

Forty years on in scholarly publishing

ALPSP International Conference 2012

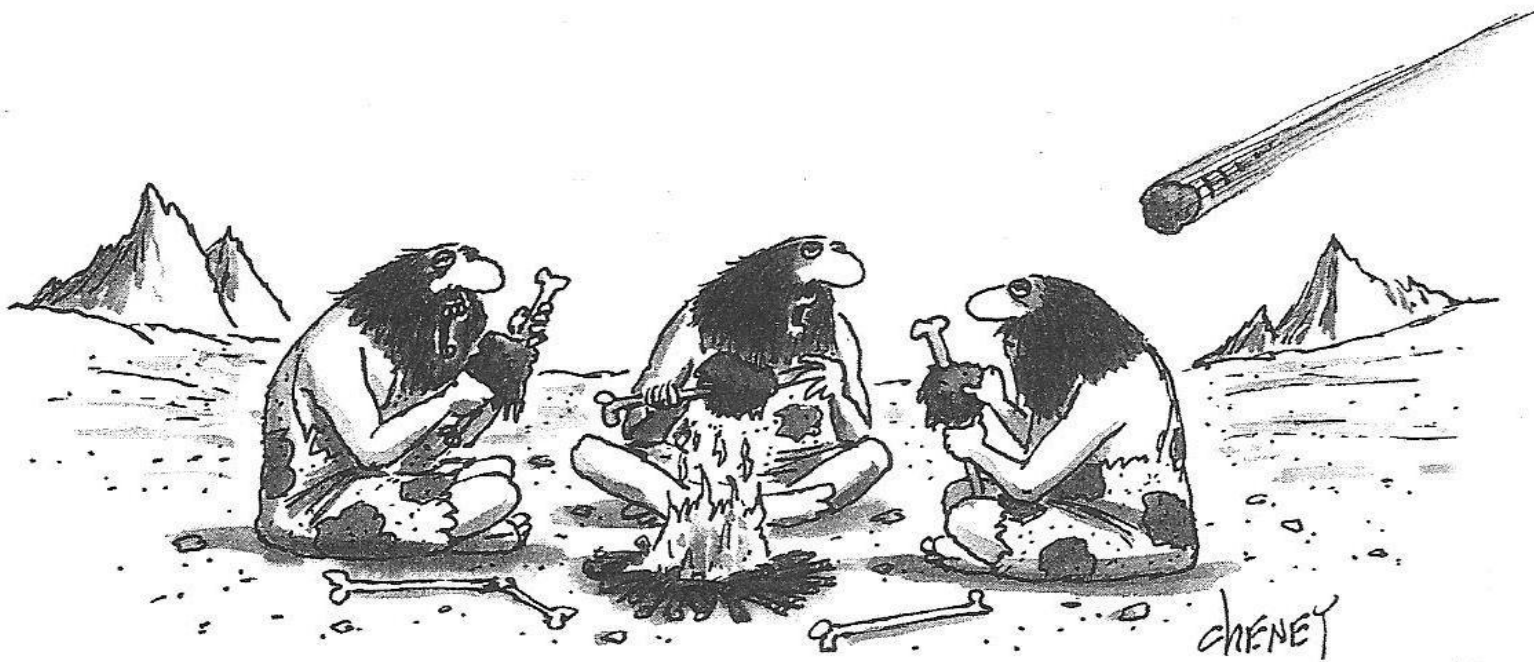
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Princeton, NJ

September 11

Scholarly publishing in 1972?



"You've got mail."



Changes in scholarly publishing 1972-2012

- Stakeholders such as:-
 - Researchers
 - Publishers
- Factors such as:-
 - Research priorities and landscape
 - Geo-political
 - Technological
- Features that have not changed...

1975

- ALPSP had 37 Member societies
- First ALPSP Bulletin March 10 1975:-

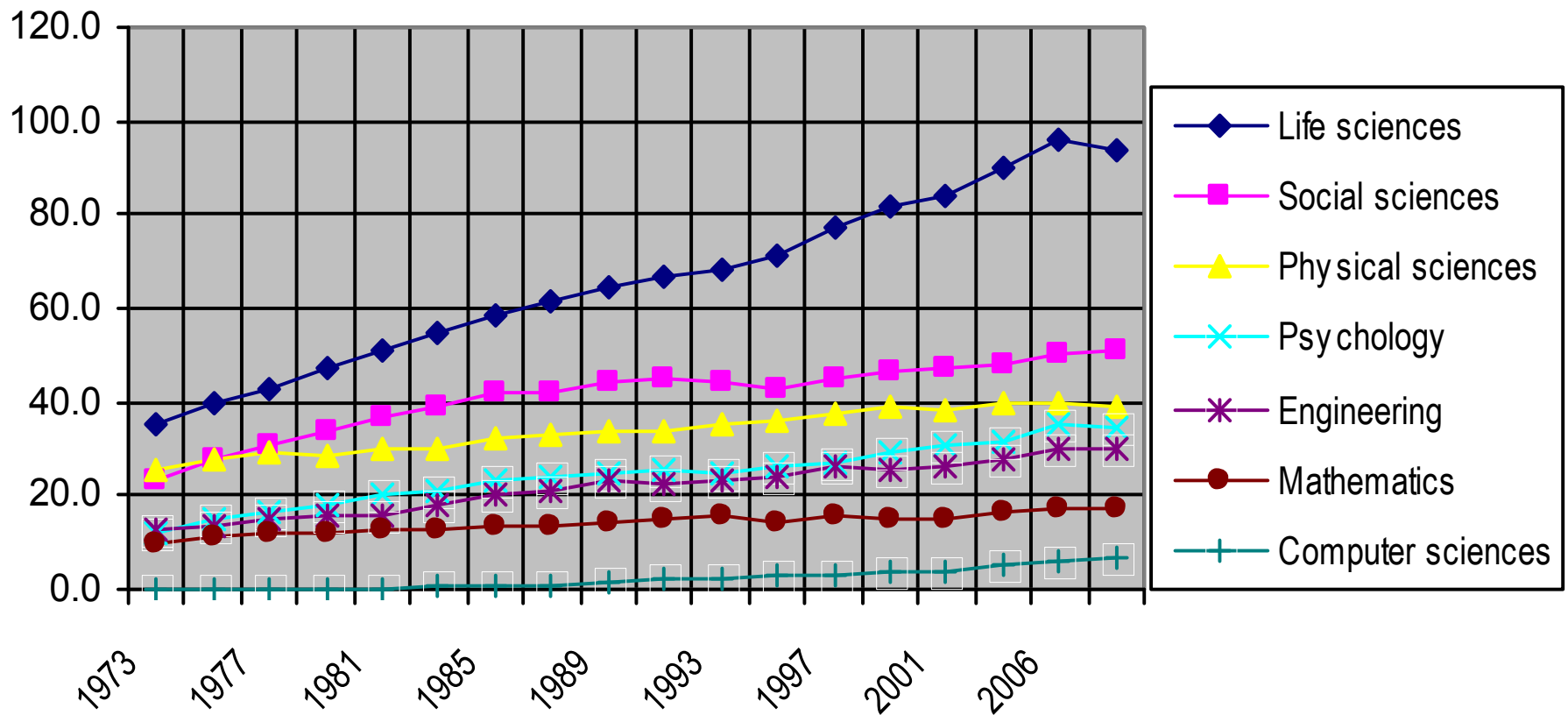
- Vatman strikes again - learned societies treated in same way as '*strip clubs...or the AA*'
- Export debts – insurance against bad debts 'overseas'
- Book pricing- how?
- ISSN – implemented from 1974
- Photocopying – worries about
- Charitable status- in danger?
- Accelerated 'surface air mail'- to the 'Far East'
- Cash crisis in Japan
- Annual subscription – pegged at £50



Researchers (USA):

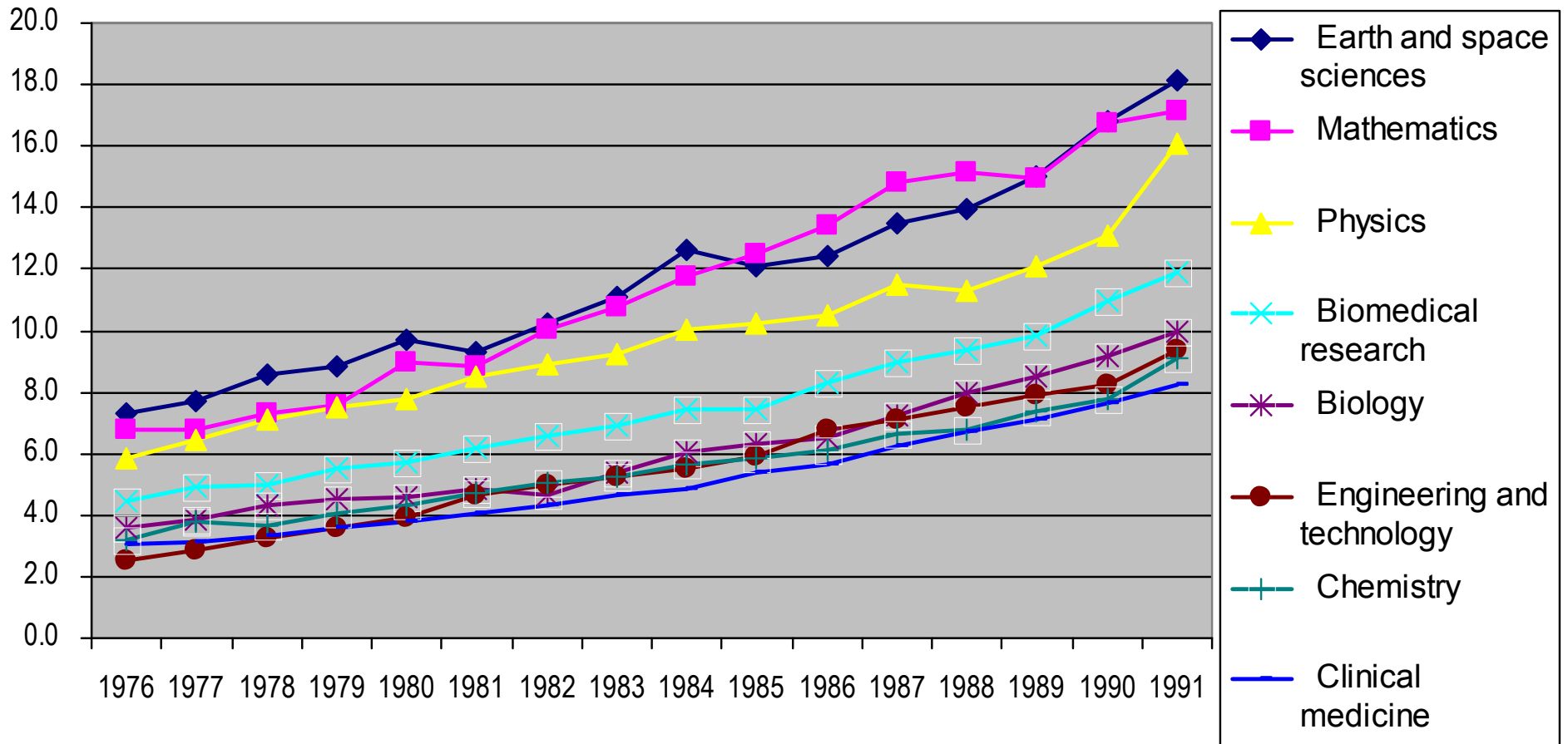
Thousands of doctoral holders employed in academia 1973-2008

Source: Science & Engineering Indicators {SEI} 2012



Collaboration: Percent research articles with international co-authors, by field 1976-1991

(Source: SEI 1993)



Nature in 1966

- Editors of *Nature*
 - "present their compliments, and beg to inform ...,"
 - ... "trust that the enclosed manuscript would be of interest"
- A system established
- (sometimes) savage copy-editing



By 2012:

Journals competing with service and brand

- Rapid publication in an XYZ journal
- Rigorous and constructive peer review
- Immediate open access: fully compliant with funder and institutional mandates
- E-only continuous publication model, which allows immediate citation of articles
- Author retention of copyright and liberal reuse rights via Creative Commons Attribution Licence ([CC by 3.0](#))
- Article usage statistics available online for each article
- High levels of author service and support
- Media promotion of articles
- Free colour
- Speed of review a competitive advantage “*..aim for a turnaround time of 4 weeks from submission to first decision*”



Authors are doing more... they often don't like it?

- Example: Letter to the Editor entitled “Online submission makes authors do all the work”

“ The submission of a paper ..takes days of fiddling around with various computer programs...the end product is no better..nor quicker. So just who benefited or profited from the change? The authors or the journals?...but avoiding the most hassle associated systems is now ... a significant factor ..when choosing a journal for submission”

Author: Cornell Medical School, USA



The cost of physics journals: Barschall.H.

Physics Today: Dec 1986

Cost of Journals

Journal	Publisher	Library subscription (dollars/year)	Cost per 1000 characters (cents)
Physics (author's survey, 1985)			
Journal of Applied Physics	AIP	450	0.7
Physical Review B	APS	740	0.7
Physical Review Letters	APS	365	1.0
Applied Physics Letters	AIP	260	1.6
Vacuum	Pergamon	170	3.4
Journal of Physics A	Inst. of Physics	470	3.8
Zeitschrift für Physik A	Springer-Verlag	502	4.5
Physics Letters A	North Holland	717	4.6
Molecular Physics	Taylor & Francis	860	5.8
Nuclear Physics A	North Holland	2189	5.9
Annals of Physics (New York)	Academic Press	756	8.3
Physique Théorique	Gauthier-Villars	108	9.0
Journal of Mechanics and Physics of Solids	Pergamon	200	9.2
Foundations of Physics	Plenum	395	12
Particle Accelerators	Gordon & Breach	260	31

Publishers behaving badly

Gordon & Breach (now part of Taylor & Francis/ Informa)

- Heinz Barschall published articles in *Bulletin of the APS* (APS) and *Physics Today* (AIP) in July 1988
- G&B sued these 3 in 4 countries: Switzerland, West Germany, France and then USA on grounds of ‘comparative advertising’ (previously had threatened AMS with lawsuit in 1983 also for publishing cost comparisons).
- Court in US ruled “*..that Barschall had accurately calculated the components of his ratio and that his test was therefore reliable.*” In France, however, “*..committed acts of unfair competition by illegal comparative advertising, for which they must make reparation.*”
- Barschall/AIP/APS eventually won all the lawsuits filed by G&B



What happened to the publishers?

- Of the 22 publishers in Barschall's 1985 sample of physics, maths and philosophy journals ...
- 9 Society/association/university presses are *all* still publishing
- 13 Commercial publishers; 12 have changed ownership... only De Gruyter has not

+ Evolution of merger and acquisition to increase shareholder value and in parallel..

+ Evolution of journal portfolios. Example: Pergamon Press

In 1960 -> 59 journals

In 1992 -> 418 journals

“The secret of Pergamon's success was to publish a large number of journals, so that the established titles could support the new ones during their formative years.” (Quote: Brian Cox)



Mergers & acquisitions: industry consolidation

- *Library Literature* journal (1934-1998):-
- 1952 added a “Publishers and libraries” subject heading
- 1958 “Periodicals” was subdivided by “Prices.”
- 1981 “Acquisitions and mergers” first occurred
 - Early method of survival and expansion
 - Broaden product offerings
 - Achieve economies of scale
 - Increase market share
 - Increase shareholder value
 - Mergers also become associated with price control

Mergers & acquisitions

Source: Munroe: The Academic Publishing Industry: A Story of Merger and Acquisition (2007)

Reed Elsevier	Taylor & Francis Informa	Wolters Kluwer	Candover & Cinven	Wiley Blackwell	Verlagsgruppe George von Holtzbrinck
~1800 journals	~1000 journals	~275 journals	~1350 journals	~1250 journals	~70 journals
Academic Press	AA Balkema	Lippincott Williams & Wilkins	Kluwer	A.R. Liss	Nature Publishing/ Macmillan
Cell Press	BIOS Scientific Publishers	Adis International	Springer	GIT Verlag	Scientific American
Congressional Information Service	CRC Press			Scripta Technica	WH Freeman
Elsevier	Curzon Press			VCH	Bedford, Freeman Worth
Engineering Information	Gordon & Breach			Wiley	
Excerpta Medica	Harwood Academic			Interscience	
Harcourt	Marcel Dekker			Blackwell Publishing	
Morgan Kaufmann	Routledge			Blackwell Publishing Asia	
Mosby	Swets Zeitlinger			Blackwell Synergy	
Pergamon Press	Taylor & Francis			Munksgaard	
Urban & Fischer	Garland Science				
WB Saunders					

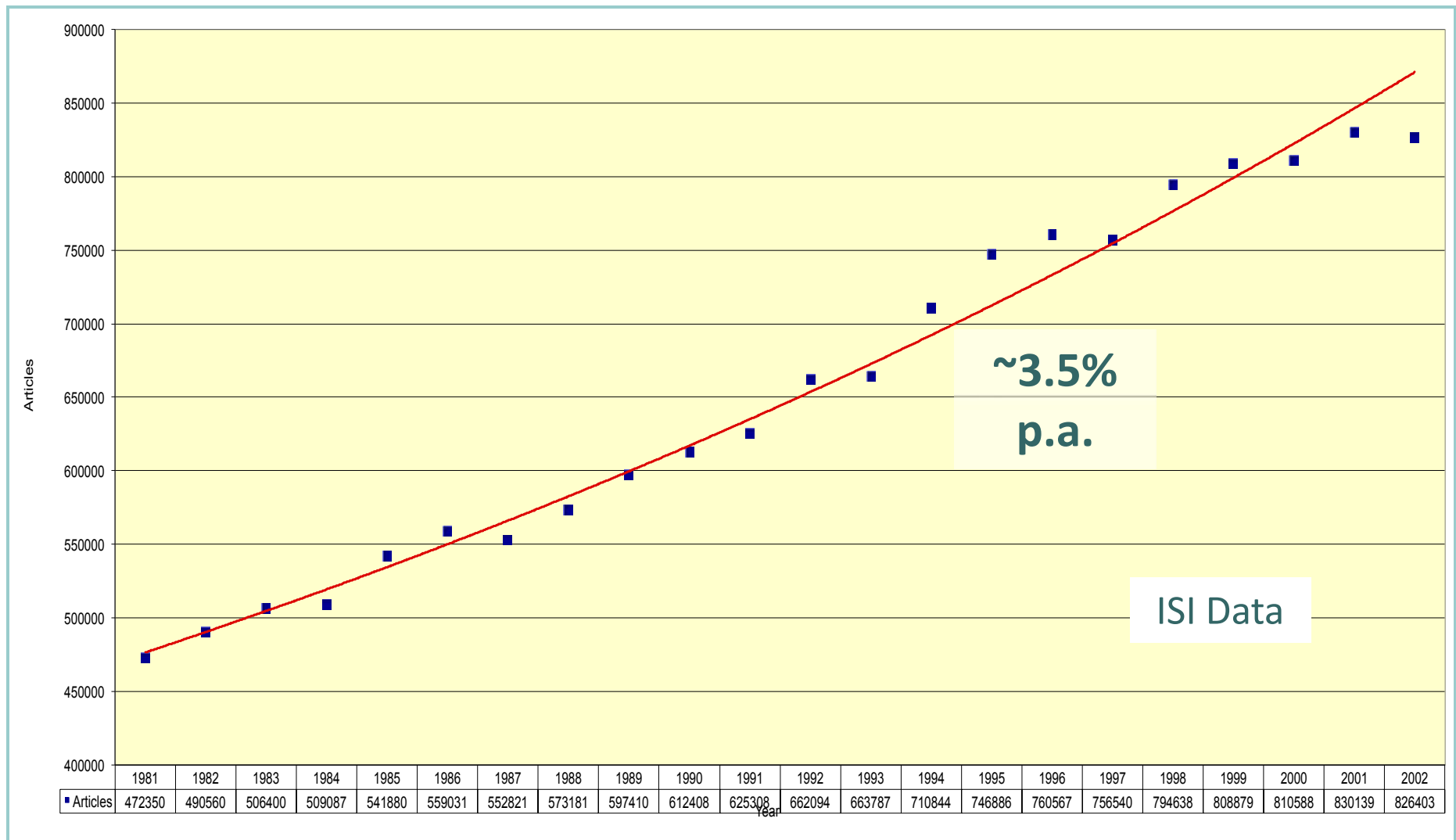


Factors that shape change

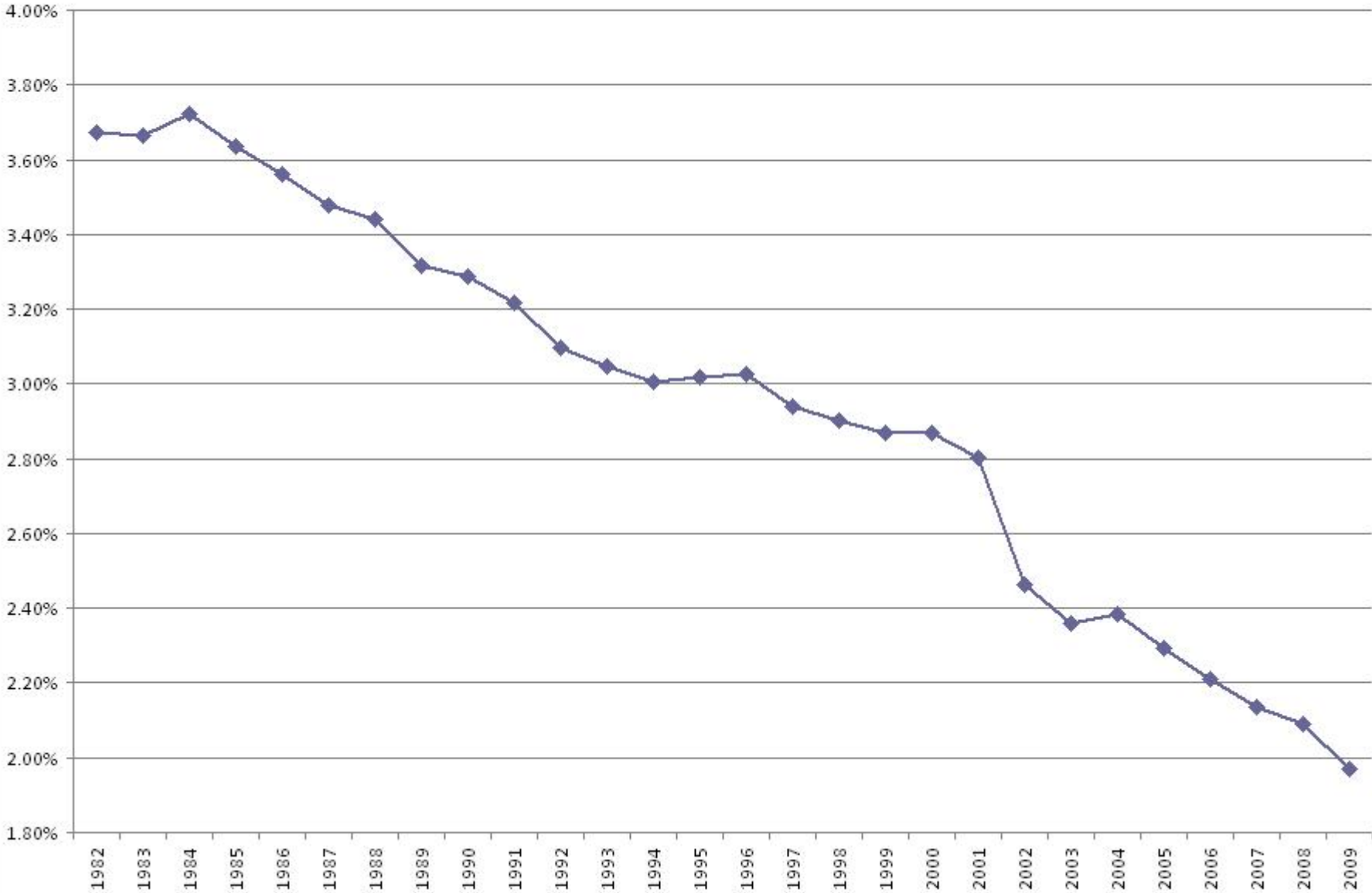
- Volume of research published
- Funding agency policies and budgets
- Shift of research to inter-disciplinary areas
- Geo-political changes: BRIC
- Technology
- Access

Scholarly article growth 1981-2002

(Source: Mabe & Amin: Growth & dynamics of scholarly and scientific journals
Scientometrics 51(1) 147-162, 2001)

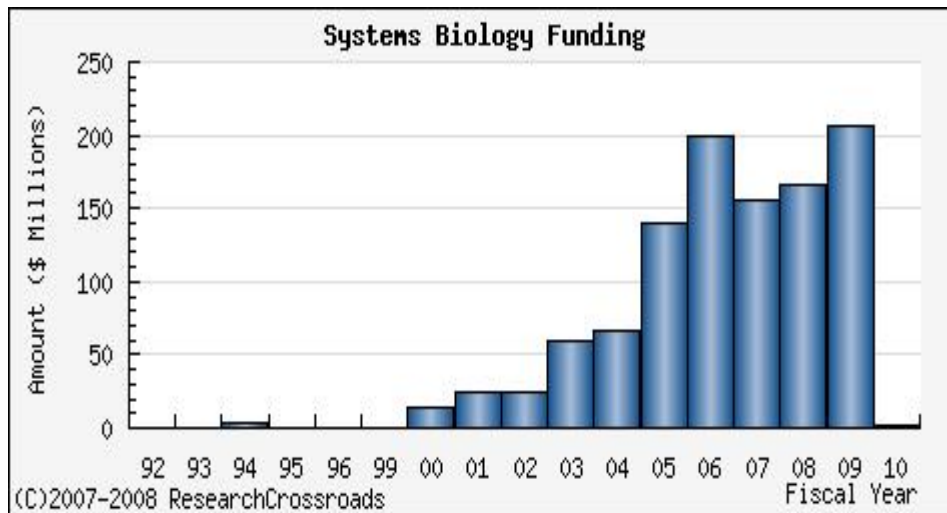
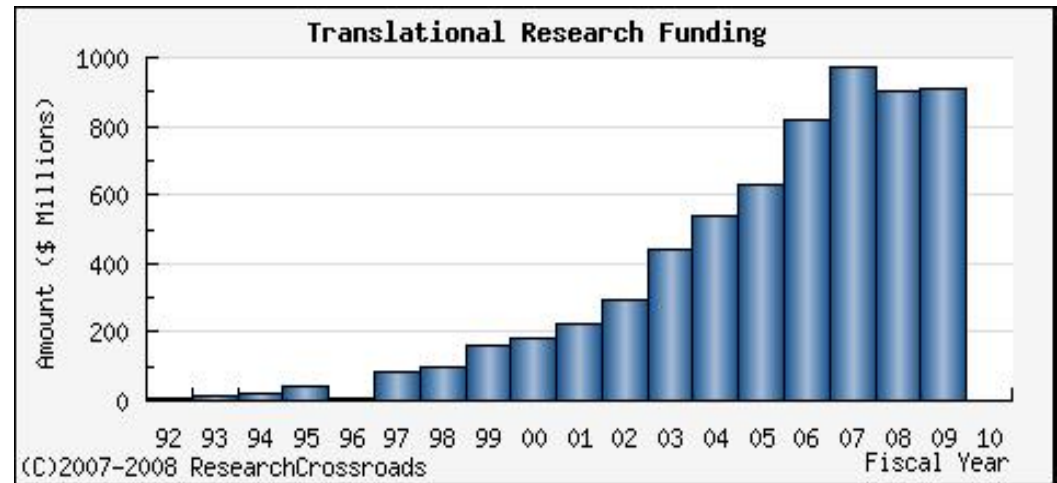


Library Expenditure as % of Total University Expenditure (Average of 40 US Institutions Reporting Since 1982)

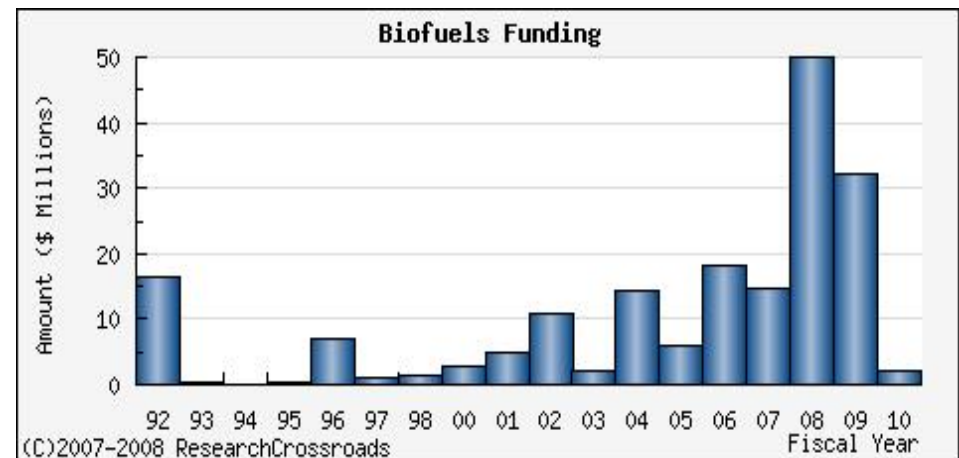


Shifts in funding

(Source: researchcrossroads.org)

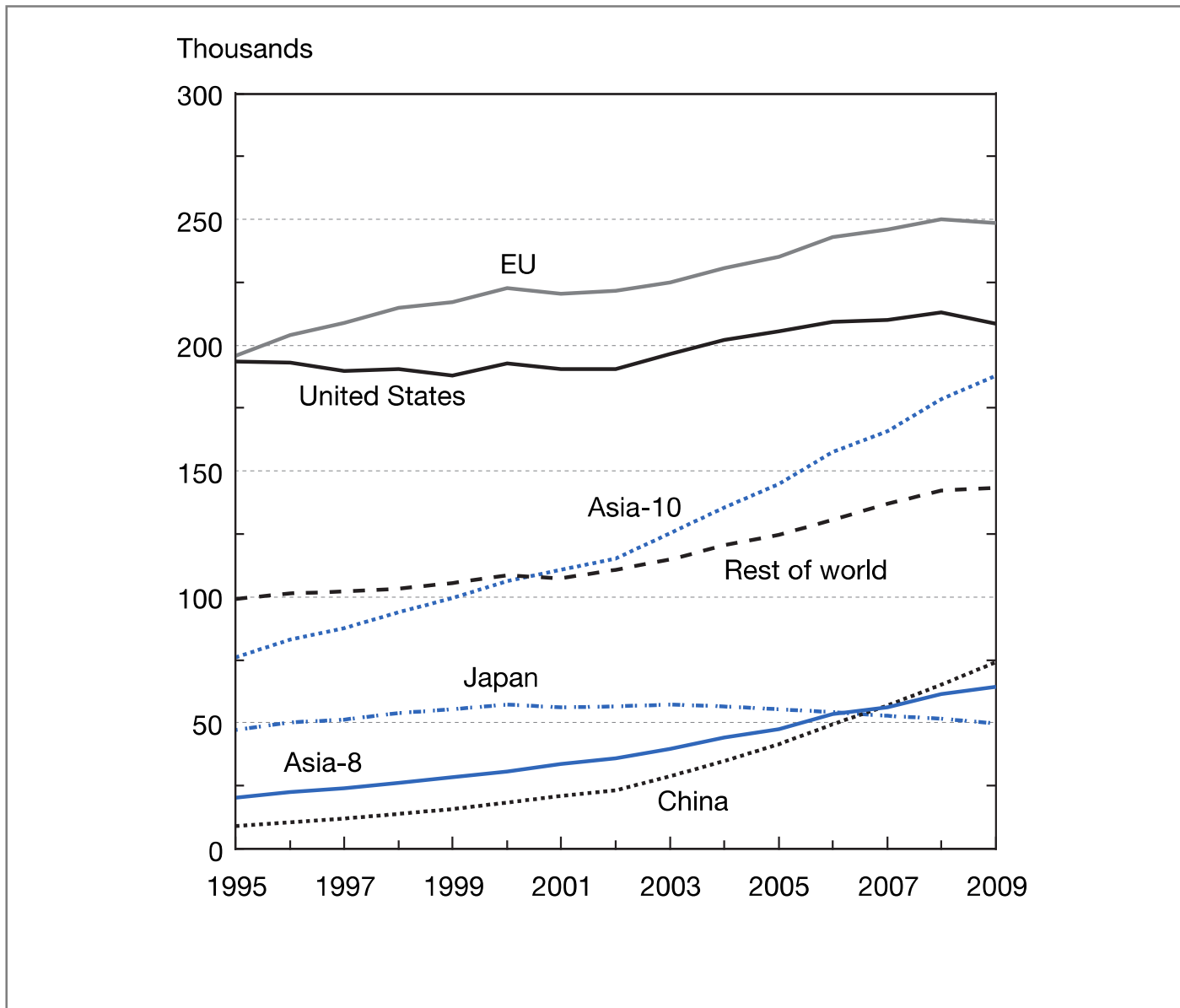


Interdisciplinary research... 'solve problems whose solutions are beyond the scope of a single discipline or area of research practice'



Science & Engineering journal articles produced, by selected region/country: 1995–2009

(Source: SEI 2012)

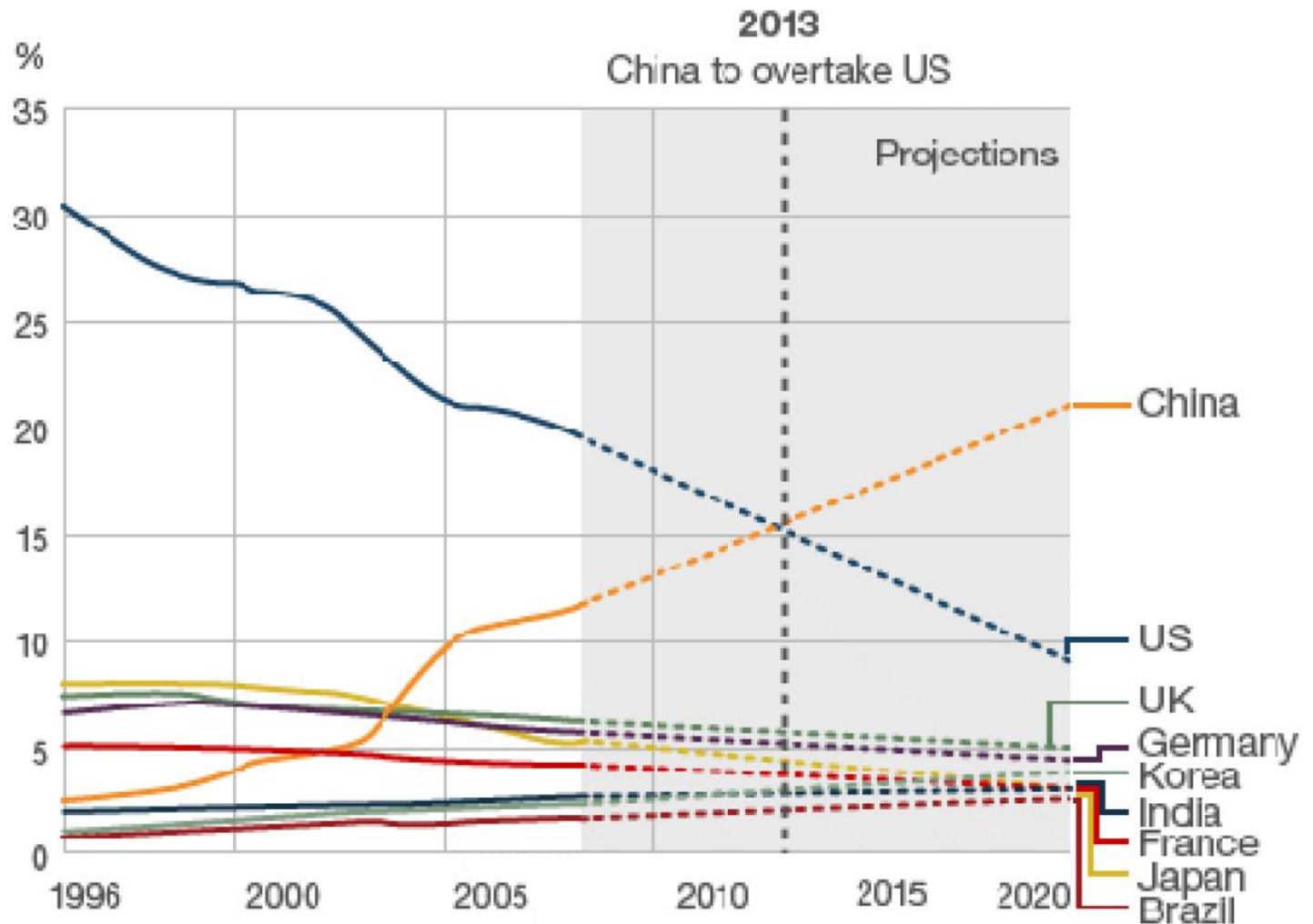


Royal Society report *Knowledge, Networks and Nations* (2011)

Based on 41 million records across 18,000 journals in SCOPUS

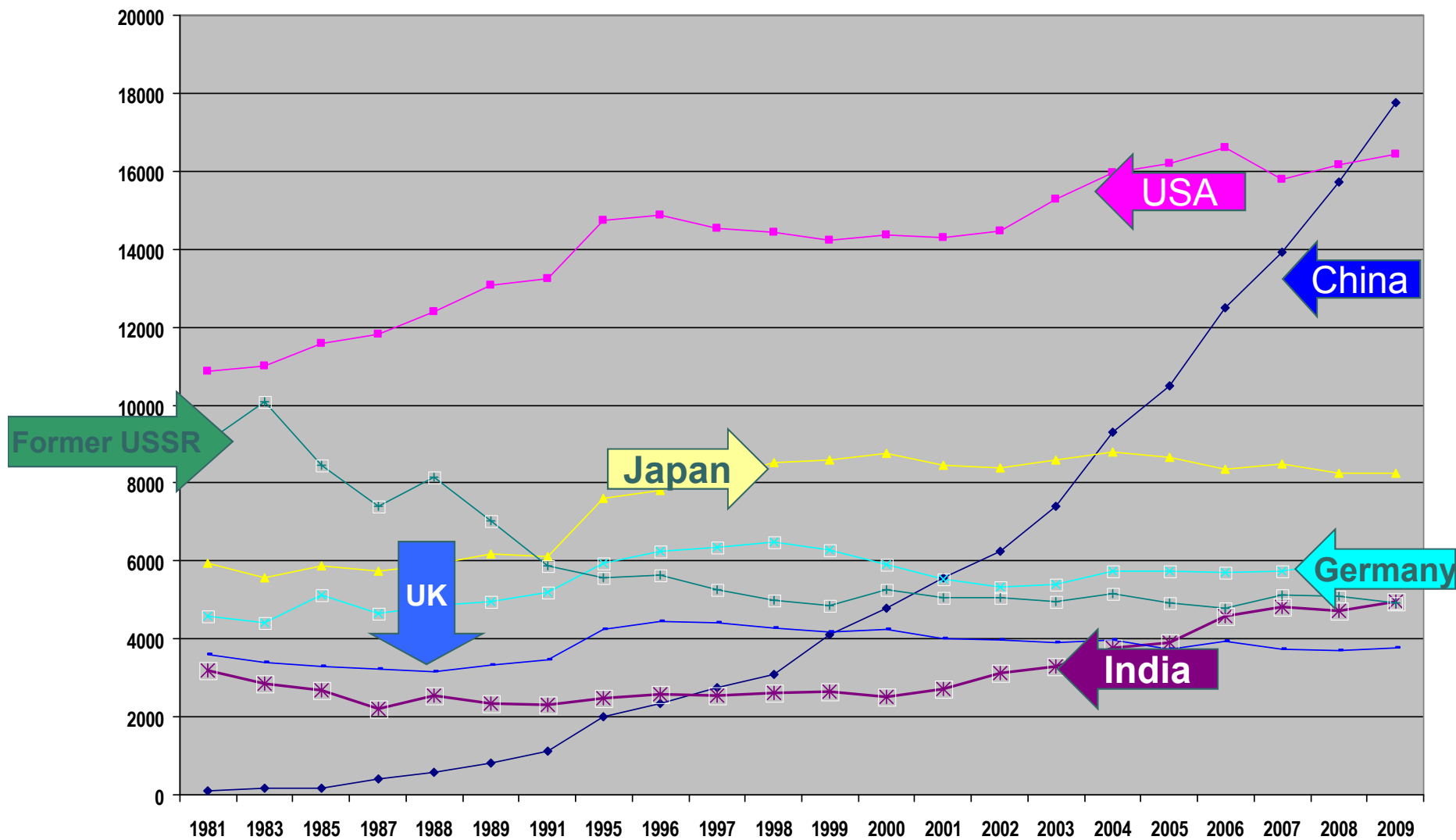
Projected growth in citations in scientific literature

Global share of total articles published



Number of articles published in chemistry 1981-2009

(source: SEI 1996 & 2012)





Technology touches all
aspects of the
publishing landscape

1997 survey funded by the PA of 51 UK based publishers of 1,344 journals (Source: P. Oakeshott)

- *(The continued) downward spiral of declining subscriptions and increased prices..(pp1)*
- Average price full rate sub = £240 (+ 9% over 1996)
- Average number of full rate subs/journal = 466 (- 2% over 1996)
- Income from *all* online formats = 1% or less
- 36/45 of publishers with a web site 'designed & developed in-house'
- 25 publishers owned & maintained the hardware & software systems
- Customers: UK & Europe = 50%, US & Canada = 29% and Pacific Rim 10%
- *"..the conflict between academics' pressure to publish more papers and the constraints on library budgets (needs) to be resolved urgently"* (pp 40)



Technology: what *could* online enable?

(Source: Mackie-Mason & Jankovich 1996)

- Perfect price discrimination: distinguishing user type, use type and quality.
- Extract value from new services:
 - **Hyperlink** “... some research working papers embed references to other papers.. making it possible to simply click on a reference and retrieve a copy.”
 - **Dynamic commentary.** “..peer review process may be replaced in part by dynamic, public commentary and response, Readers could post comments and critiques directly to the archive where an article is stored; authors could reply. In response... revised versions might be posted.... the review process might be more open, inclusive, timely, and dynamic.
 - **Social filtering.**” ..collect the ratings of networked users and then, based on some form of cluster analysis, dynamically match one user's preferences to the preferences of others to prepare recommendations e.g.*Firefly*



1996: Origins of The Big Deal?

- **PEAK project:** economics of e-delivery and the pricing of e-journals (Elsevier & U of Michigan 1996)
- Early pricing models tightly coupled online and print subscriptions: PEAK looked *only* at online access
- Decisions on access are (**obviously?**) ‘two layered’ – first institutions/libraries make purchasing decisions and then individuals decide what to access or purchase from this selection

- **Findings** “.. experiment was not definitive in its findings, it did establish certain principles that have influenced subsequent pricing models...”
- Essential message from librarians and user behavior showed a benefit of access to *comprehensive* collections- whole database beyond known print title preferences to demonstrate “use of articles from non-subscribed titles”
- Desire for choices and flexibility
- Statistical reports popular
- Yet if usage is metered it inhibits use through concern about exceeding some budget allocation



Business models: where does the money come from?

- Subscriptions, site licenses
- Advertising
 - Display/product
 - Classified/job
- Rights and translations
- Member fees
- Page charges and reprints
- Sponsorship: institutional or corporate
- 'Freemium': Free for lower value commodity, pay for higher value service
- Open access.....

Open Access “digital, online, free of charge, and free of most copyright and licensing restrictions” (Source: Suber)

- April 1999: **E-Biomed** proposed by Harold Varmus Director of NIH
- A free (government funded) online archive for the biomedical fields
 - Accessibility
 - Flexibility
 - Evolvability
- Peer review would be done by E-Biomed editorial boards
- Copyrights would be retained by authors if consent to free distribution
- Managed by a Governing Board on which all stakeholders would have a seat: researchers, editors, computer specialists, and funding agencies
- Name changed to **PubMedCentral** (Aug 1999) and preprints dropped
- **Fierce** opposition from publishers

- October 2003: Public Library of Science (PLoS) was launched...
- “To change the culture, we have to show that open, online journals aren't poorly reviewed, low-level stuff,” says Varmus

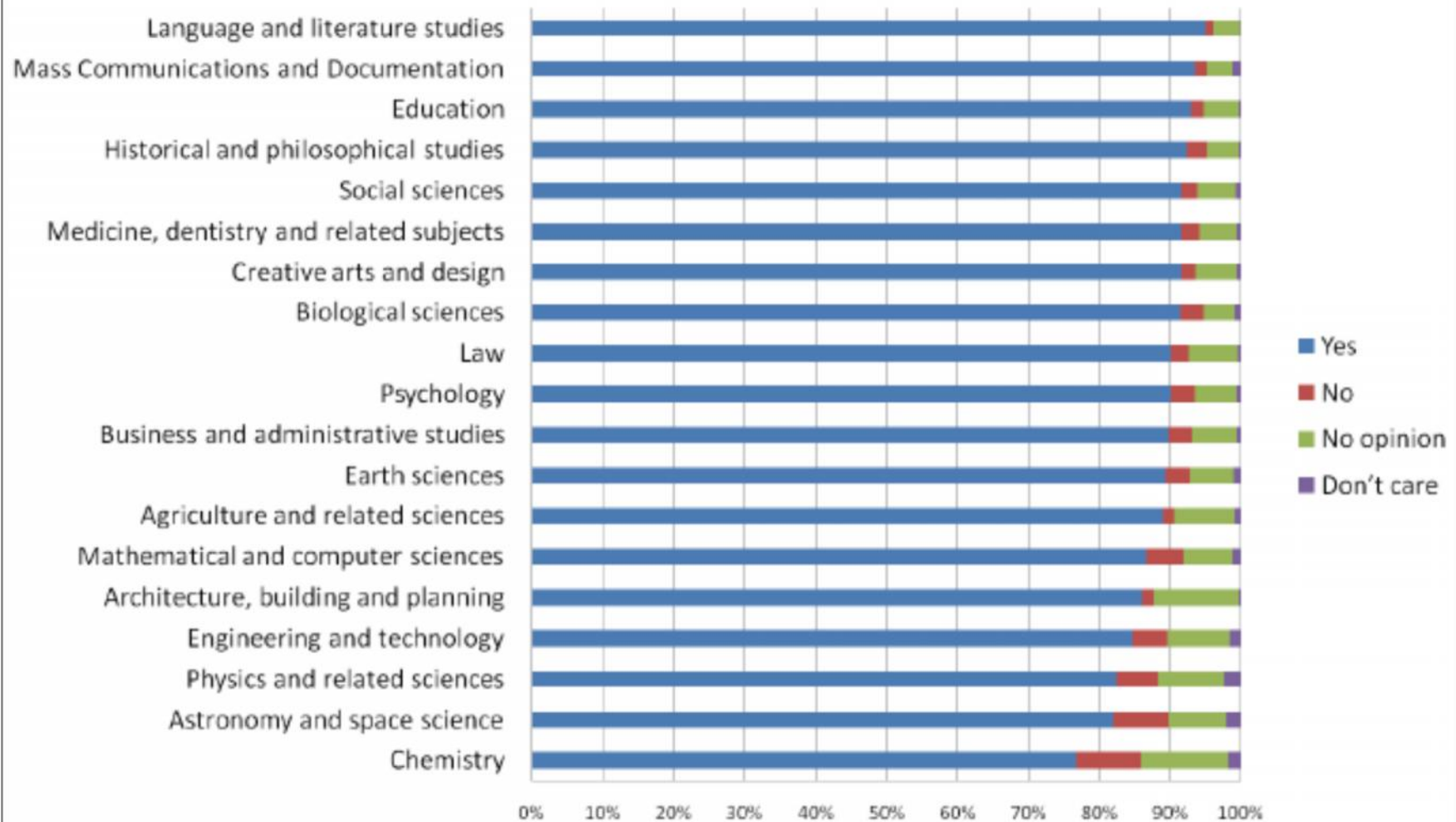
- *And now “Publishers, some initially resistant to this (OA) notion, have now largely embraced open access, not least because most funding bodies now make it a requirement for their grantees.”*

(Source: Knowledge, networks and nations: 2011)

SOAP symposium Jan 2011

What researchers think about OA publishing (Source: Lambert)

9. Do you think your research field benefits, or would benefit from journals that publish Open Access articles? (n=38,358)





ROI- measure usage!

- Then: “Usage of the print volumes was tracked by scanning of barcodes on journal volumes during the re-shelving process”
- Now: COUNTER codes of practice for online usage data:-
 - Journals and databases
 - E-resources
 - Books and reference works

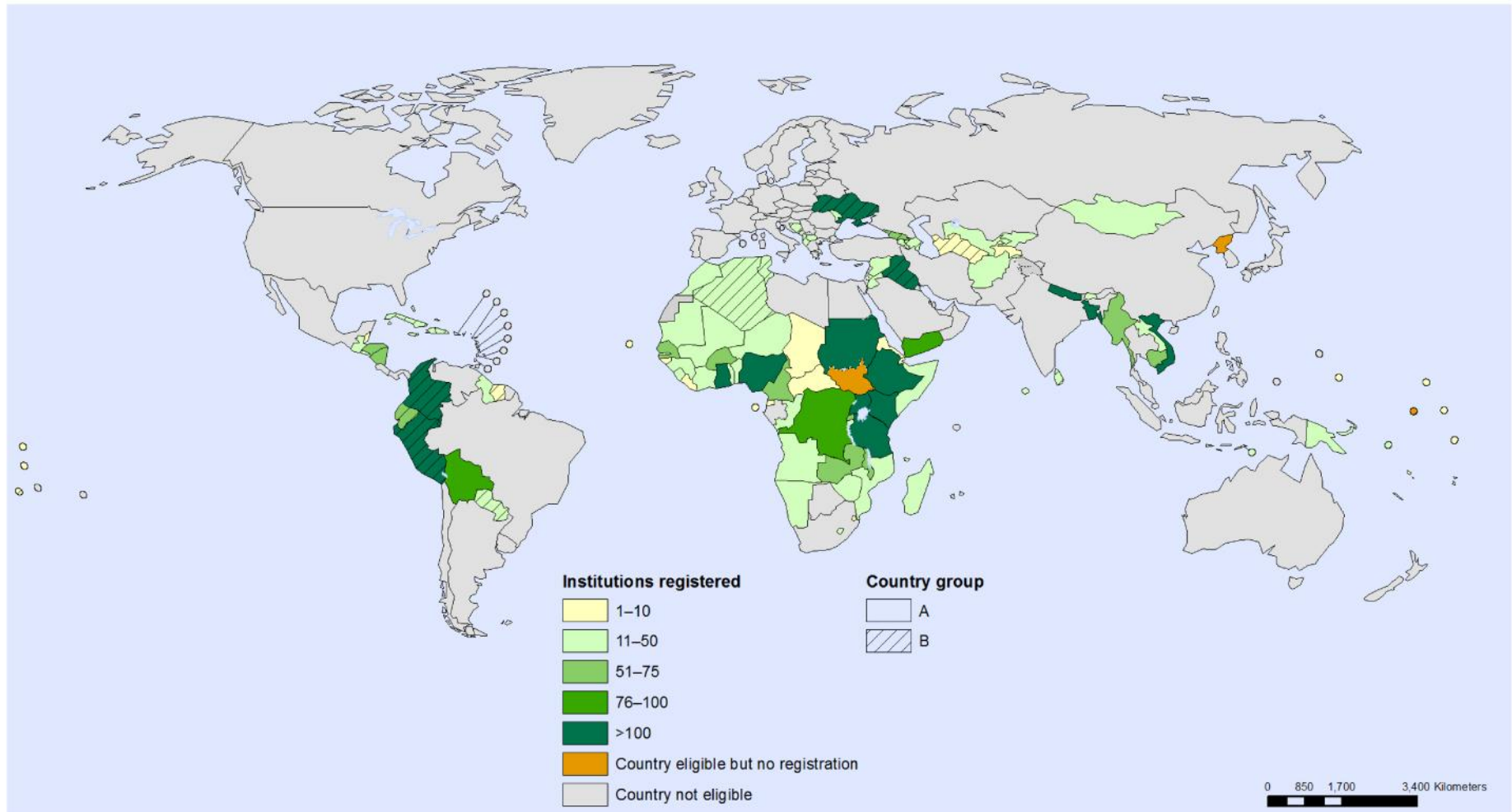
How 'important' is a journal/article?

- Then: "Impact (factor)" Garfield stated "is used to describe the effect of citations. Quality evaluation, however, requires more detailed content and context analysis."
- Now: Numerous measures – made possible by technology at the article and journal levels:
 - Citations- Scopus, Cross Ref, PMC, ISI, Google Scholar
 - Social networks –Citeulike, facebook, Mendeley & Twitter
 - Blogs and media coverage- research blogging, nature.com blogs, Google blogs
- Plus: Eigenfactor, Journal Usage Factor and H-index



Access

Institutions registered with HINARI



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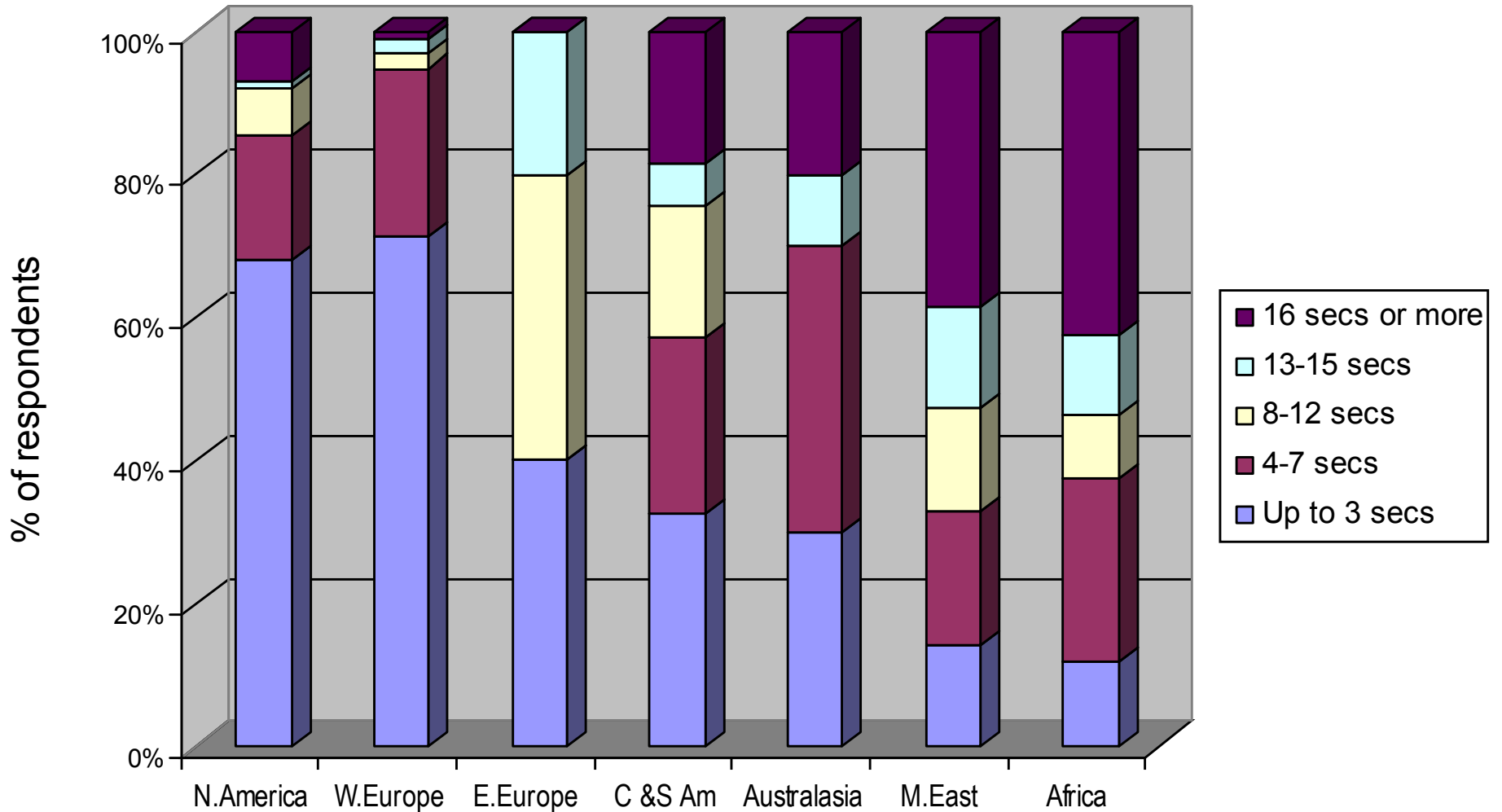
Data Source: World Health Organization
Map Production: Public Health Information
and Geographic Information Systems (GIS)
World Health Organization



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Access vs usability?

Speed of upload of (a simple) tropical health research agency home page (n = 574)



Transparency in communicating pricing to customers : those were the days....1990-1991

- Pergamon's *COMBUSTION AND FLAME* is increasing from \$375 to \$825
(Article page count increased by 249%, price by 220%)

- *MINERALS ENGINEERING* is increasing from \$140 to \$315
(Article page count increased by 203%, price by 225%)

- *APPLIED ECONOMICS*, published by Chapman and Hall (owned by International Thomson), is going up from \$425 to \$730 for 1991

(Article page count increased by 6%, price by 172%)

“It is apparently now a monthly **{had been since 1986}** and will increase to 14 issues for next year **{it did not}**. Included in the subscription price (there is no option to choose otherwise) the title *APPLIED FINANCIAL ECONOMICS*. These **{promised extra}** four issues, plus the two additional ones of *APPLIED ECONOMICS*, will “double the amount of material”.

This is all well and good, unless we don't want *APPLIED FINANCIAL ECONOMICS* and want to pay the lower price.”

....**Good point!?**

- *INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS* published by Gordon & Breach. Price in 1988 was \$987, in 1989 was \$2,746

(Article page count increased by 27%, price by 278%)



Publishers behaving badly (again)

- 2009: Elsevier sued Washington State University to prevent release of a site license contract giving details of prices paid. Case dismissed.
- 2009: University of Texas case “..we determine that Elsevier and Springer have failed to demonstrate ..that ...information meets the definition of a trade secret..”
(letter from Attorney General of Texas, Aug 2009)

Bundle prices charged to large research universities

(Source: Bergstrom)

<u>Bundle</u>	<u>Per cite</u>	<u>Per article</u>
Elsevier (U Mich)	\$3.16	\$15.16
Am Biochem Soc	\$0.20	\$0.95
Am Physical Soc	\$0.45	\$1.10
Am Soc for Microbiology	\$0.45	\$1.20
OUP (Colorado)	\$0.55	\$2.15
Am Chem Soc	\$0.65	\$2.85
Am Geophys Union	\$0.90	\$2.65
IEEE	\$1.05	\$2.25
Am Medical Assoc	\$1.05	\$5.90



Society and association publishers some strengths and weaknesses

“The not-for-profits' perks are the privates' profits” Garfield

- Membership = direct link to unique resource
- Size = nimbleness
- Mission driven
- Slow
- Short-sighted
- Weak marketing and market research
- Weak sales
- Weak business development
- Risk averse
- ‘Political’



Features that have not changed:

Readers want:-

- Accuracy offered by peer review “..to avoid the cost (in time) of reading bad articles.”
- Help with information overload
 - Distilled and well written arguments
 - Filtration
 - Reviews, commentary and analysis
 - Customized content
- To find what they want promptly and with accuracy
- Open system with few/no financial barriers *that they have to deal with*



Features that have not changed:

Authors want:-

- Prompt and professional communication
- Objective peer review – not settling old scores
 - Journal is clear and open about the role of reviewers – duty of confidentiality
 - Editors use reviewers to advise not do their job
 - Editor clearly is judge of manuscript and reviewers' comments
 - Rejection – easier to accept with a thoughtful reason
- Speed of publication
- Peer recognition, citations and impact-> visibility
- All their ideas to be published in full and widely disseminated

What can we learn?

- Know your customers – well
 - Academics are (usually) slow to get upset with publishers but often vocal and effective when they are
- Avoid cases that invoke the law
 - You may well lose (in a number of ways)
- One-way communication between stakeholders is doomed to falter
 - Develop a dialogue to anticipate (and resolve) differences
- Always consider alternative scenarios
 - Change is constant and inevitable
- Be open to new approaches
 - Experiment in the margin and beware the echo chamber effect
- Diversify revenue streams
 - Business stability depends on it



Thank you!

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