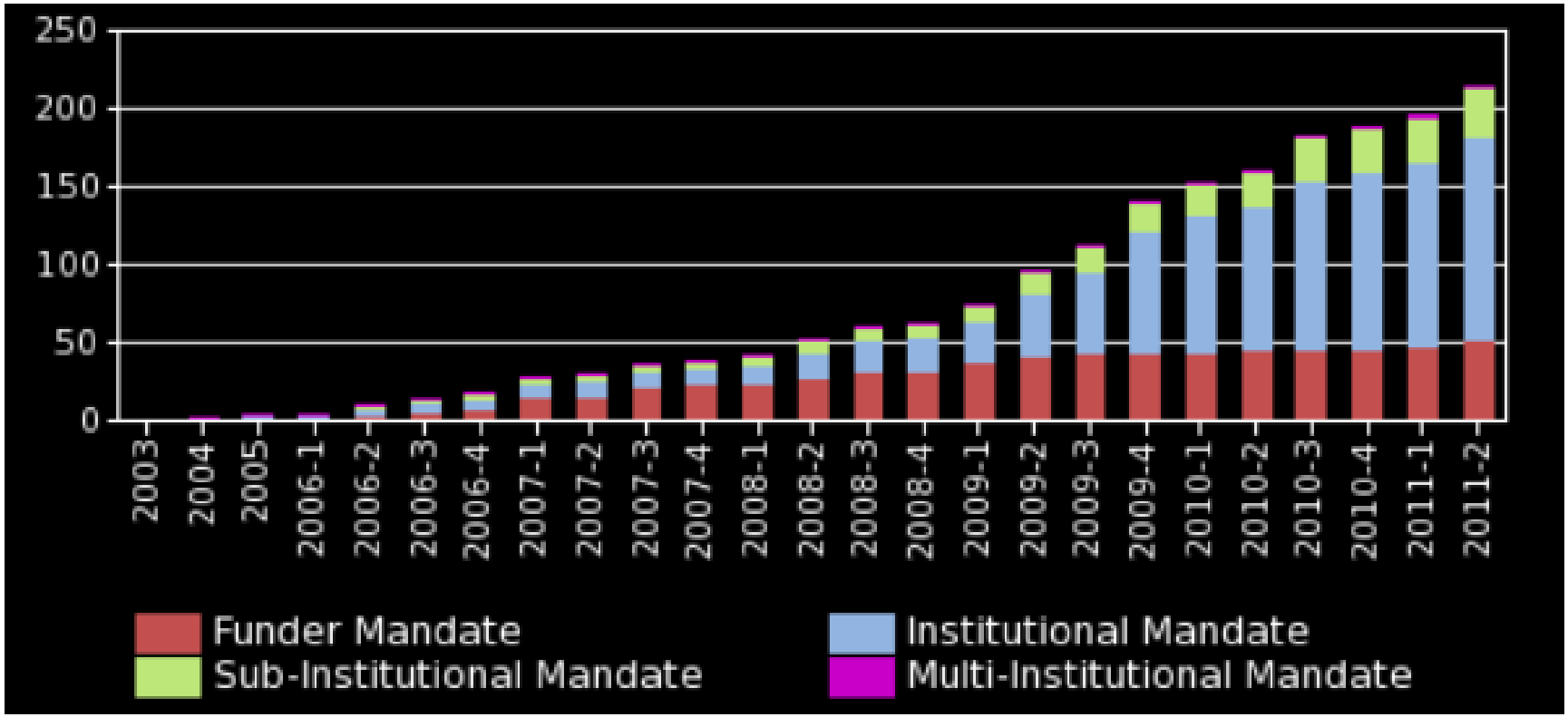
Open access mandates

- To make publications arising from research freely available - through green and/or gold
- For example:
  - a university may require that its researchers deposit copies of publications in its institutional repository (aim: showcase institution's research);
  - a funder may offer money to cover costs of gold OA (aim: inform the public about research results)

Three mandate sources

- Government - eg European Union, NIH
- Research funder - eg Research Councils UK
- Employer - including Harvard, MIT, Stanford, University College London, and University of Edinburgh

Registry of Open Access Repositories Mandatory Archiving Policies (ROARMAP)



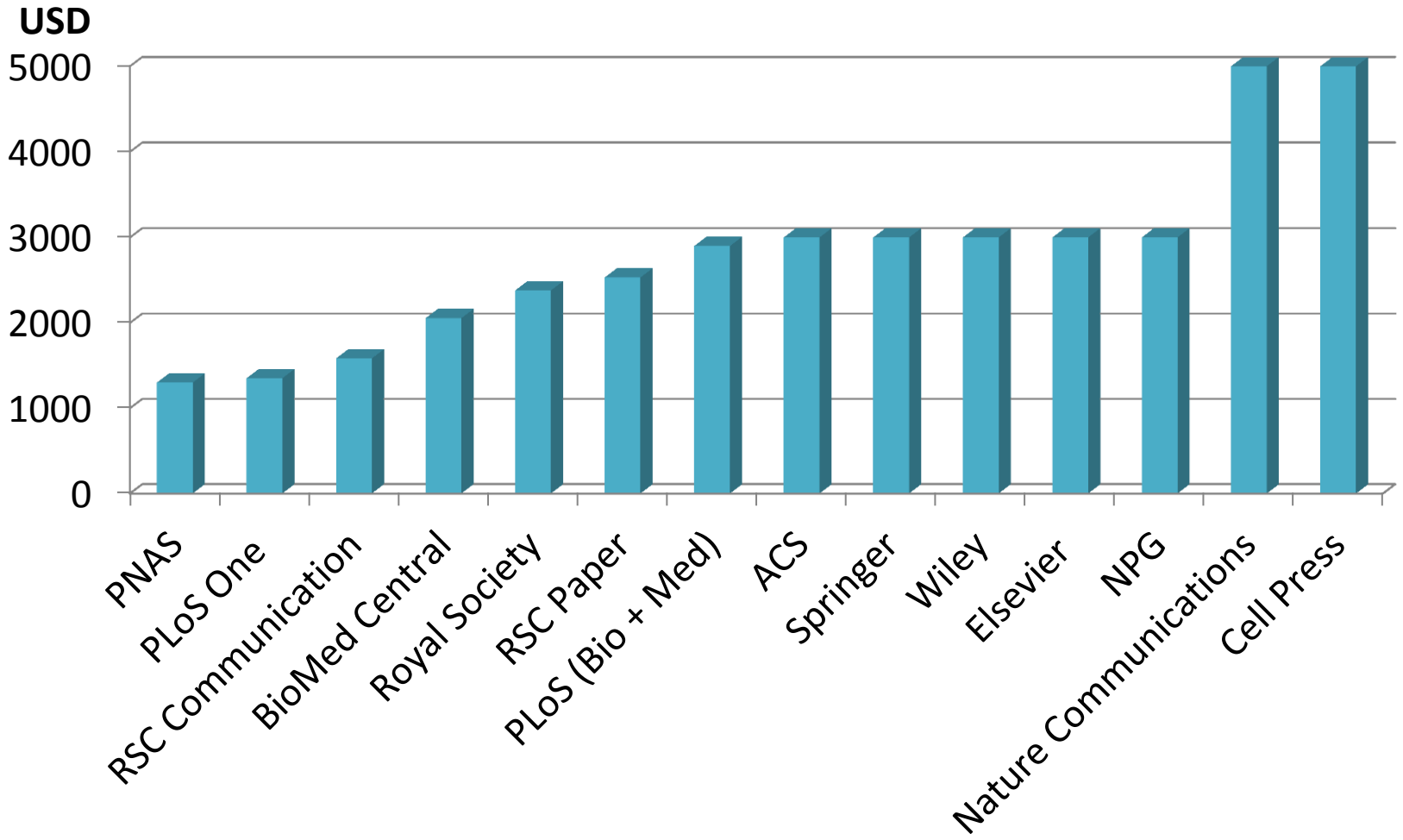
Exercise

- In your groups, discuss the benefits and problems of Open Access for:
  - Librarians
  - The Public
  - Academics
  - Publishers
- Record your responses to feedback to the whole group

Objections to Open Access

- Misconception that OA journals are not subject to the same rigorous **peer-review** process as traditional journals.
- Promotion and tenure are inexplicably intertwined with the notion of publishing in established, "**brand name**" journal titles (Nosek and Bar-Anan 2012).
- **Fees** (APC – article processing charges) for Gold OA are significant and subsidies not always clear.
- Suitability for all disciplines?
- Shifting support ($s) from "creation of knowledge to the **dissemination** of knowledge".

Scholars favor Open-Access Journals, but quality and fees are concerns



Source: RSC - Cost of Publishing OA Articles

THE CHRONICLE OF HIGHER EDUCATION
March 25, 2014

Advice

March 24, 2014

One Size Doesn't Fit All in Open Access

How a creative-writing faculty had to lobby for changes to protect graduate students' work

Illustration by Mark Shaver for The Chronicle

By Jennifer Sinor

Andrew called me about a year after he had graduated from our master's program in English. "My thesis is for sale on Amazon," he said, without salutation or preamble. "It costs $50."

Most Popular
Most Viewed | Most Comm
1. We Are All Mutants

Predatory OA Publishers

- Beall's List (Potential, possible, or probable predatory scholarly open-access publishers)
  - article processing charges
  - Mandates
  - Misleading metrics
  - Open-access policy
  - Open-access sanctions
  - Plagiarism
  - Platinum open access
  - Scholarly Open-Access Publishers
  - spam email
  - Unethical Practices
- http://scholarlyoa.com/publishers/

Image Source: Simon Fraser University Library, http://www.lib.sfu.ca/node/12169

OA and librarians

- Costs
- Permissions to reproduce/reuse etc
- Serials crisis
- Boosting role and visibility

OA and the public

- Taxpayer funded
- Greater access for all means a better world
- Developing countries

http://www.flickr.com/photos/asiabruin/59396134/

OA and the academic

- Greater exposure of research
- Larger number of citations
- Meeting like-minded researchers
- Greater research funding opportunities
- Status
- Tenure
- etc

Members of the emerging strategic research theme "Earth as a Habitable Planet"

Recent developments 2013/14

- **US federal agencies** to provide public access to research publications within one year (Feb 2013)
- The **UK HEFCE** proposed that after 2014, only open access articles would count in the UK's Research Excellence Framework (REF) (Feb 2013)
- **PeerJ** offers a one time subscription fee for authors to publish for life
- **UNESCO** releases an open access repository

Recent developments 2013/14

- **Wellcome Trust** extended its open access policy to cover monographs and book chapters
- **PLOS** passed the 100,000 article milestone (Dec 2013)
- **SCOAP3** is launched by CERN (Dec 2013)
- **"Access to Research"** initiative 8,400 journals from Elsevier, Wiley-Blackwell, Springer, Taylor and Francis and Nature Publishing Group for walk-in access to UK public libraries (February 2014)
- **PLOS** journals need to have a 'data availability statement' (March 2014)

Recent developments 2013/14

Open access to be a requirement for UK research funding

in Open Access — April 1, 2014

Jisc today welcomed the announcement by Higher Education Funding Council for England (HEFCE), the Scottish Funding Council, the Higher Education Funding Council for Wales and the Department for Employment and Learning that from 2016 they will expect all articles submitted to the Research Excellence Framework (REF), a system for assessing the quality of research, to be available by open access.

This framework will be used by the HEFCE, the Scottish Funding Council, the Higher Education Funding Council for Wales and the Department for Employment and Learning in Northern Ireland to inform the selective allocation of their research funding to higher education institutions. This means that any university which applies for research funding will have to show how they support open access.

Breaking News!!

CHINESE ACADEMY OF SCIENCES

About CAS | Newsroom | Science & Technology | International Cooperation | CAS Institutes | Scientists | Education & Training | Resources | Join Us | Sunday 18 / 5 / 2014

Location : Home>Newsroom>News Updates

News Updates

CAS Issues Open Access Policy

2014-05-16

The Chinese Academy of Sciences (CAS) will promote open access to scientific articles generated from publicly funded research, the academy announced Thursday in Beijing.

In a statement, CAS said it will require its researchers and graduate students to deposit final, peer-reviewed manuscripts of research articles into the open access repositories of their respective institutes within 12 months of their official publication in academic journals.

CAS will also encourage researchers to deposit previously published articles into their respective institutional repositories as well.

The academy said open access will "facilitate knowledge dissemination and accelerate the globalization of science." thus quickly transforming knowledge into innovation and benefiting social development.

As part of its new policy, the academy has also authorized libraries and information departments to develop detailed open access guidelines in accordance with copyright laws.

CAS noted that open access will continue to evolve and the academy expects further cooperation with the

Breaking News!!

国家自然科学基金委员会
National Natural Science Foundation of China
激励创新 引领未来

首页 | 基金新闻 | 信息公开 | 基金指南 | 项目资助 | 国际合作 | 出版物 | 下载中心 | 办事大厅 | 基金网群

当前位置：首页 >> 基金要闻 >> 基金要闻

全球研究理事会2014年全体大会将于5月下旬在京举行

日期 2014-05-16 来源：新华网 作者： 【大 中 小】 【打印】 【关闭】

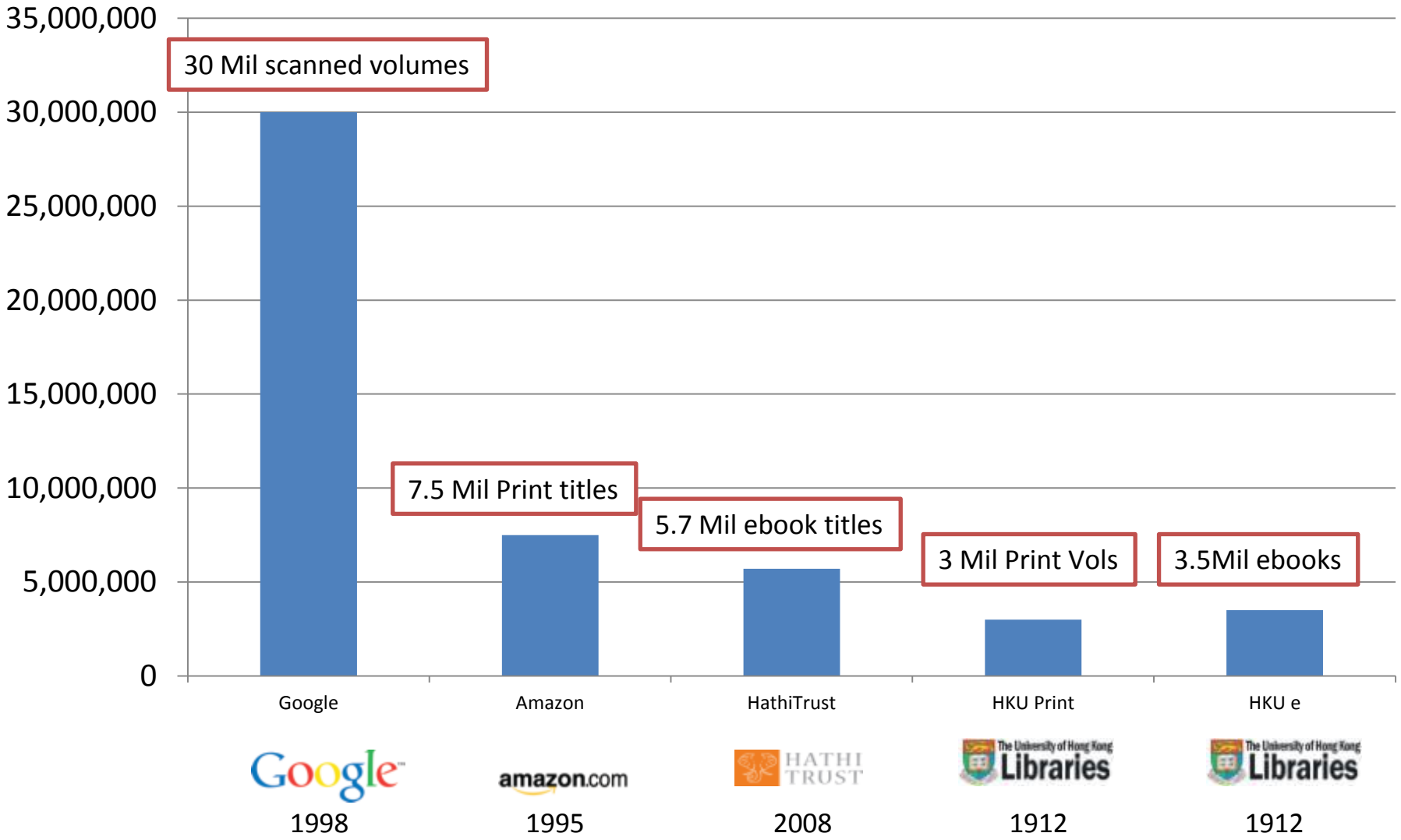
由中国科学院、国家自然科学基金委员会和加拿大自然科学与工程研究理事会共同主办的全球研究理事会（Global Research Council, GRC）2014年全体大会将于2014年5月26日至28日在北京举行。继前两次分别在美国和德国召开后，2014年北京大会是GRC第三次全体大会，届时将有来自全球50多个国家的70多家研究理事会和主要科研机构的领导和代表参加。据悉，此次会议将继续围绕科技论文的开放获取进行讨论，另一讨论的主题是青年科技人才的培养，期望围绕这两个主题形成新的行动方案和原则声明。

据介绍，科技论文开放获取已经成为世界主要科技国家促进知识的广泛及时共享、协同开放创新、促进经济增长和包容性发展的重要措施。世界主要科技发达国家和欧盟等均已把公共资助项目科研成果的开放获取当作重要的创新战略和科技发展政策。GRC 2013年全体大会通过了《科技论文开放

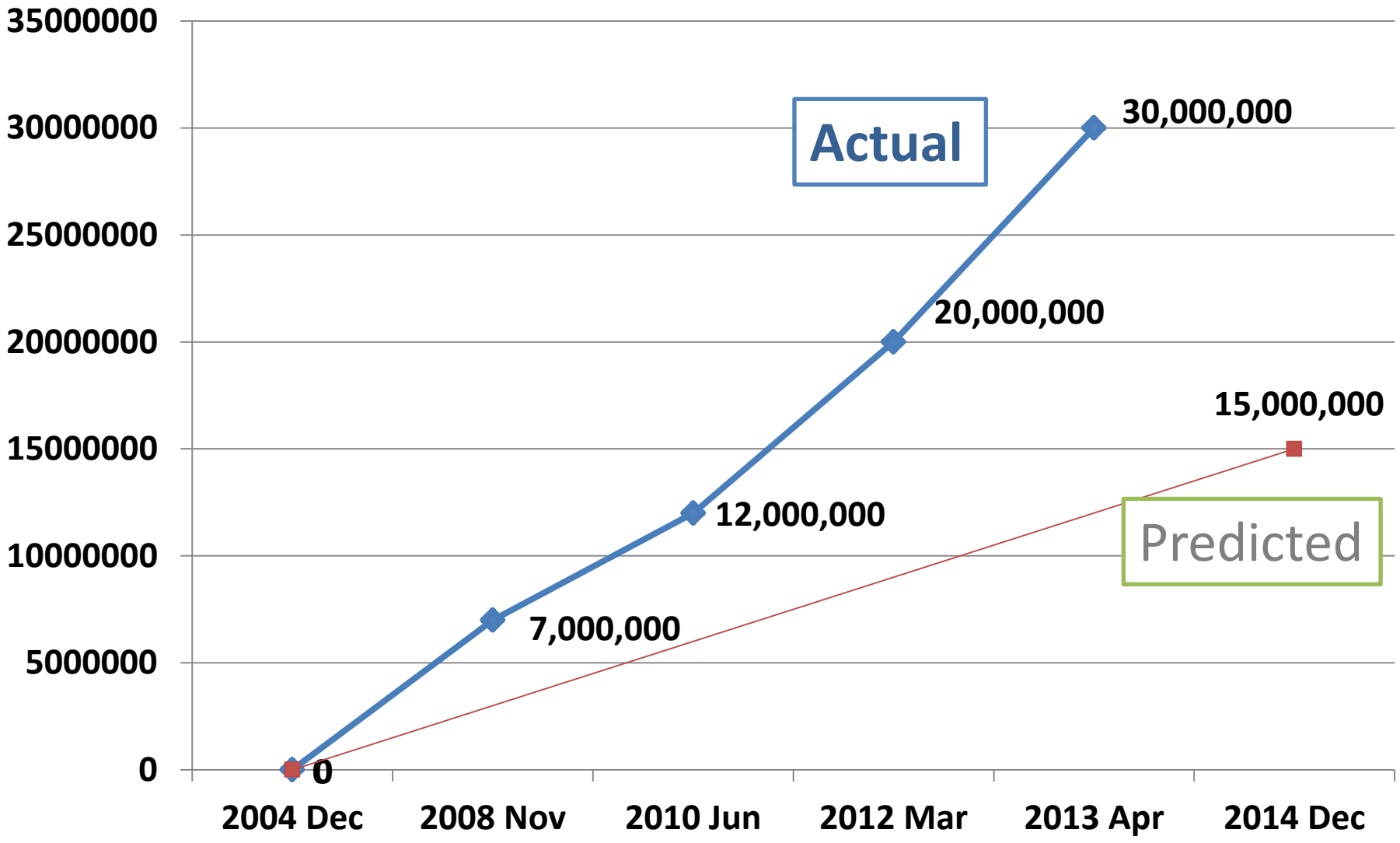
Mass digitisation

"… Google plans to digitize and make available through its Google Books service approximately *15 million volumes within a decade"* (December 2004 press release).

Staggering Growth!



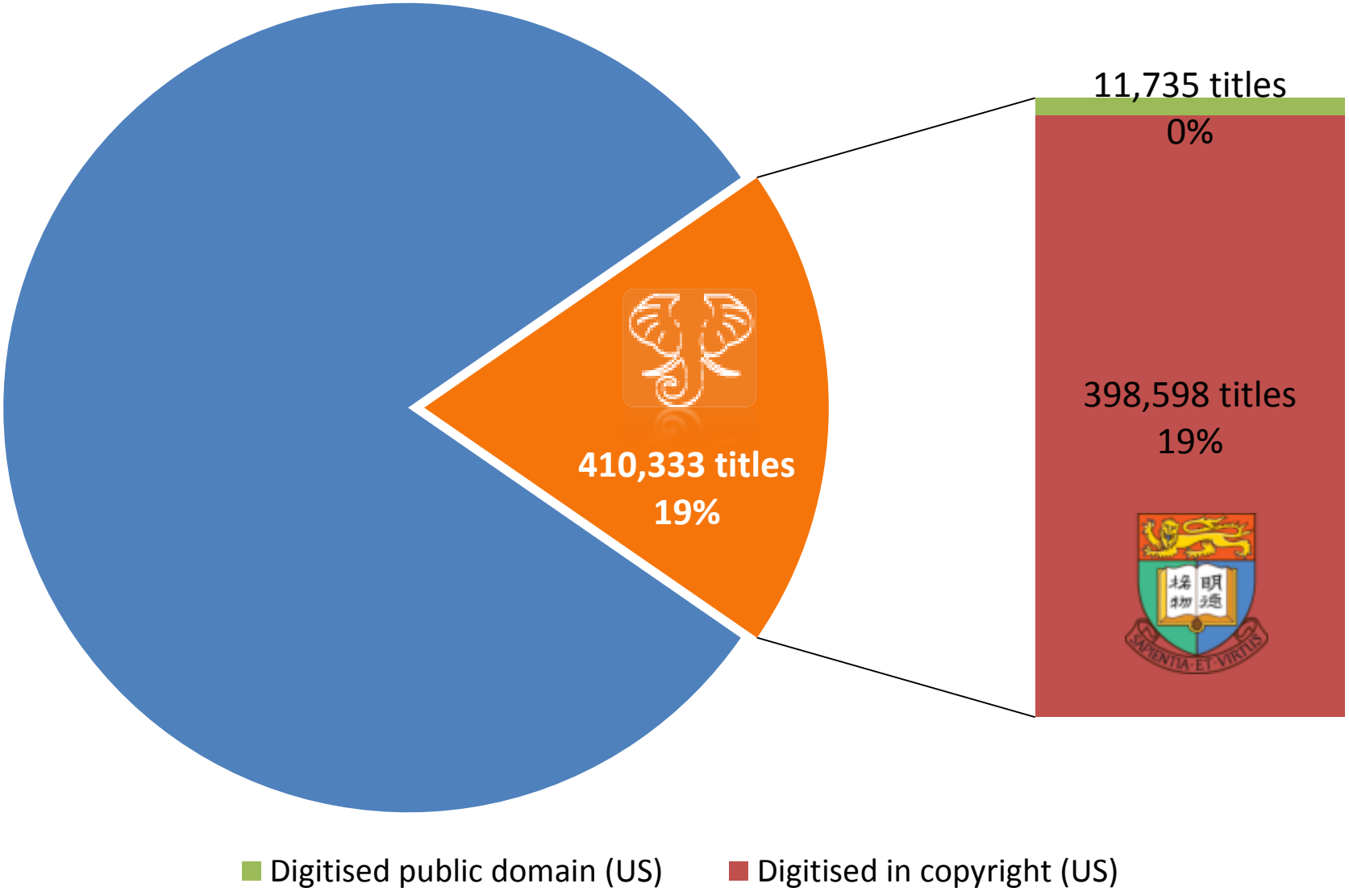
Growth in Google Books



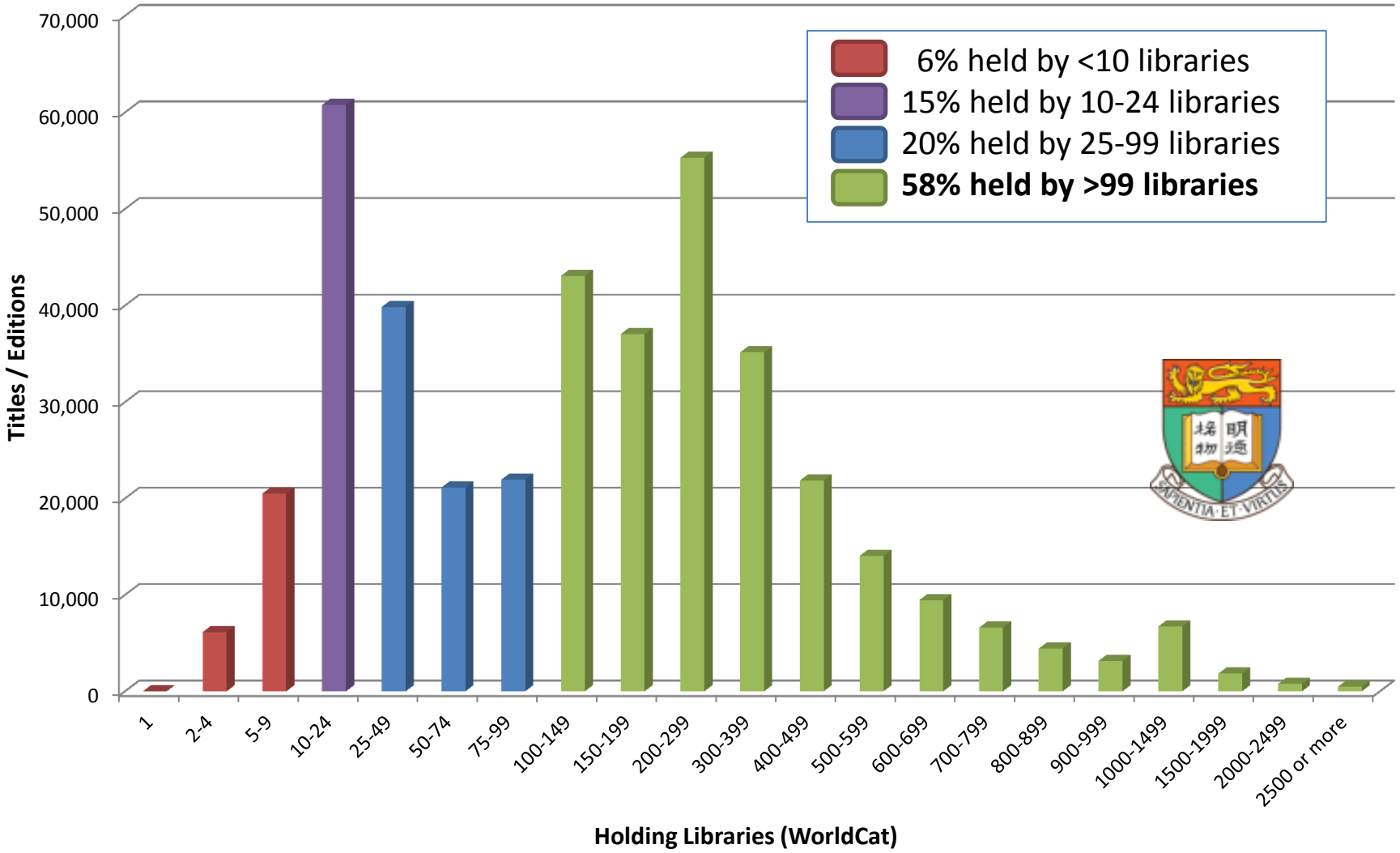
Mass digitisation

- 11,101,789 total volumes
- 5,792,279 book titles
- 289,497 serial titles
- 3,885,626,150 pages
- 498 terabytes
- 131 miles
- 9,020 tons
- **3,697,078 volumes (33%) in the public domain**
- **7,404,711 (67%) “locked up”**

University of Hong Kong Library (HUA) Titles Duplicated in Hathi Trust Digital Library - January 2012



System-wide Print Distribution of University of Hong Kong Library (HUA)
Titles Duplicated in HathiTrust Digital Library - January 2012
N = 410,333 titles

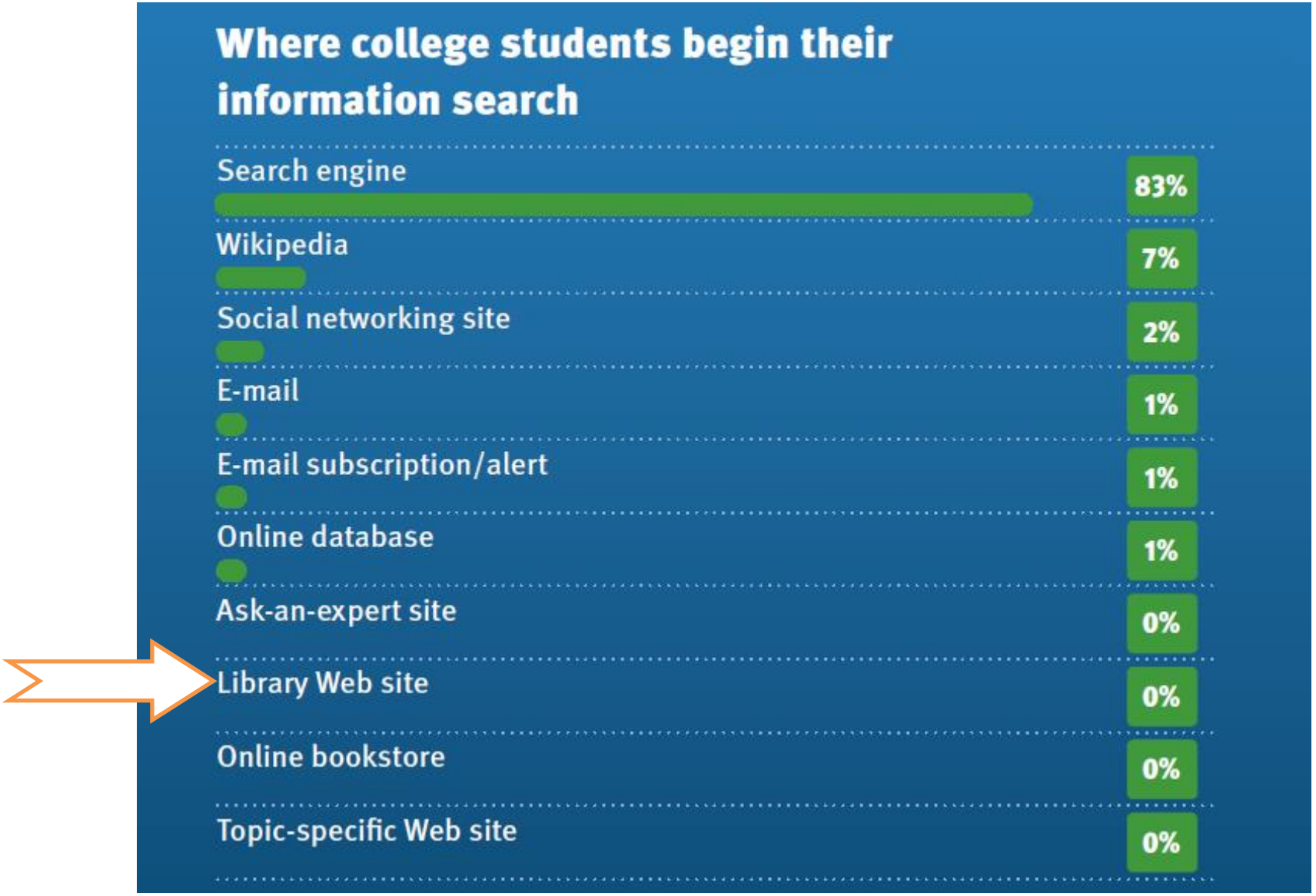


The potential for these is enormous…

…but largely unrealised (for now).

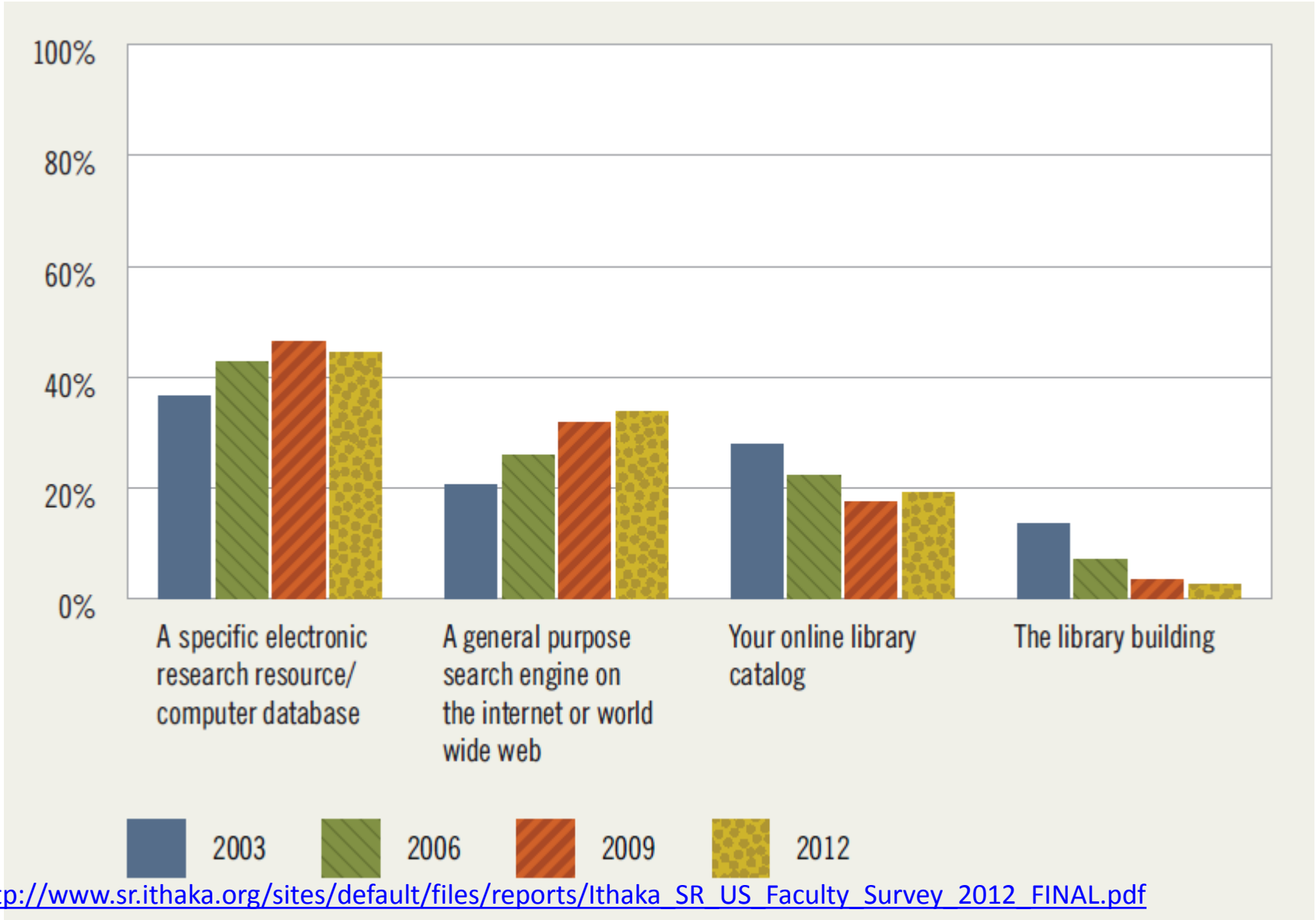
“The Library is at the heart of the university”

…or so *we* would like to believe



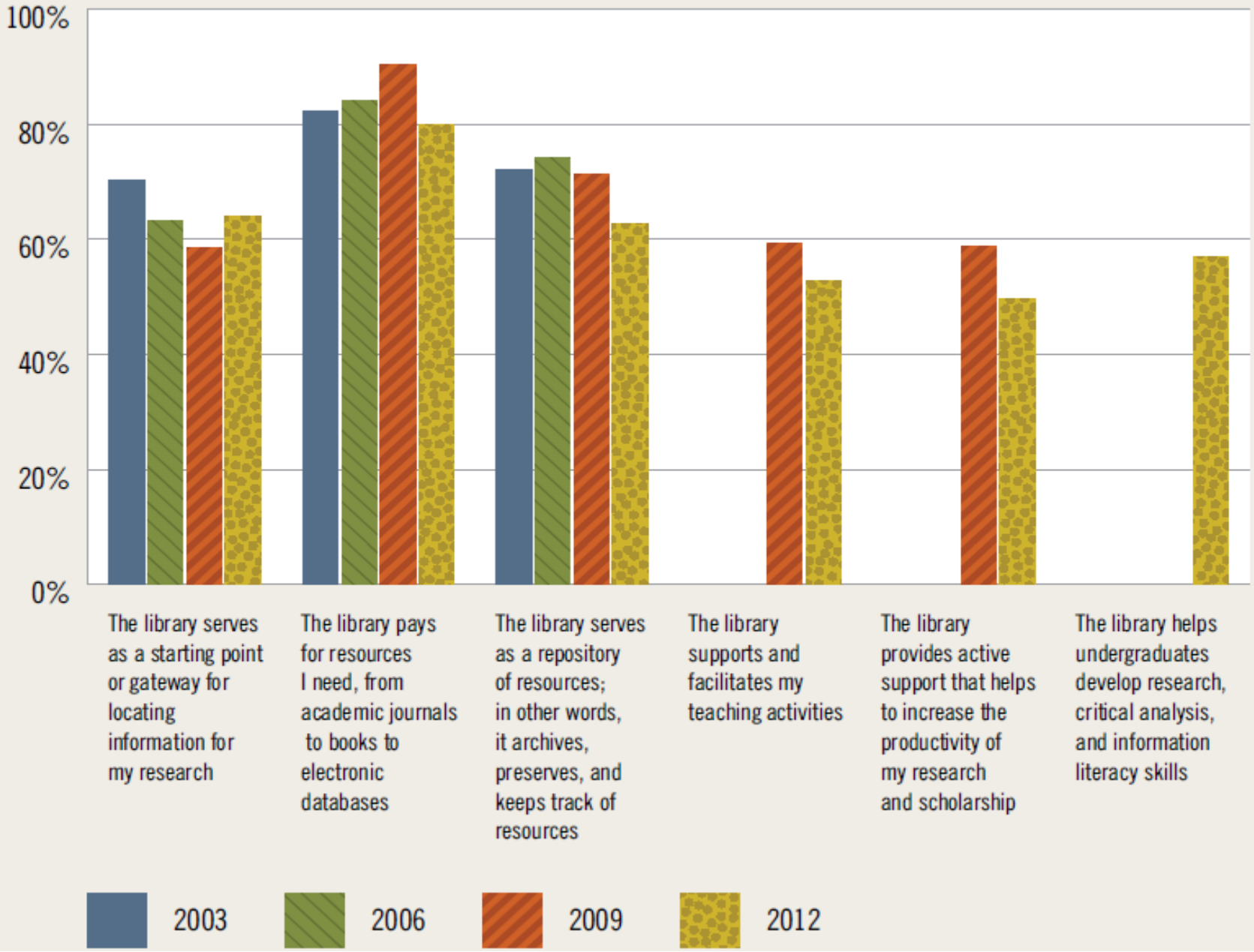
OCLC, *Perceptions of Libraries, 2010: Context and Community, A report to the OCLC Membership*, 2010. http://www.oclc.org/reports/2010perceptions.en.html

Where do Faculty begin their research



http://www.sr.ithaka.org/sites/default/files/reports/Ithaka_SR_US_Faculty_Survey_2012_FINAL.pdf

"How important is it to you that your college or university library provides each of the functions below or serves in the capacity listed below?" Percent rating each as very important, over time.



Library activities down

Annual use

Research specific reference book

81% (2005) ▶ 56% (2010) — 31% DECREASE

Homework/study

80% (2005) ▶ 66% (2010) — 18% DECREASE

Get copies of articles/journals

64% (2005) ▶ 50% (2010) — 22% DECREASE

Get assistance with research

64% (2005) ▶ 51% (2010) — 20% DECREASE

Use online databases

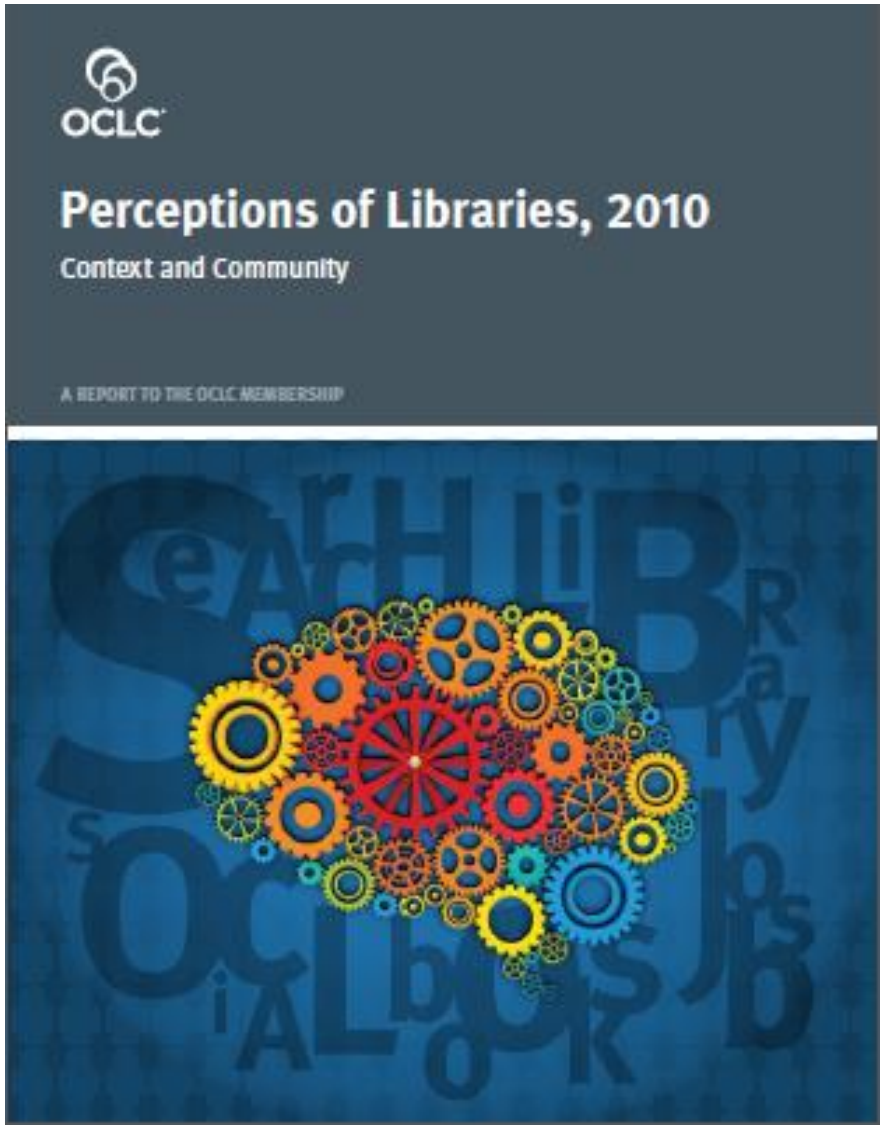
68% (2005) ▶ 59% (2010) — 13% DECREASE

Borrow print books

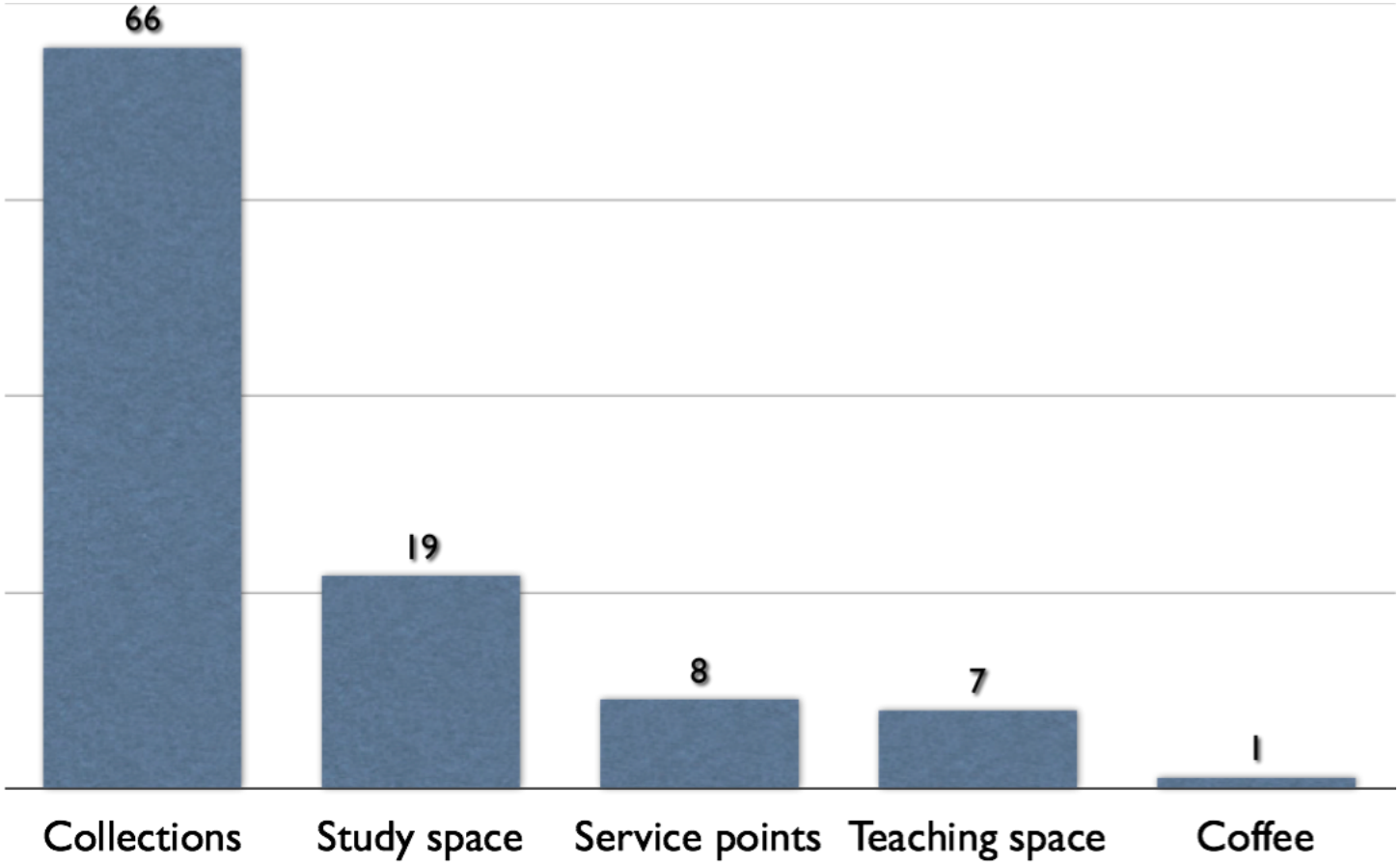
66% (2005) ▶ 60% (2010) — 9% DECREASE

Leisure reading

52% (2005) ▶ 48% (2010) — 8% DECREASE

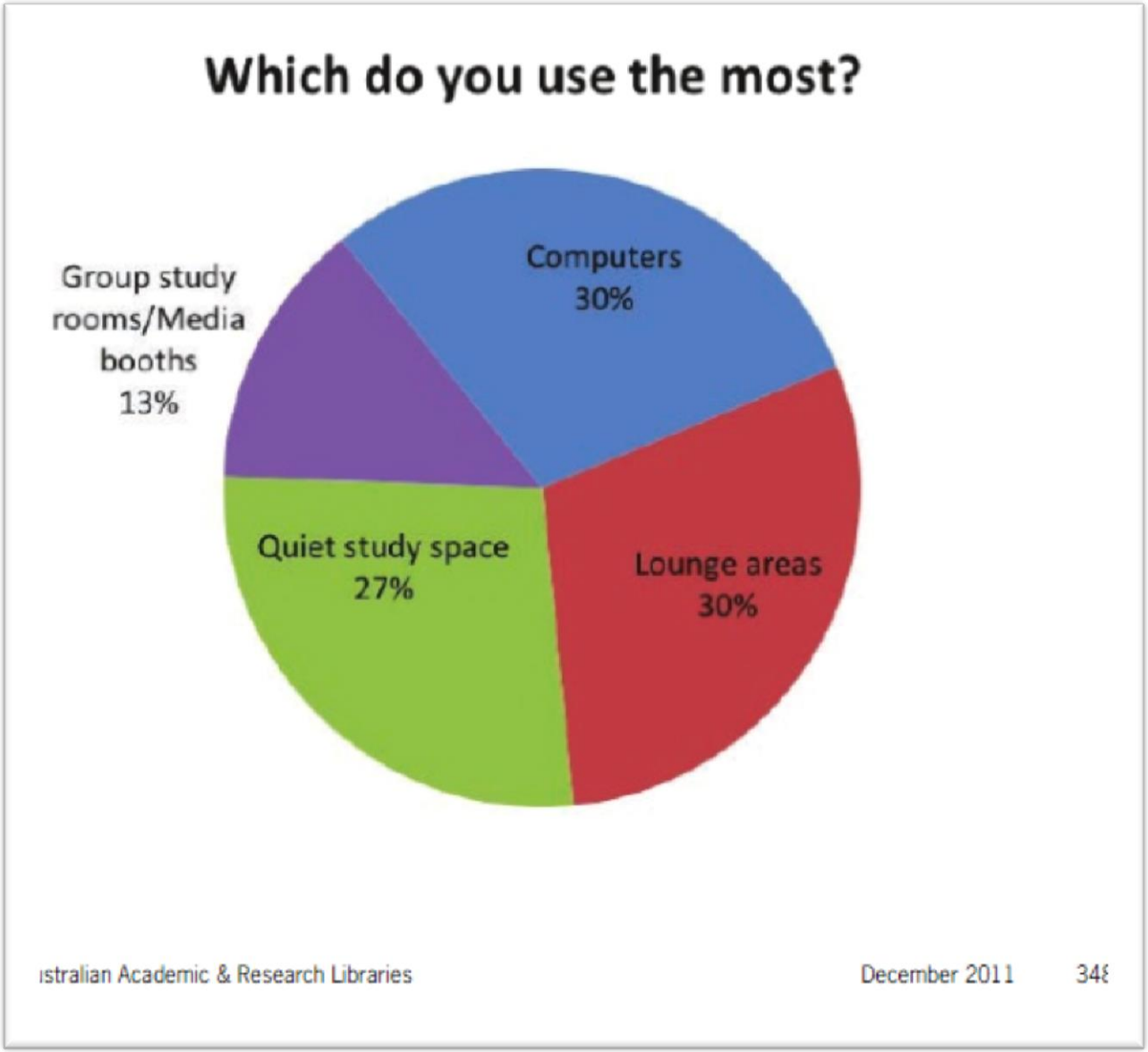


Disposition of library space



Libraries designed for learning, CLIR 2003

UNSW Survey, 2011



The major “disruptors” are:

- Declining purchasing power and budgets
- Digital content, increasingly user generated
- Open access
- Mass digitisation providing alternate access
- Ubiquitous access with mobile devices
- Declining usage
- Changing user demands

There is a need for transformation

The time is upon us.

Collection leadership issues?

- Collaborative purchasing/licensing
- e- only policy
- Open access initiatives on campus
- Patron driven collection building
- De-accessioning/off-site storage for low use
- Shared storage
- “Radical” collaboration
- Repurposing spaces
- Repurposing positions/tasks/time

Is your library addressing these issues?

Thank you.