STM Industry in 2015

Michael A Mabe

CEO, STM

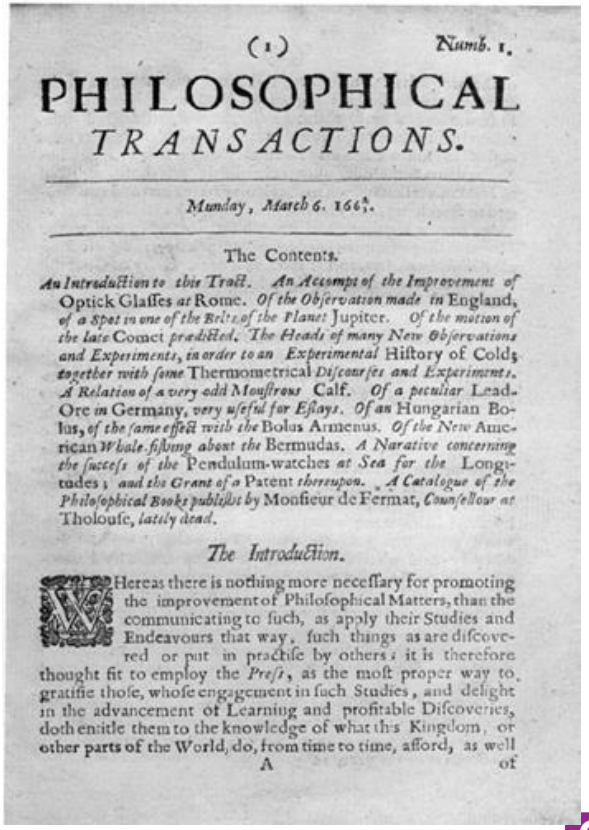
What is STM ?

- Global representative of scholarly publishing community
- Diverse membership of organisations
  - Not-for-profit, societies, university presses and commercial companies
  - New starts and long standing players
- Members responsible for over two-thirds of all annual article output and over half of active peer-reviewed titles

2015 is 350th Birthday of the Journal

Henry Oldenburg: inventor

First Issue 5 March 1665



(1) Numb. 1.

PHILOSOPHICAL
TRANSACTIONS.

Munday, March 6. 166⅝.

The Contents.

An Introduction to this Tract. An Accompt of the Improvement of Optick Glaſſes *at* Rome. *Of the Obſervation made in* England, *of a Spot in one of the Belts of the Planet* Jupiter. *Of the motion of the late* Comet *prædicted. The Heads of many New Obſervations and Experiments, in order to an Experimental* Hiſtory of Colds *together with ſome* Thermometrical *Diſcourſes and Experiments. A Relation of a very odd Mouſtrous* Calf. *Of a peculiar* Lead-Ore *in* Germany, *very uſeful for Eſſays. Of an* Hungarian Bolus, *of the ſame effect with the* Bolus Armenus. *Of the New* American *Whale-fiſhing about the* Bermudas. *A Narative concerning the ſucceſs of the* Pendulum-watches *at Sea for the* Longitudes; *and the Grant of a* Patent *thereupon. A Catalogue of the Philoſophical Books publiſht by* Monſieur de Fermat, *Counſellour at* Tholouſe, *lately dead.*

The Introduction.

WHereas there is nothing more neceſſary for promoting the improvement of Philoſophical Matters, than the communicating to ſuch, as apply their Studies and Endeavours that way, ſuch things as are diſcovered or put in practiſe by others; it is therefore thought fit to employ the *Preſs*, as the moſt proper way to gratifie thoſe, whoſe engagement in ſuch Studies, and delight in the advancement of Learning and profitable Diſcoveries, doth entitle them to the knowledge of what this Kingdom, or other parts of the World, do, from time to time, afford, as well

A of

STM

Journal@350

Royal Institution, London, 4 March 2015

STM
the global voice of scholarly publishing

The STM Report

An overview of scientific and scholarly journal publishing

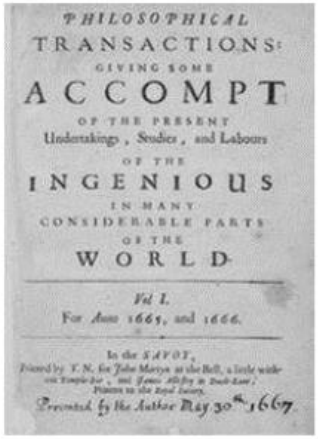
Celebrating the 350th anniversary of journal publishing

Mark Ware

(Mark Ware Consulting & Outsell, Inc.)

Michael Mabe

(International Association of Scientific, Technical and Medical Publishers)


PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD.
Vol. I.
For Anno 1665, and 1666.
In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little without Temple-Bar, and James Allestry in Duck-Lane; Printers to the Royal Society.
Presented by the Author May 30th 1667.

Fourth Edition

March 2015

STM

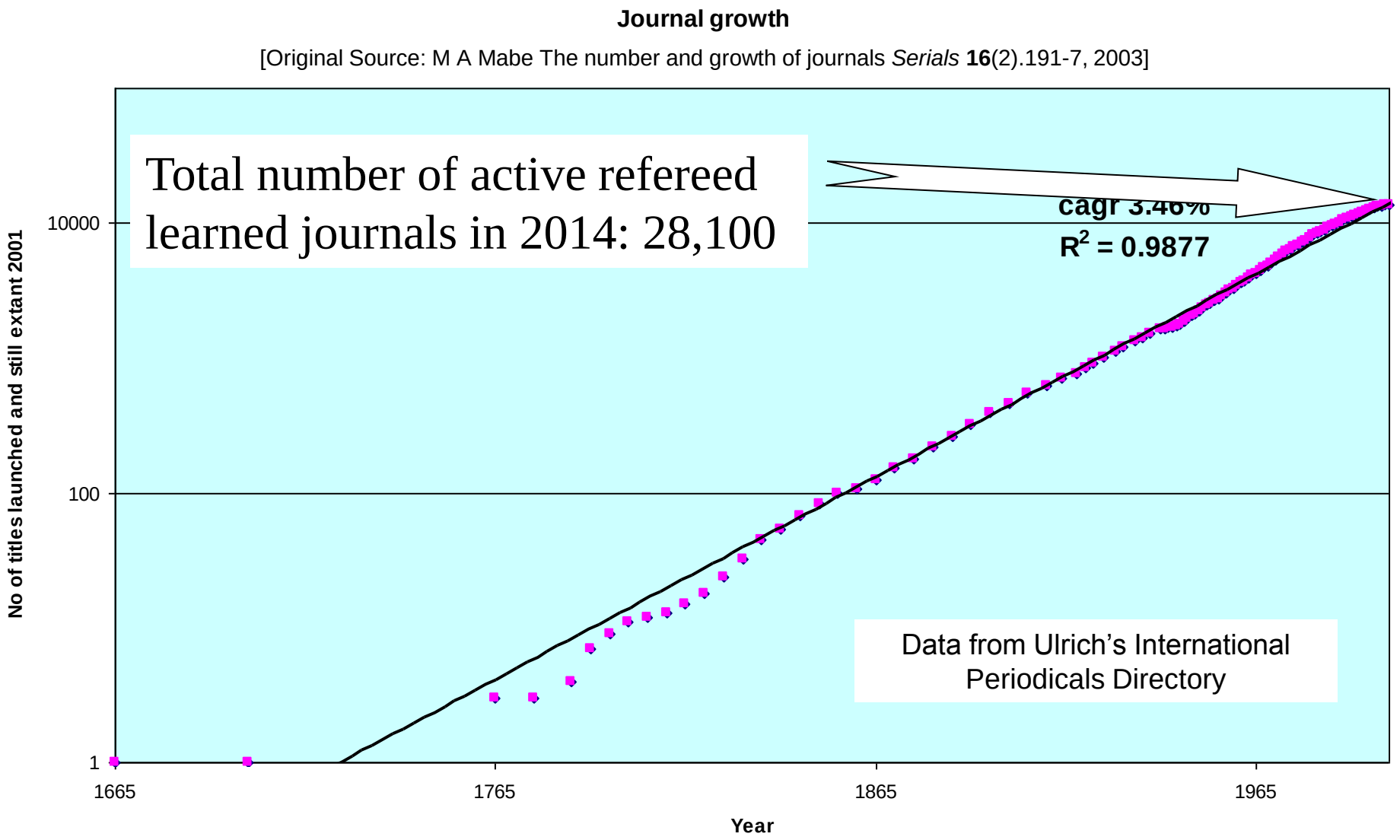
STM Market Characteristics

- Annual STM English language journal revenues about **US$10 billion** in 2013
  - CAGR 4.5% (2008 US$8 billion)
- Broader STM market (including books and datasets) about **US$25.2 billion** in 2013
  - STM Books worth ~US$5 billion; e books 17% and growing fast
- By geography
  - 55% US; 28% EMEA; 14% APAC; 4% RoW
- By employment: 110,000 globally
  - 20-30,000 in Europe

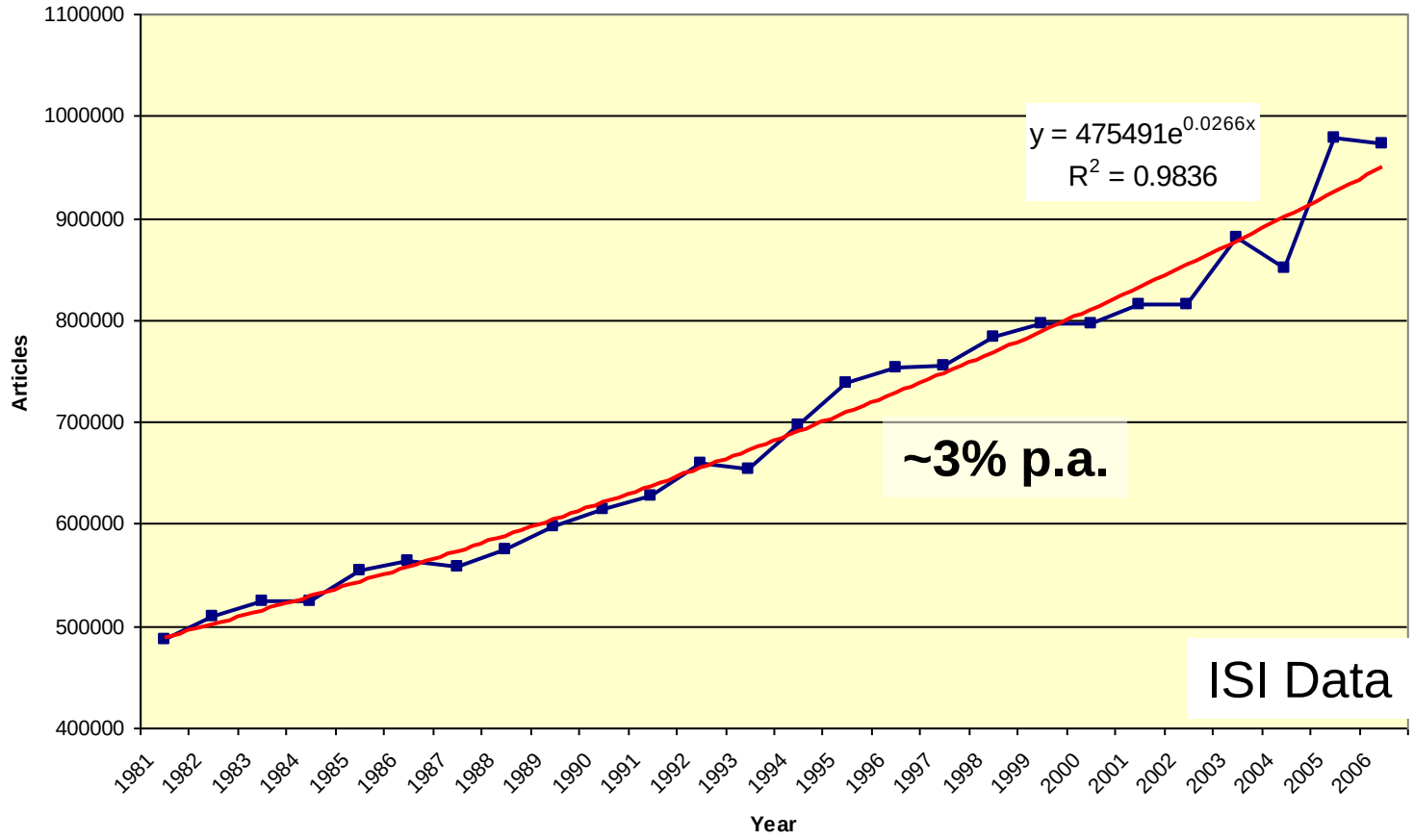
STM Journal Market

- 28,100 active scholarly peer reviewed journals exist late 2014
  - Growing at about 3.5%pa
- 2.5 m articles published per year
  - Growing at 3-4%pa
- USA dominates paper output still (23%) but China now in second place (17%)
  - US leads citations (36%), China 11th (6%)
- UK (7%), Germany (6%), Japan (6%) and France (4%)

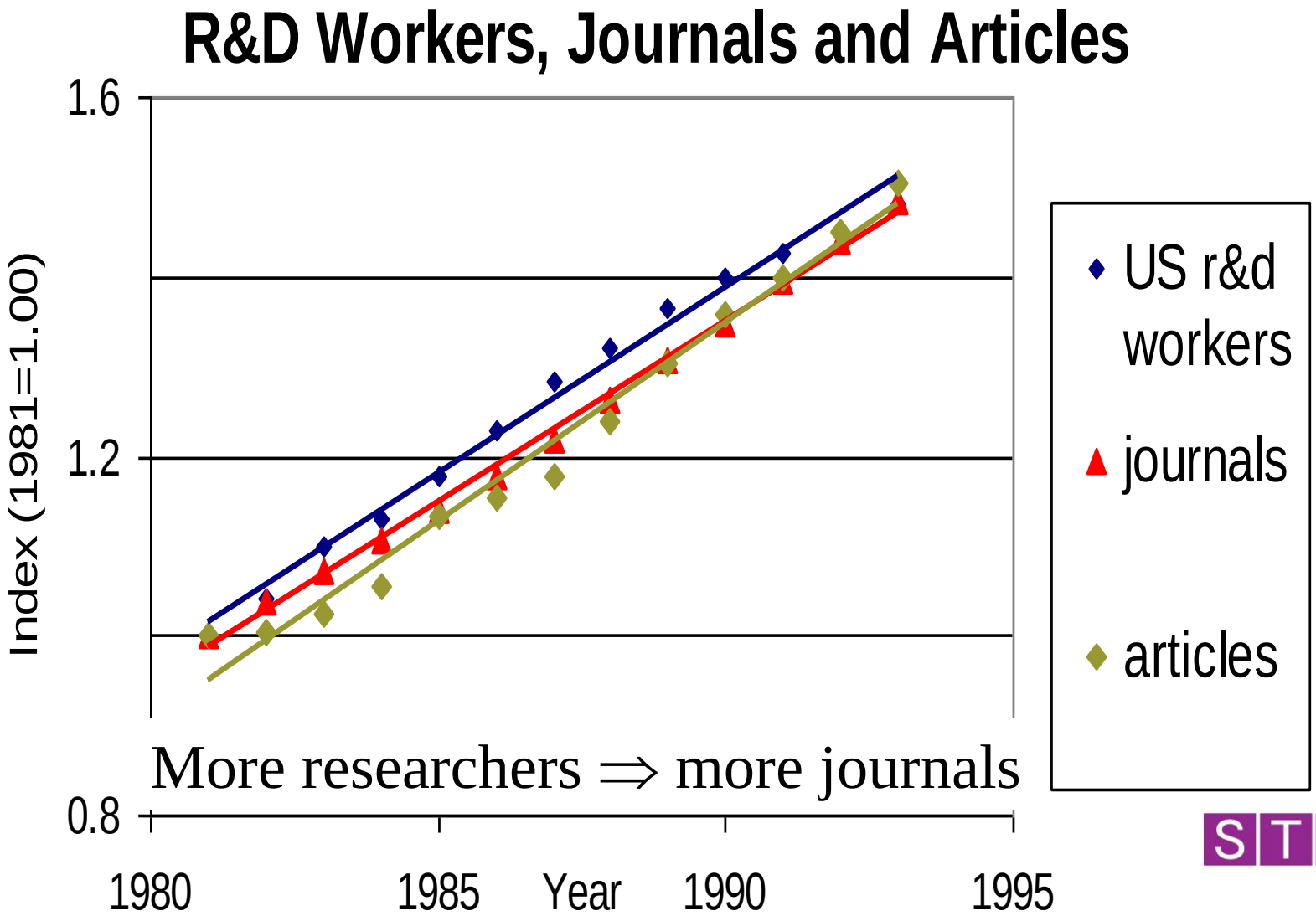
Journal Growth 1665-2014



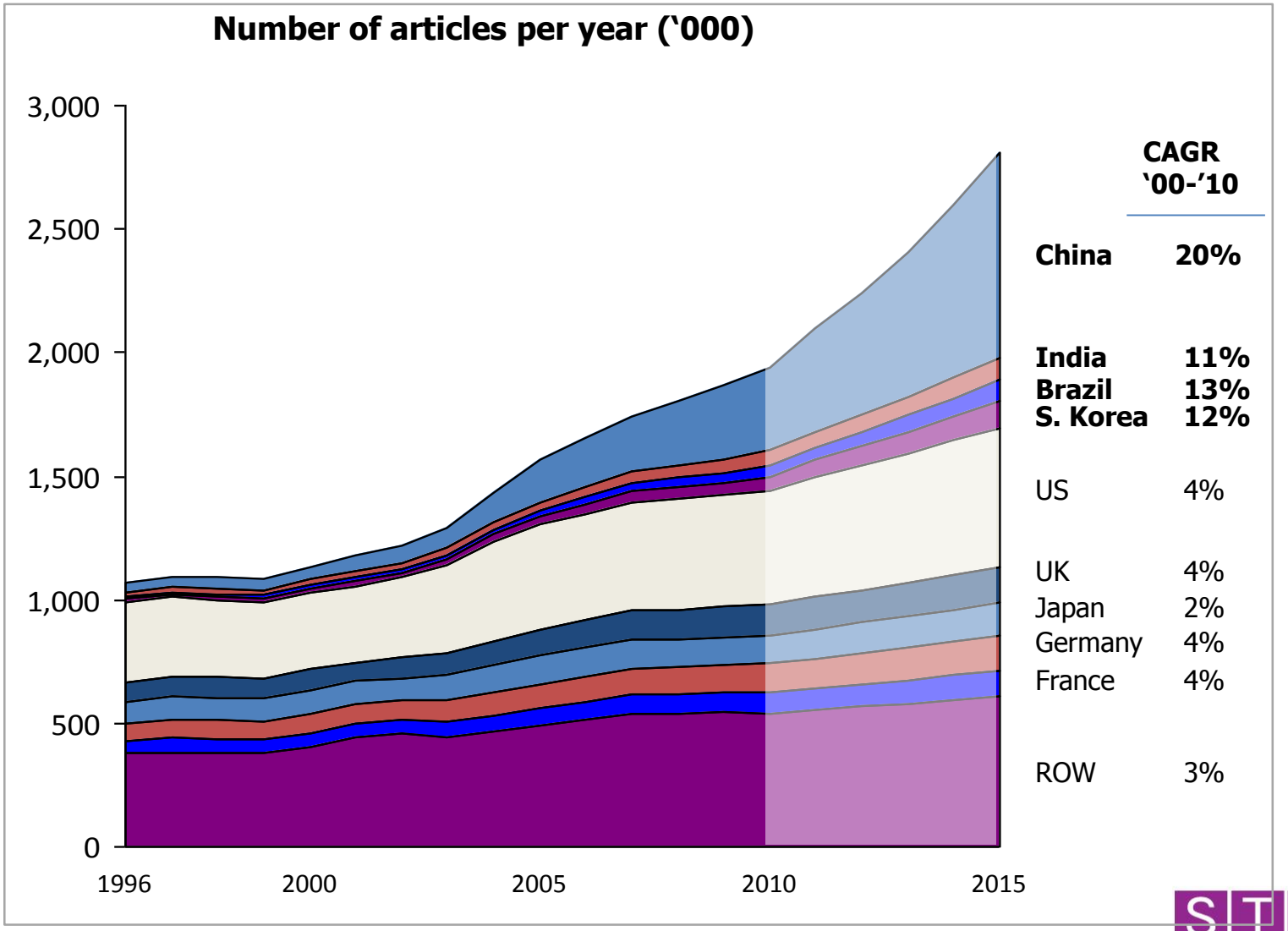
Article Growth 1981-2006



Relationship of Journals & Researchers



World Share of Articles

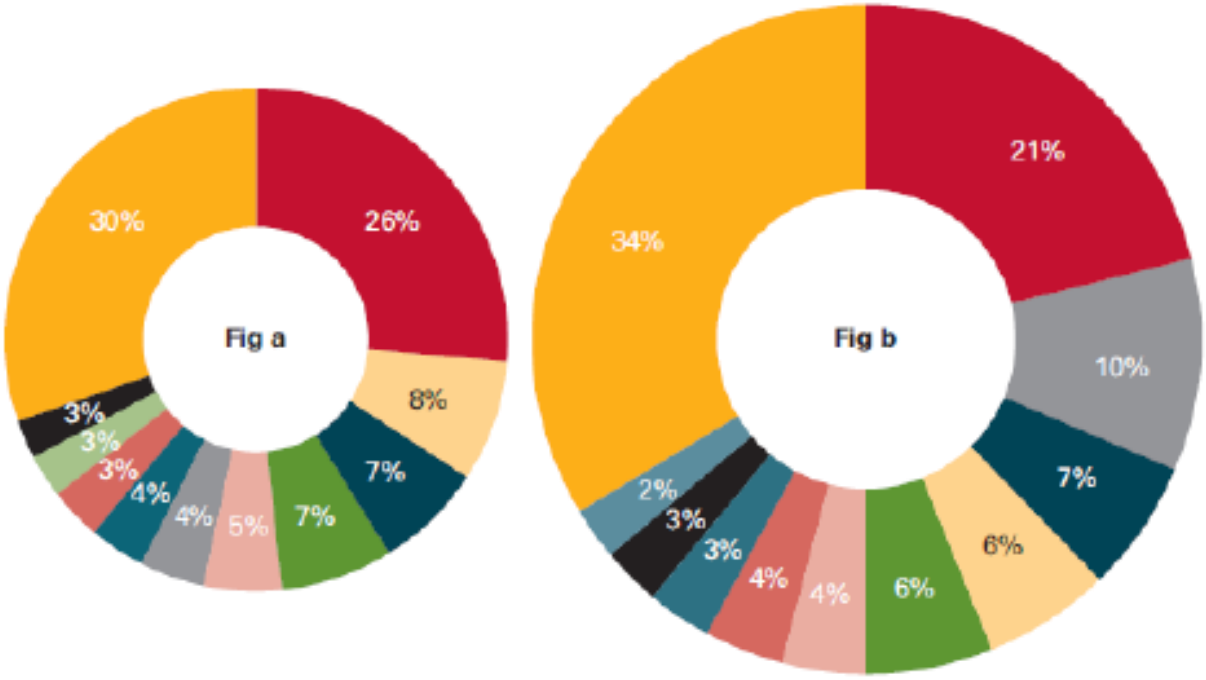


Source: Scopus; projections based on trend information

Global Article Authorship

1999-2003
5.49M

2004-2008
7.33M



Knowledge, networks, nations: Global scientific collaboration in the 21st century.
RS policy document, March 2011 – data from Scopus

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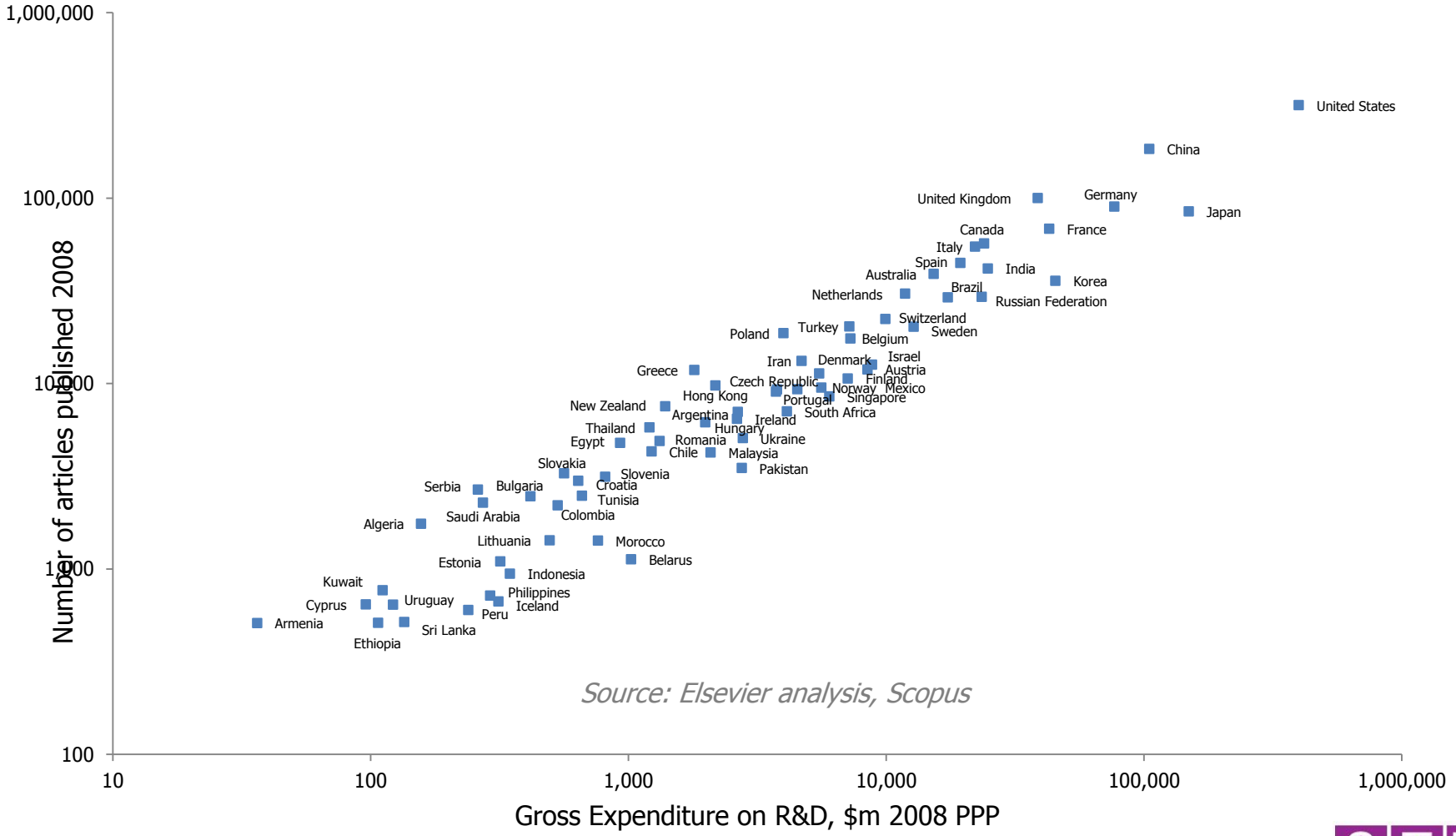
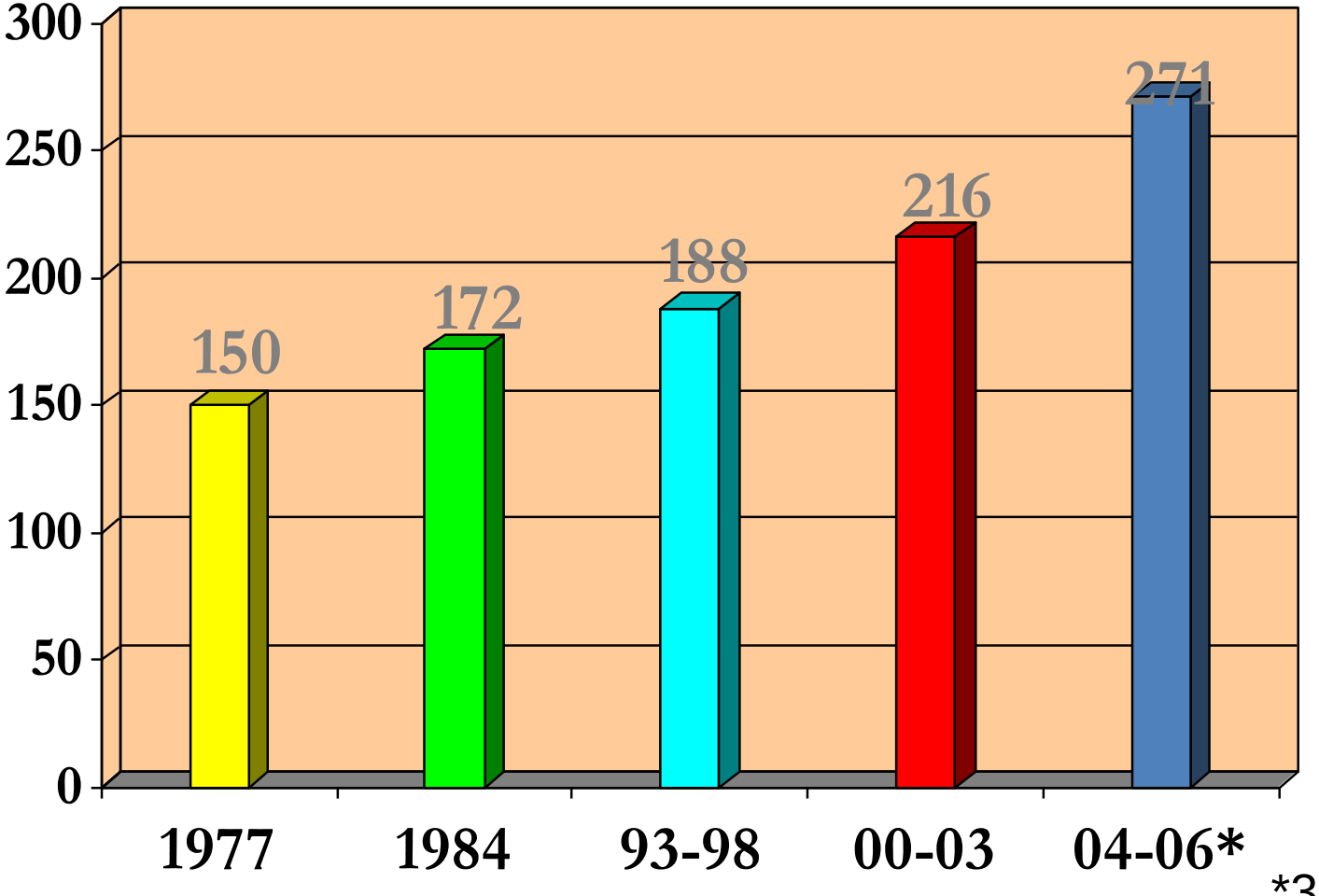
R&D Spend and Published Papers



Researchers

- Researcher core motivations for publishing unchanged
- Reading patterns are changing
  - Reading more (270 articles pa)
  - Reading times down (just over 30 min)
  - Search dominates over browse (discipline variation)
  - Very little time spent on publisher web sites
- Peer review viewed as fundamental
  - Much experimentation but little support for post publication review

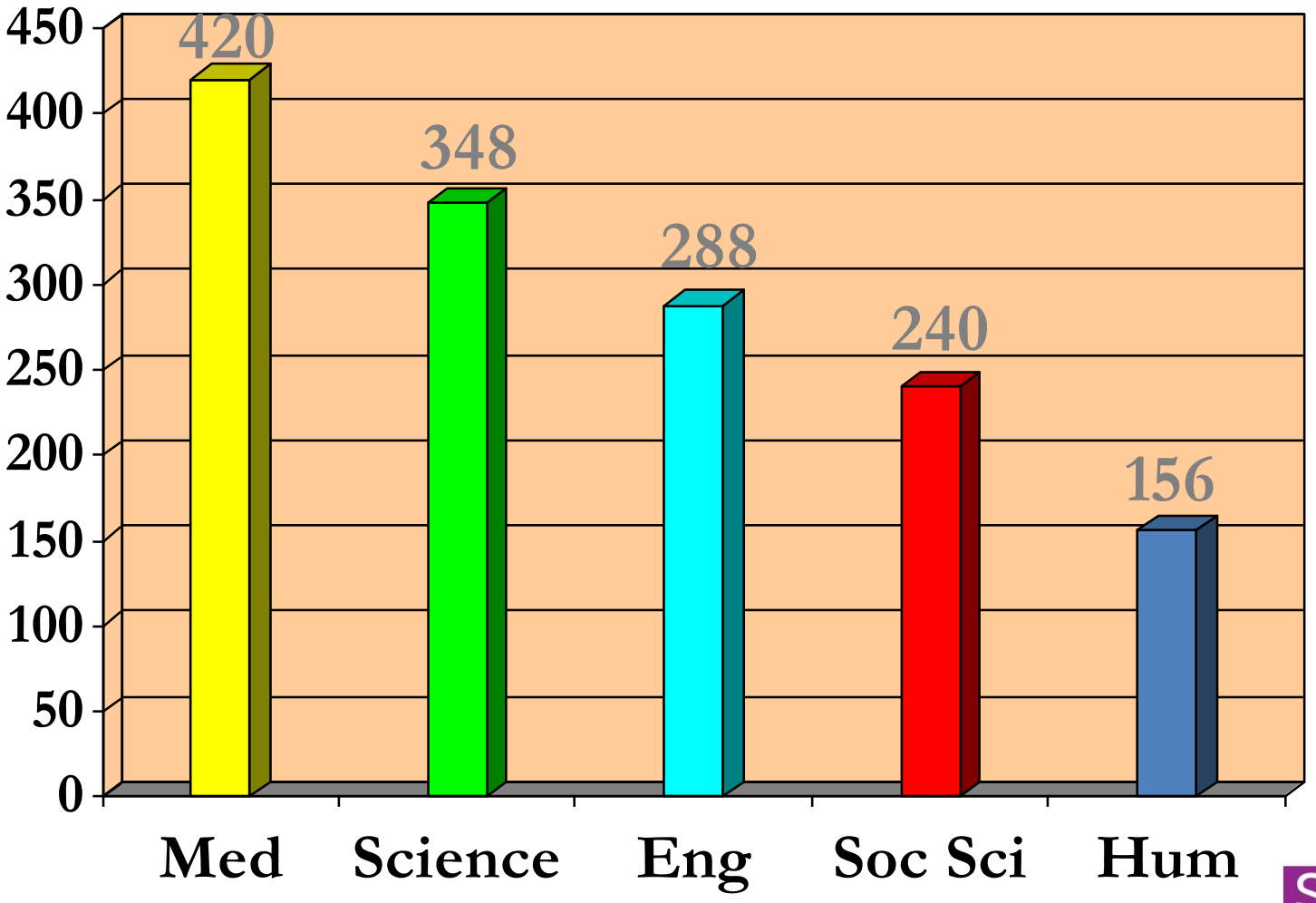
Average Articles Read per University Faculty Member per year



*311 with outliers

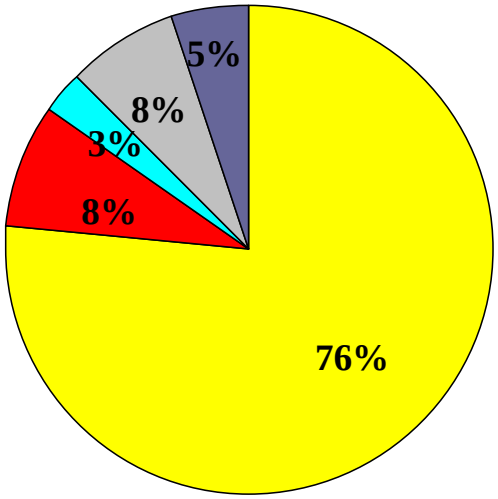
Source: Carol Tenopir

Average Articles Read per University Faculty Member per year

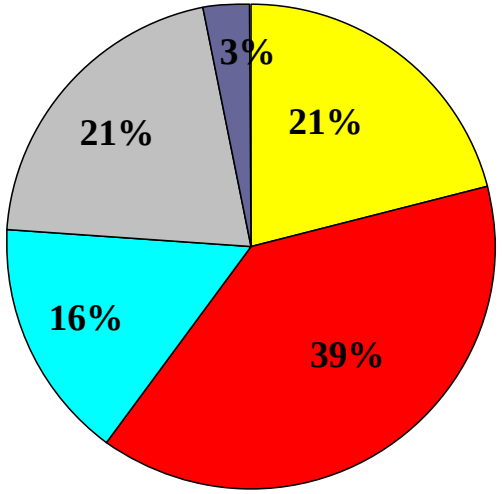


Source: Carol Tenopir

More Subject Differences



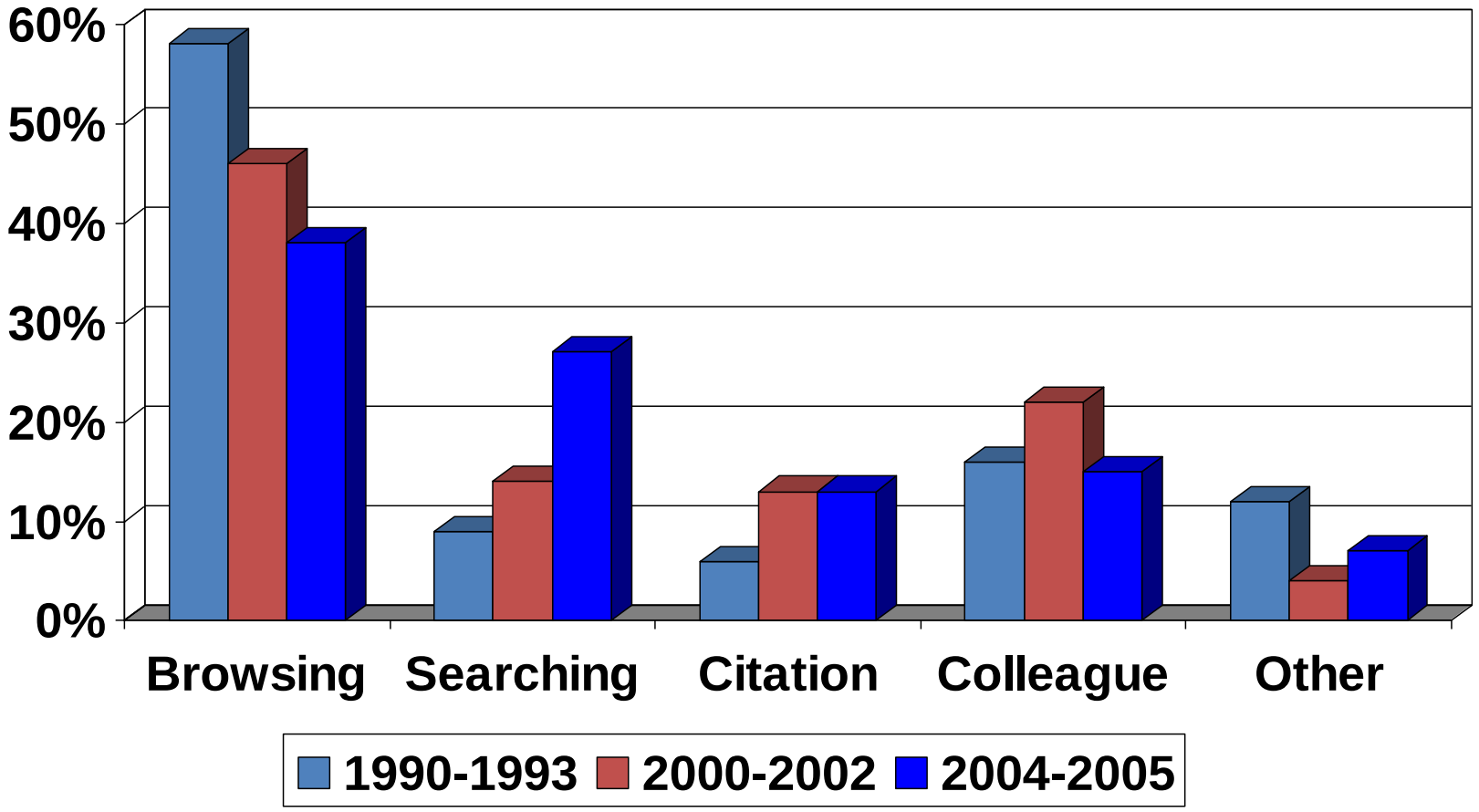
Pediatricians



Astronomers

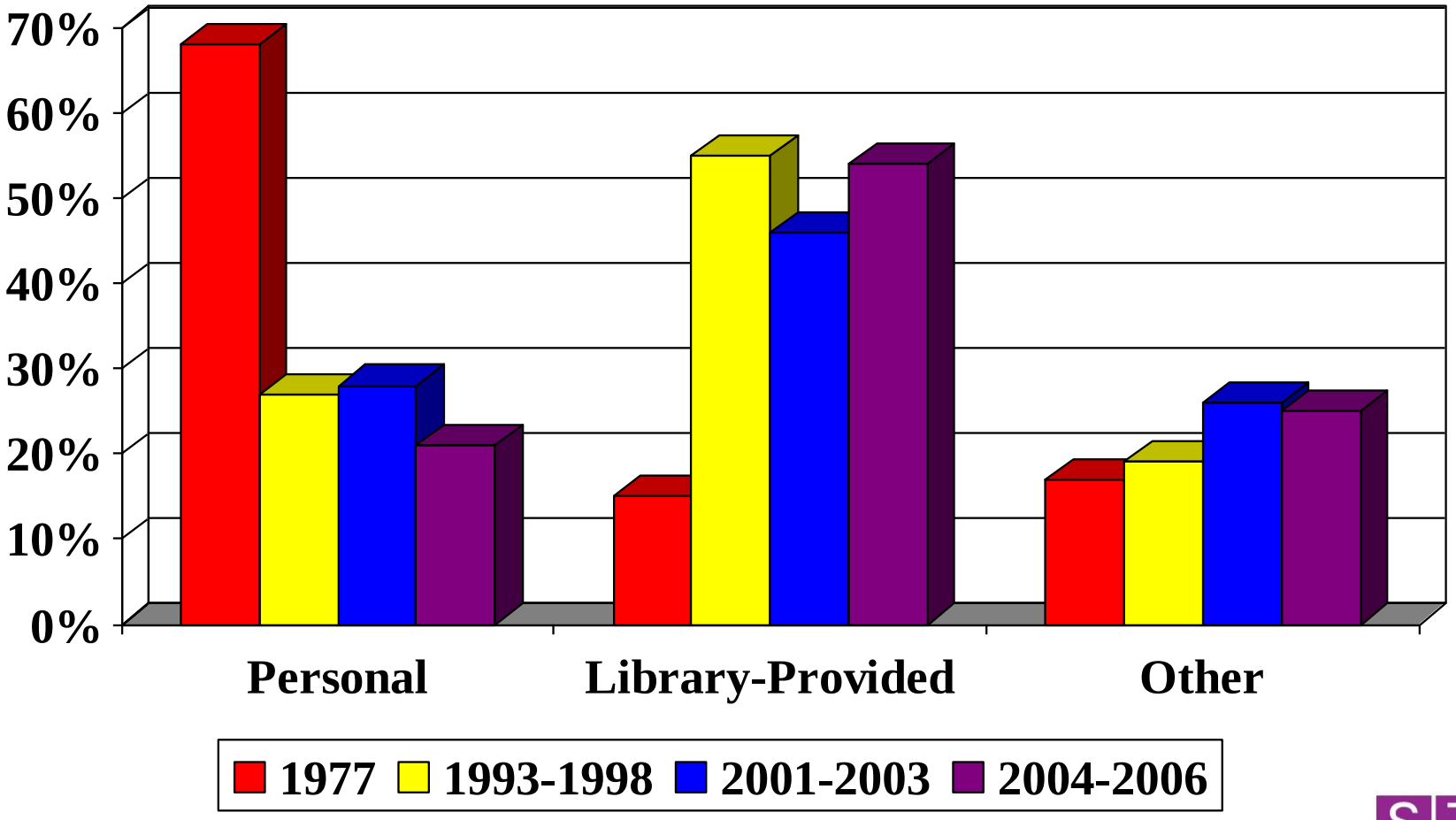
Source: Carol Tenopir

Faculty Use Many Ways to Locate Articles



Source: Carol Tenopir

Sources of Readings of Articles



Source: Carol Tenopir

Technology

- Virtually all STM journals are online
- Social networks have yet to make same impact in STM space as consumer media
- Except for healthcare professionals mobile devices have yet to significantly change how researchers interact with content
  - Less than 10% of STM platform traffic from mobiles
- Data, data, data!
  - Policies for deposit and sharing (RDA)
  - Data citation (DataCite)
  - Data journals
- TDM
  - CrossRef TDM tools, CCC and Infotrieve services

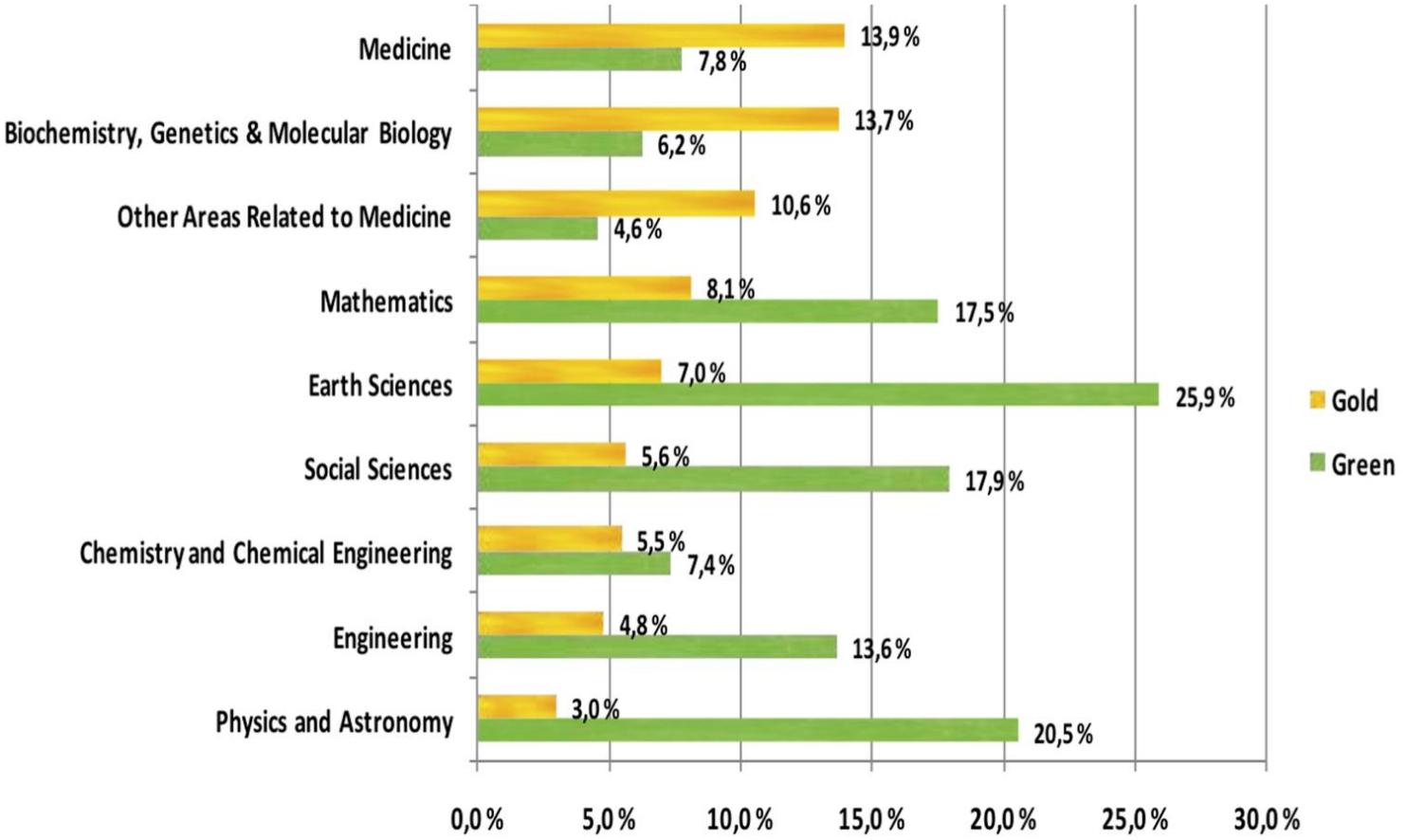
Business Models

- Aggregation the norm; licensing still dominant
  - Supply side: the Big Deal
  - Demand side: Consortia
- Access to STM content at an historic high
  - Annual fta downloads greater than 2.5 billion
- National site licences and public library access
- *Research4Life* provides free or very low cost access for 7,700 institutions in 109 developing nations to nearly 20,000 journals

Open Access

- Degree of penetration of various OA models is complex (not least because OA models are not all well defined)
- DOAJ lists 10,090 (7,245 in English) OA journals
- Overall OA article penetration about 27-29% *not the* EC study 50%!
  - 12% (Gold or articles in OA journals)
  - 5% (Delayed access on publisher websites
  - 10-12% (self-archived copies)

OA Variability by subject



Source: Björk et al. 2010

Trends Since 2012 Report

- Web is now dominant
- Social networks yet to take off
  - Those that do exist are used mainly for reference or article sharing rather than social interaction
- Smart phone adoption – limited impact
  - except tablets with healthcare professionals (curiously appropriate one feels!)
- Access levels are high and continue to grow
  - 2.5+ billion downloads at very low cost ($1 per paper)
- Big deal licensing remains majority model
  - Some criticisms but likely to evolve rather than die out
  - Still business model for 70+% of articles

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Trends Since 2012 Report

- Globalisation continues apace
  - China moving to lead in article output
  - India and Brazil expanding research base
- In 2012 clear policy shift to Gold OA identified but in 2015 more Green tinted
  - Virtually all funders will pay for Gold APC but policies lean heavily to Green
  - Green = “nobody pays” model attractive for policy makers
  - Publisher unpopularity and lack of trust a major issue here

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Future Prospects?

- Some constants in fast changing world
  - Oldenburgian functions remain fixed (registration, dissemination, certification and archive)
  - Author motivations remarkably constant
  - BUT mega journals seem to run counter to this
- Growth in volume and complexity
- Increased focus on data
- Open access transition will continue
  - Momentum for uptake remains but may stall at a mixed market position
  - Will apc rates rise or fall or stratify?
  - Top (high rejection rate) journals remain subscription-based?
  - Embargo periods remain of much debate but not change much?
  - OA in books and educational resources
- Accelerating pace of market and technology innovation
  - Set in part by leading consumer brands

Dangers of Prediction

- Alexander Graham Bell demonstrates the telephone in London in 1878

The telephone is little better than a toy, it amazes ignorant people for a moment, but it is inferior to the well-established system of airtubes.
—*Saturday Review 1878*

The Americans have need of the telephone, but we do not. We have plenty of messenger boys.
—*Sir William Preece, Chief Engineer, British Post Office (1878)*