

Open Access: Whose value, what value?

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SPARC Europe

Key Perspectives Ltd

Enabling Open Scholarship

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Open Access: Who benefits?

- 🌐 Researchers
- 🌐 Institutions
- 🌐 National economies
- 🌐 Science and society



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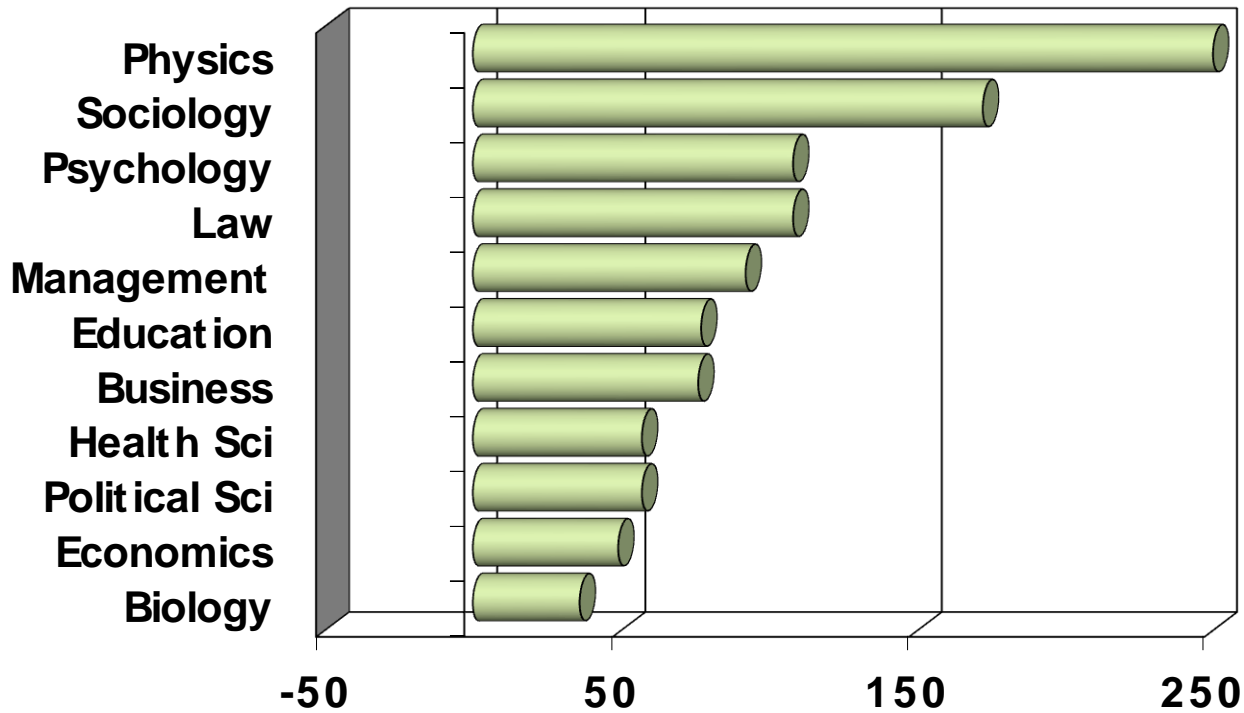
Researcher value from Open Access

- Visibility
- Usage
- Impact



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Impact



% increase in citations with Open Access

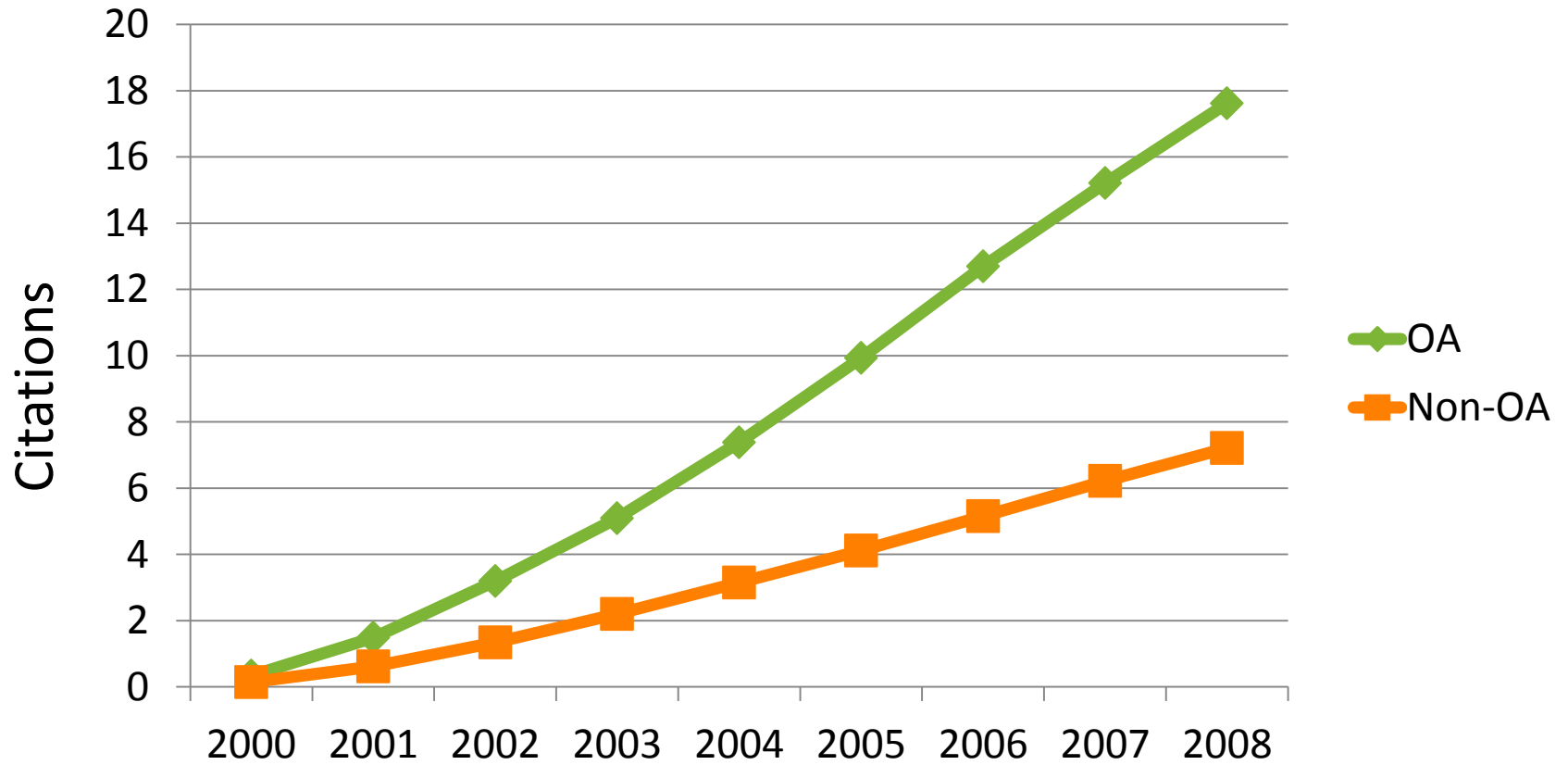
Range = 36%-200%

(Data: Stevan Harnad and co-workers)



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Engineering

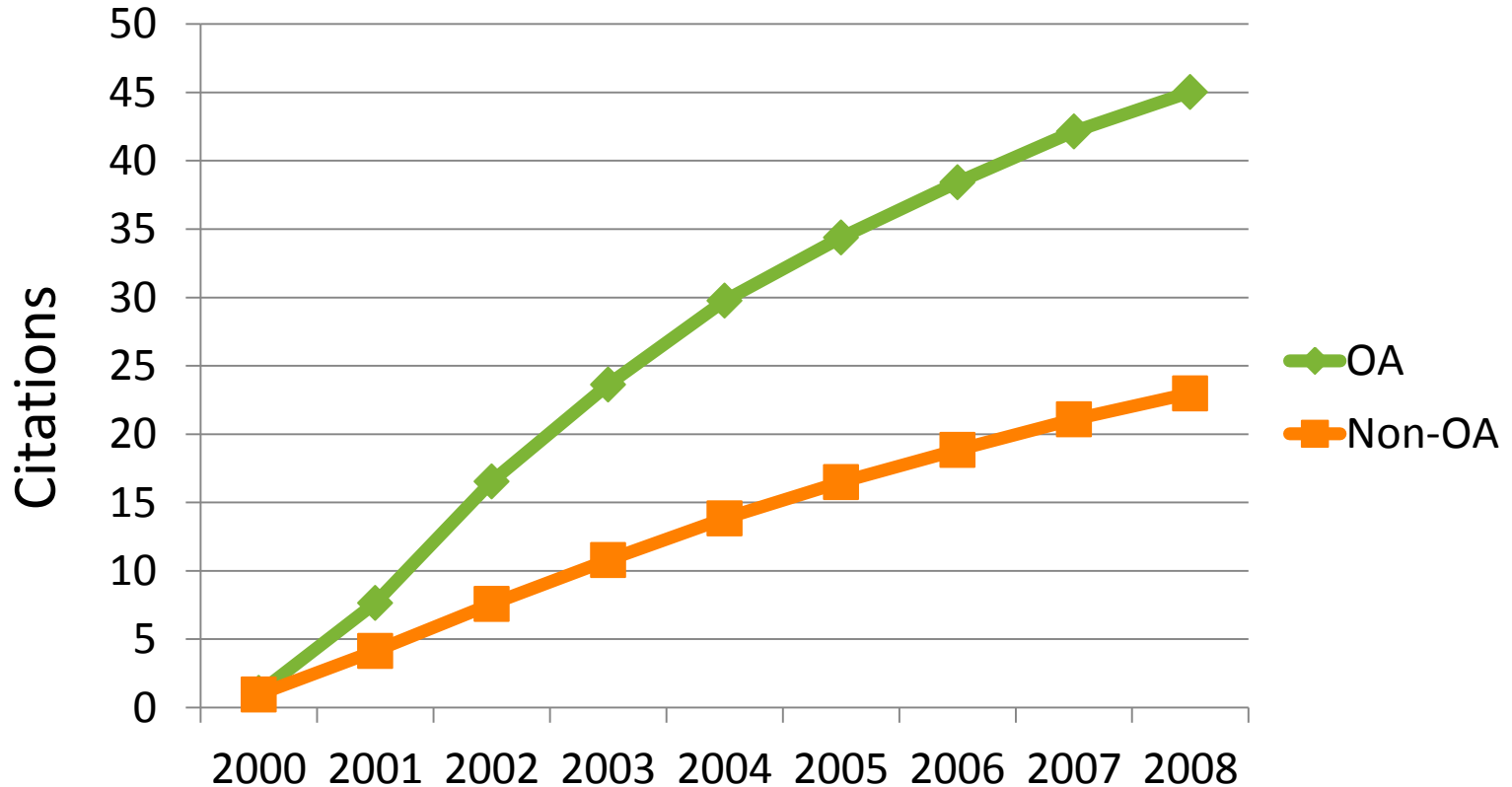


Data: Gargouri & Harnad, 2010



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Clinical medicine

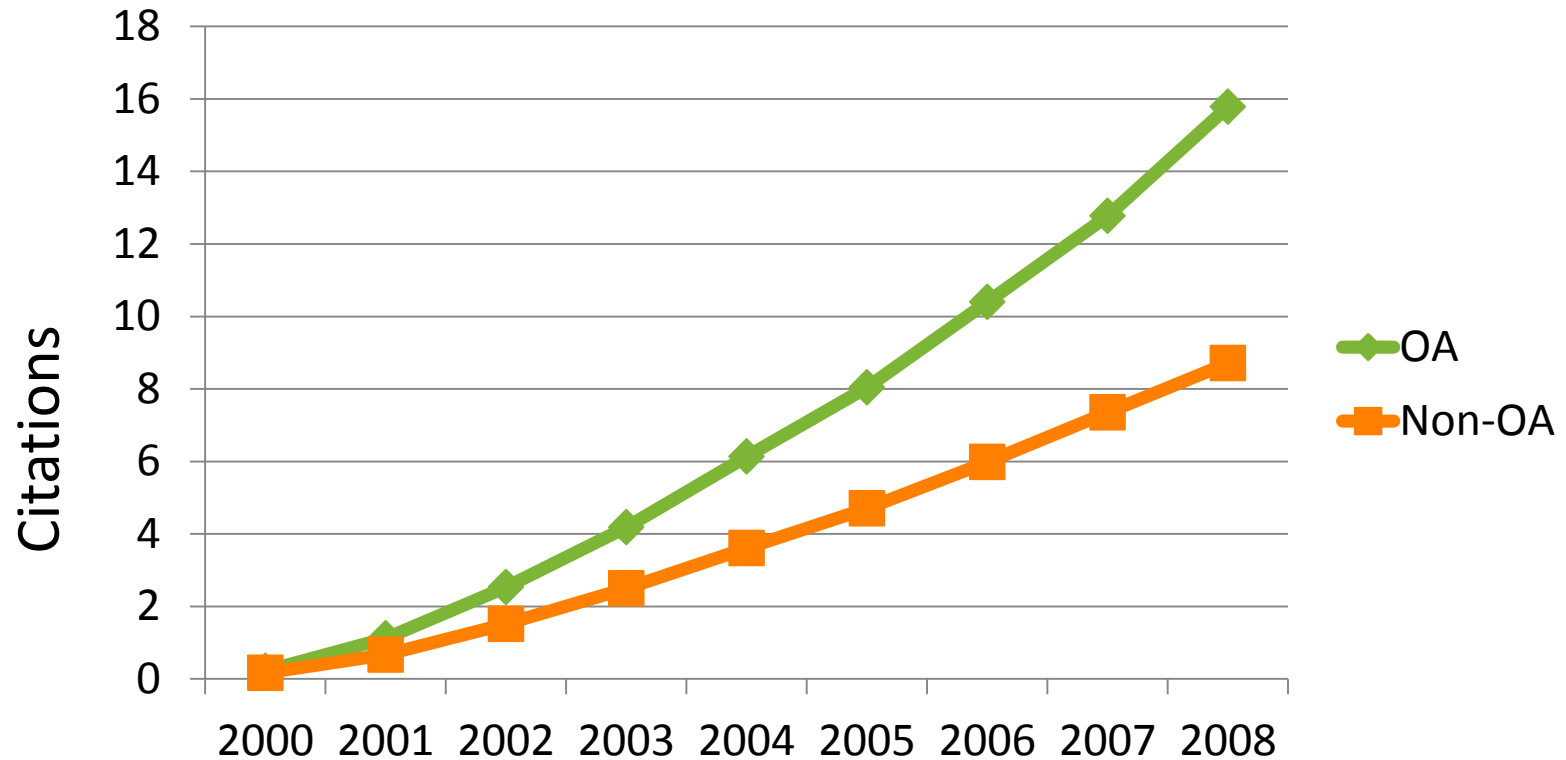


Data: Gargouri & Harnad, 2010



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Social science



Data: Gargouri & Harnad, 2010



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Institutional value from Open Access

- 🌐 Visibility
- 🌐 Usage
- 🌐 Impact
- 🌐 Institutional profiling and marketing



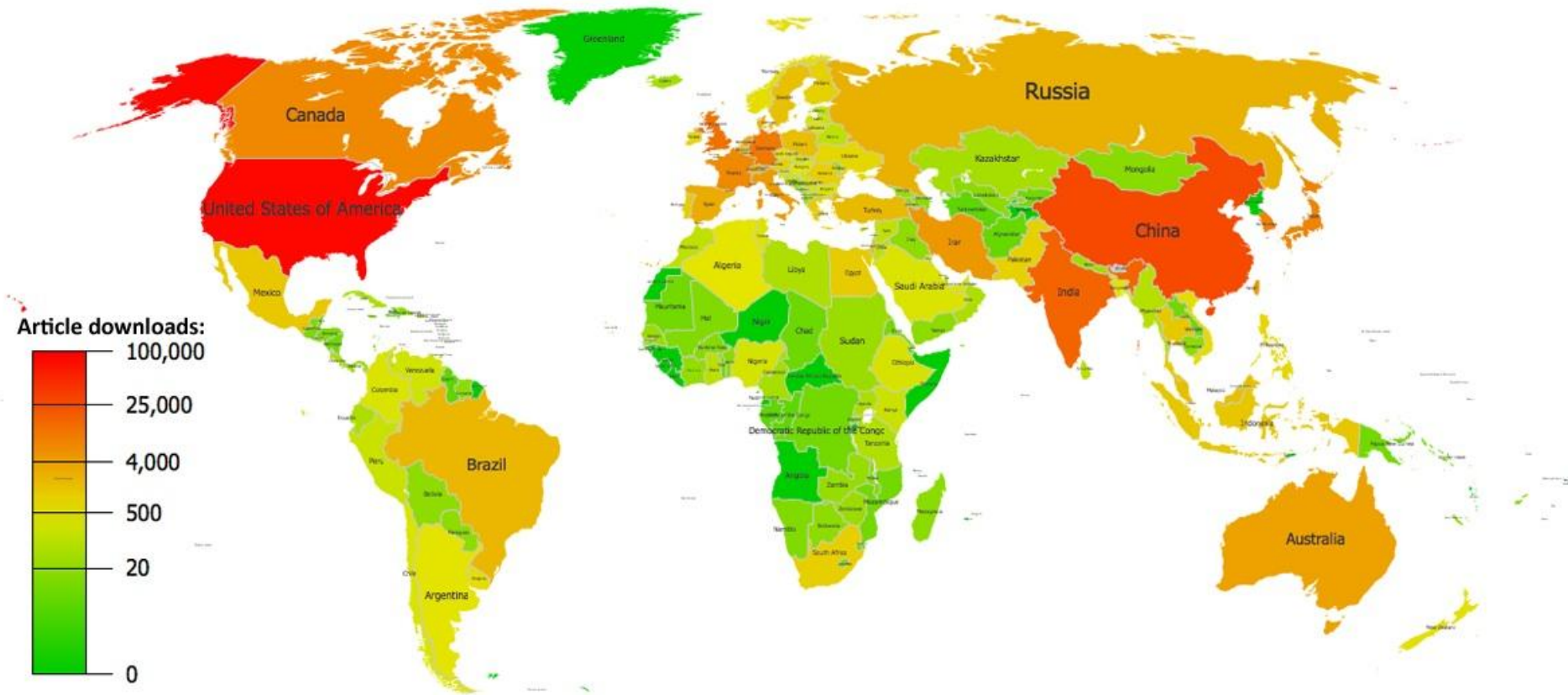
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A School-level repository's usage



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And MIT's repository usage



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Webometrics

July 10

home world countries world rank rank by country european rank latin american rank

> home > top Europe

Rank Data

About Us

About the Ranking

Top 12000 Universities

Premier League (Excel Files)

Top USA & Canada

Top Latin America

Top Europe

Top Cent. & East. Europe

Top Asia

Top South East Asia

Top South Asia

Top Arab World

Top Oceania

Top Africa

Top Sub-Saharan Africa

Country Scoreboard

Best Practices

Notes (*/**)

Top Europe

Universities 1 to 100 of 100

CONTINENT RANK	UNIVERSITY	COUNTRY	WORLD RANK	POSITION			
				SIZE	VISIBILITY	RICH FILES	SCHOLAR
1	University of Cambridge		22	15	18	54	97
2	Swiss Federal Institute of Technology ETH Zürich		40	38	57	73	15
3	University of Oxford		41	55	30	68	115
4	University of Edinburgh		52	96	50	63	86
5	University of Oslo		53	58	98	35	46
6	University of Helsinki **		59	73	87	48	55
7	Norwegian University of Science & Technology		61	40	117	71	26
8	University College London		63	107	69	70	72
9	Universität Wien		69	82	118	92	18
10	École Polytechnique Fédérale de Lausanne		72	30	128	83	64
11	Université de Geneve		75	79	67	84	292
12	University of Southampton		85	167	91	150	21
13	Università di Bologna		86	121	104	94	71
14	Université Paris 6 Pierre and Marie Curie **		90	94	84	74	254



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“I am asked how many articles my researchers publish each year, and I have to say ‘I have no idea!’”

Professor Bernard Rentier, Rector, University of Liege, Belgium, explaining one of the reasons why he has built an institutional Open Access repository and introduced a mandatory policy on Open Access



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“The case for Open Access within a university is not simply political or economic or professional. It needs to rest in the notion of what a university is and what it should be It is central to the university’s position in the public space”

Professor Martin Hall, Vice Chancellor of the University of Salford



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Value to science and society

- Knowledge becomes more valuable through greater usage
- Open Access would be a cheaper system
- Science moves faster and more efficiently
- The economic returns are only just about imaginable



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PubMed Central

- 🌐 2 million full-text articles
- 🌐 420,000 unique users per day:
 - 25% universities
 - 17% companies
 - 18% government and others
 - 40% citizens
- 🌐 N.B. Thousands of journals voluntarily submit author manuscripts and hundreds of publishers voluntarily submit published PDFs



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National pictures

(Houghton et al, 2009, 2010)

Annual € savings from moving to:	UK	Netherlands	Denmark	US federal agencies
OA journals ('Gold' OA)	480 million	133 million	70 million	Value of benefit over 30 years amounts to some \$1 billion, 6 times the cost of archiving the material
OA repositories with subscriptions ('Green' OA)	125 million	50 million	30 million	
OA repositories with overlay services	Circa 480 million	Circa 133 million	Circa 70 million	

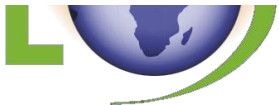
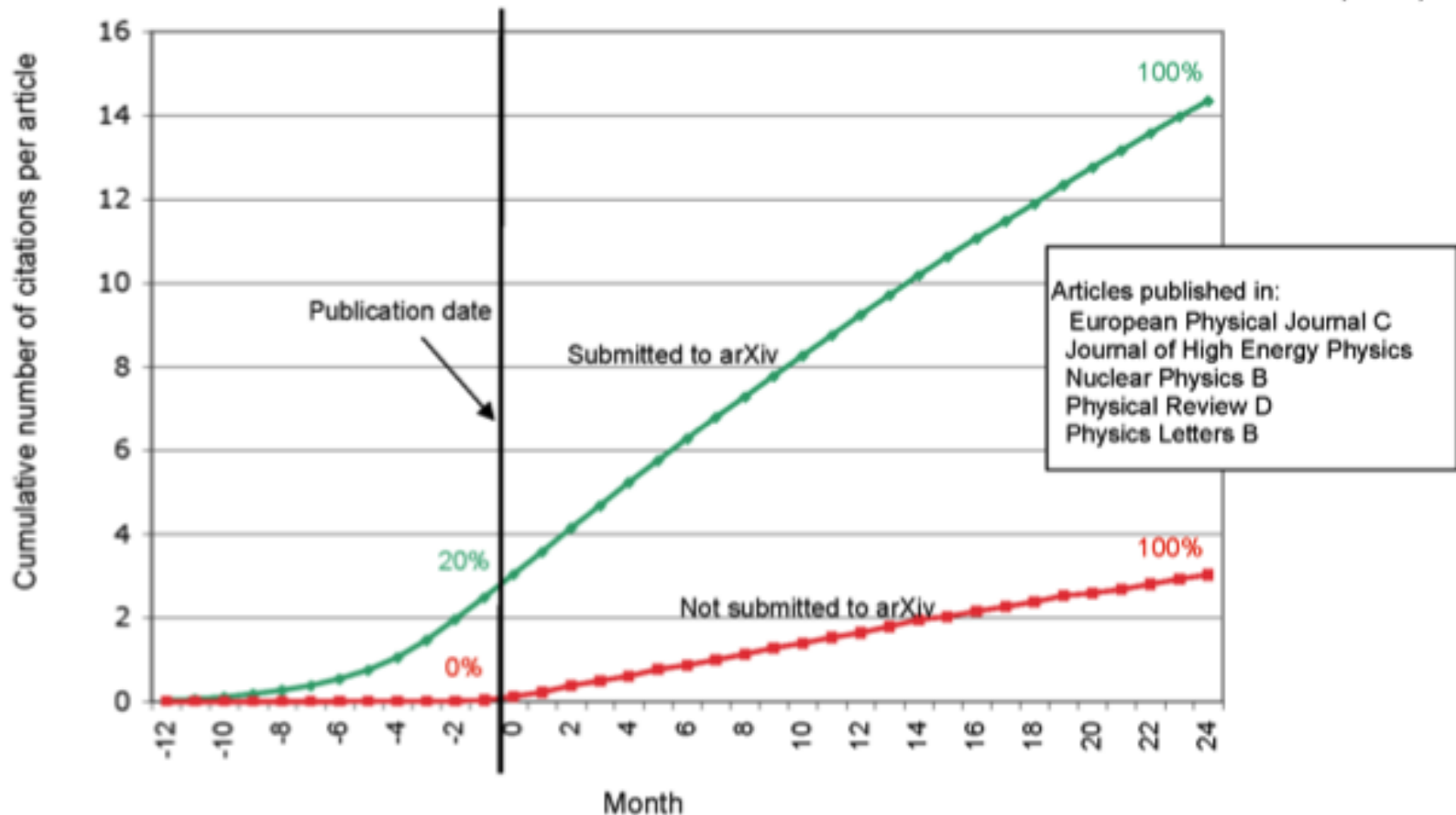


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The early bird ...

arxiv:0906.5418

Gentil-Beccot, Mele, Brooks



HUGO

\$3.8 BILLION INVESTMENT IN HUMAN GENOME PROJECT DROVE \$796 BILLION IN ECONOMIC IMPACT CREATING 310,000 JOBS AND LAUNCHING THE GENOMIC REVOLUTION

"Genomic Revolution" Forging Major Breakthroughs in Medicine, Agriculture, Security & Justice, and Energy and Promises to Create Significantly More Jobs in the Future

WASHINGTON, D.C. — The \$3.8 billion the U.S. government invested in the Human Genome Project (HGP) from 1988 to 2003 helped drive \$796 billion in economic impact and the generation of \$244 billion in total personal income, according to a study released today by Battelle. In 2010 alone, the human genome sequencing projects and associated genomics research and industry activity directly and indirectly generated \$67 billion in U.S. economic output and supported 310,000 jobs that produced \$20 billion in personal income. The genomics-enabled industry also provided \$3.7 billion in federal taxes during 2010.



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HUGO

- 1998-2003, US Government invested **3.8 billion USD** (5.6 billion USD in 2010 terms) in HUGO
- Generated economic output (impact) of **796 billion USD**
- **Every \$1** of federal investment **generated \$141** in the economy
- Created **3.8 million job-years** of work
- **310,000 jobs** in 2010
- Average personal income **\$63,7000 per job-year**



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HUGO had an older sister, Celera

- 🌐 Celera Genomics
- 🌐 Licensed access to sequences as available (i.e. pre-empted HUGO)
- 🌐 Subsequent research articles and diagnostic tests tracked:
 - 30% fewer articles
 - Similar reduced level of innovation (tests taken to market)
- 🌐 IP theory would predict the opposite



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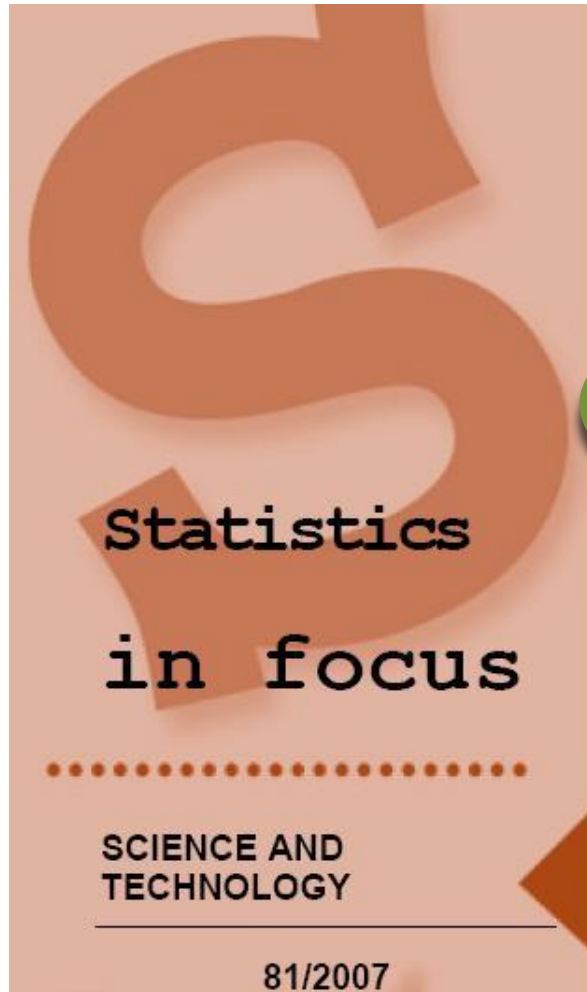
EU CIS studies

Community Innovation Statistics

Weak link between innovative enterprises and
public research institutes/universities

This report puts the spotlight on two different facets of innovation among those screened by the Fourth Community Innovation Survey (CIS 4): the sources of information that are highly important for innovation, and the types of partners with which innovative enterprises cooperate.

The outcome for both aspects is similar: the link between publicly financed science and innovative industry is rather weak. Institutional sources are less frequently consulted than internal or market sources; and innovative enterprises find cooperation partners more easily among suppliers or customers than in universities or public research institutes.



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Author
Sergiu-Valentin PARVAN

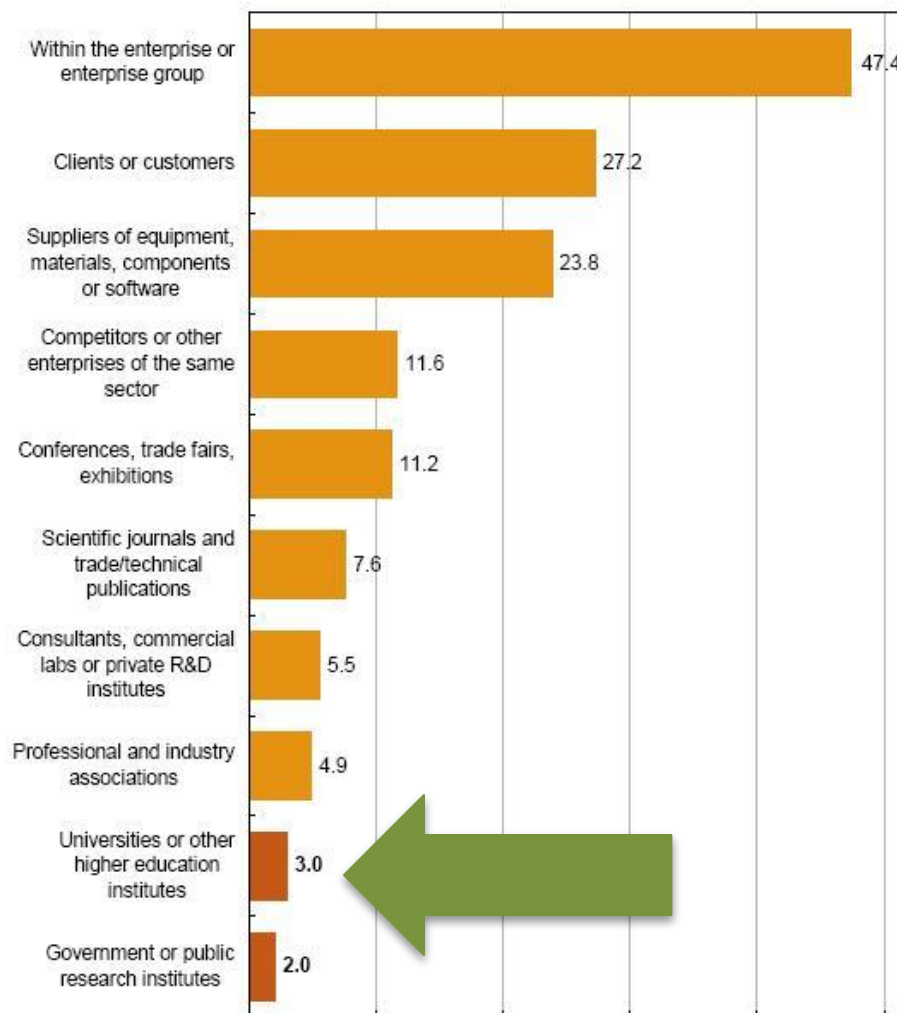
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Link between science and industry 4



Figure 1: Sources of information identified by enterprises as highly important for the enterprise's innovation activities, as a percentage of innovative enterprises, EU-27 average



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Economic implications in Denmark

- Access to research articles is very/extremely important (48%)
 - 79% have access difficulties
- Difficulties in searching/accessing articles cost €73m per year to researchers in Danish firms
- Average delay to product or process development without access to academic research: 2.2 years
- For new PRODUCTS, this would amount to around €4.8 million per company per year

Houghton, Swan & Brown, 2011



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Whose value? Ours, all of us

- New arguments:
- If we pay for OA, others will benefit
- The STM industry employs people and should be looked after by governments
- SMEs should go to public libraries



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Daniel Coit Gilman

First President, Johns Hopkins University

It is one of the noblest duties of a university to advance knowledge and to diffuse it, not merely among those who can attend the daily lectures, but far and wide.



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Thank you for listening

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