



ELSEVIER

STM Innovation through Collaboration

*Supporting researchers, librarians and academic decision makers
through innovation*

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Senior Vice President

Global Academic Relations

6 November 2009

Agenda



- Innovation at the core of the Science, Technology and Medical (STM) strategy – innovation has to be customer focused
- Going digital:
 - Long-term digital preservation
 - More content, more usage
 - More usage, higher science productivity
 - Better access: alternative access models (sponsored, for doctors, for patients, for developing nations)
- Innovation for scientists:
 - Web 1.0: adding value to the journal article
 - Web 2.0: collaboration tool 2Collab
 - Web 3.0: semantic searching through illumin8
- Innovation for decision makers: Spotlight, supporting strategists in academe: services built on top of the world class content to address
 - benchmarking,
 - talent management and
 - interdisciplinary collaborations



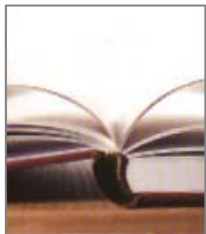
Elsevier has a long history of scientific publishing



- The Publishing House of Elzevir was first established in 1580 by Lowys (Louis) Elzevir at the University of Leiden, Holland



- Keeping to the tradition of publishing established by Lowys Elzevir, Jacobus George Robbers established the modern Elsevier Company in 1880



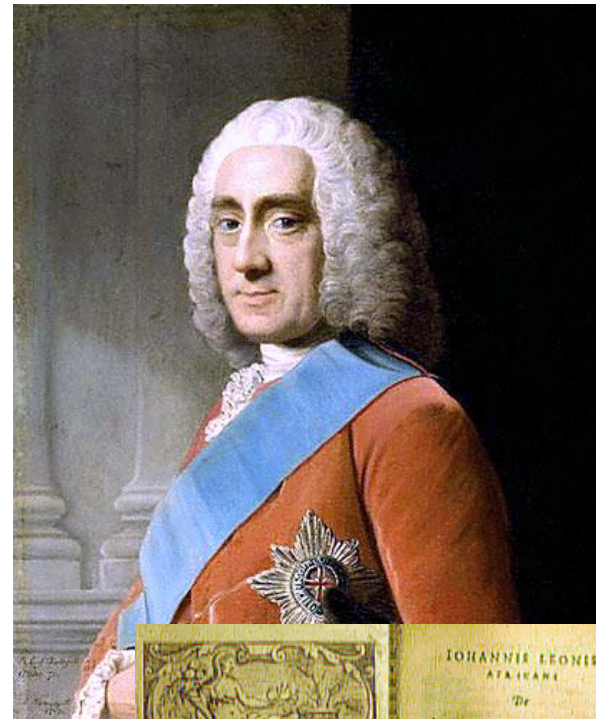
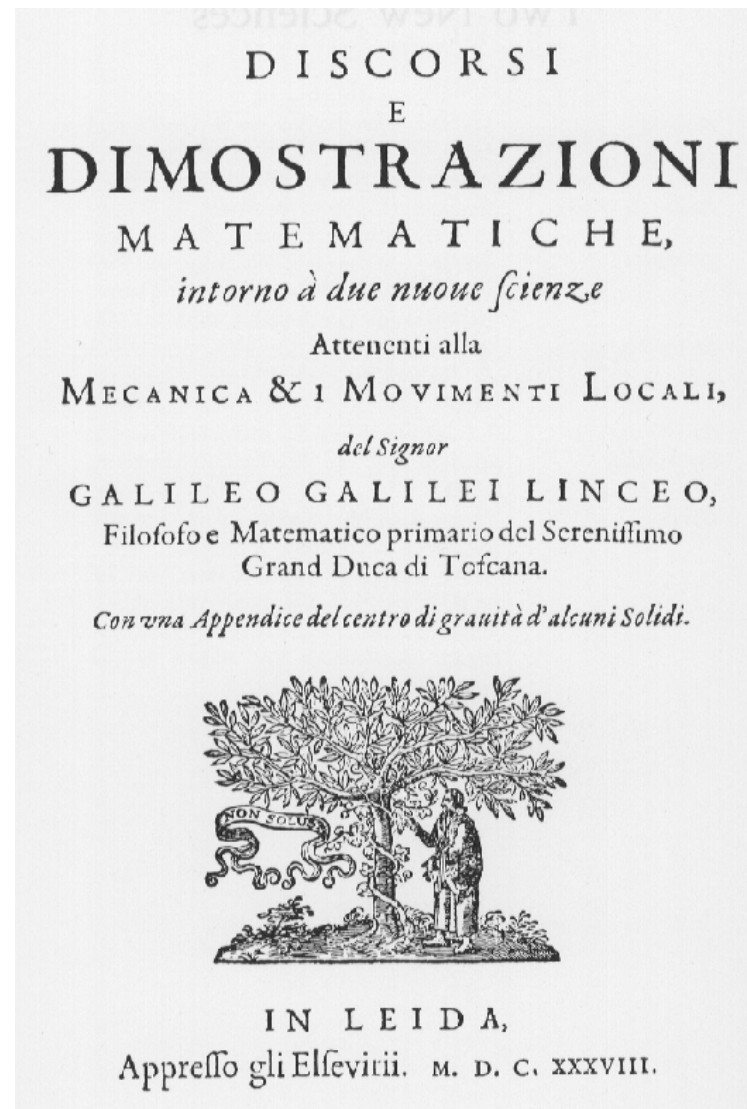
- Among those authors who published with Elsevier are Galileo, Erasmus, Descartes, Alexander Fleming, Julius Verne



Innovation in Scientific Publishing...



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Elsevier and the Greek science community



- **John H. Argyris** (– Mathematics – Finite Element Method)
 - Elsevier Journal: Computer Methods in Applied Mechanics and Engineering etc
- **Dimitri Nanopoulos** (Physics – flipped SU(5))
 - Elsevier journal: Physics Letters etc
- **Fotis Kafatos** (Biology – cDNA cloning)
 - Elsevier journal: Parasitology Today etc
- **Christos Papadimitriou** (Computer Science – comp. complexity theory)
 - Elsevier Journal: Theoretical Computer Science etc
- **Athanasios S Fokas** (Mathematics)
 - Elsevier Journal: Journal of Computational and Applied Mathematics etc
- **Nicholas Negroponte** (founder and Chairman Emeritus of [Massachusetts Institute of Technology](#)'s [Media Lab](#))
 - Elsevier Journal: Computers & Graphics etc
- **John Iliopoulos** (Physics - [charm quark](#))
 - Elsevier journal: Nuclear Physics B etc
- **Panayotis Zavos** (Genetics)
 - Elsevier Journal: Theriogenology etc
- **Stavros A Koubias** (engineering / computer science)

Innovation @ Core of STM Strategy



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Traditional

"Simple needs"
Publisher empowered

Customer Relationship

Increasingly

"Complex needs"
High expectations
User empowered

Content

Value Proposition

Solutions

Weekly/monthly/annual
Print
Pushed

Distribution

Continuous
Electronic
Multi-directional

Transaction
Subscription
Advertising

Pricing Models

Licence/User
Bundled / Atomised
Pay for Performance
Free!

Editorial
Cost controls

Key Skills for Success

Innovation
Customer Marketing
Technology



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Driven by Customer Needs



Findings (1): workflow framework

Workflow framework for academic researcher and (exhaustive) activity map

Roles	Tasks	Activities
1. Core Research (40% of time spent)	Grant Proposals	find funding agency, search literature, read, build alliances, discuss, prepare proposals
	Experiments	plan, search info, set up experiment, run exp., analyze, validate findings, store data

Findings (2): key insights for each task

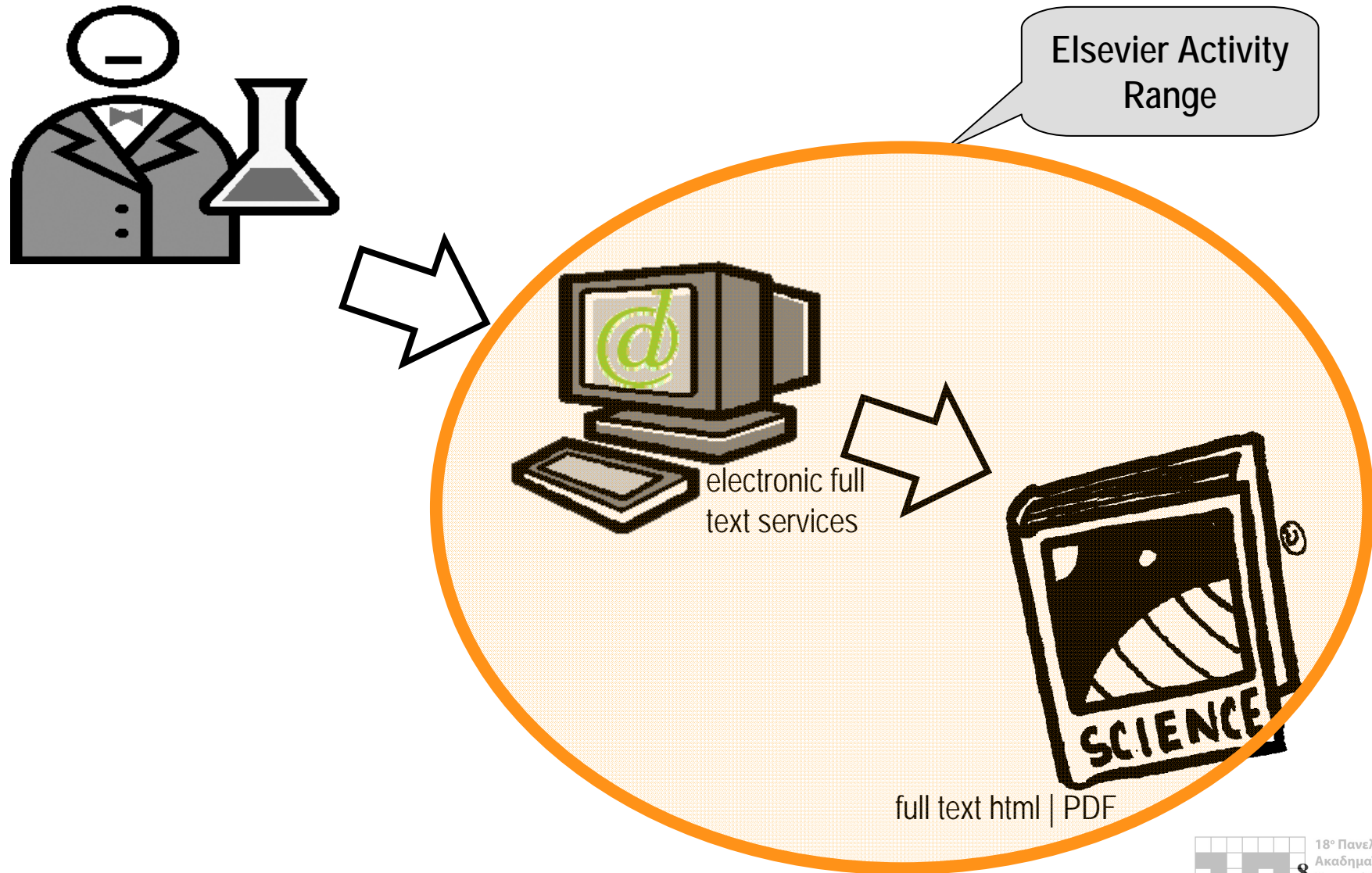
Roles	Problems	Trends
1. Core Research (40% of time spent)	<ul style="list-style-type: none"> Time pressure Information overload Many different tools Organizing information Storing/sharing datasets Hard and time consuming to secure funding 	<ul style="list-style-type: none"> Research becomes more interdisciplinary Research becomes more commercial Increased accessibility to electronic content Growing number of sources New technologies (RSS, blogs) More tools for author workflow support
4. Administration	<ul style="list-style-type: none"> Finding good reviewers Demands of authors vs reviewers 	<ul style="list-style-type: none"> More tools for editor and reviewer workflow support

Findings (3): key insights across roles

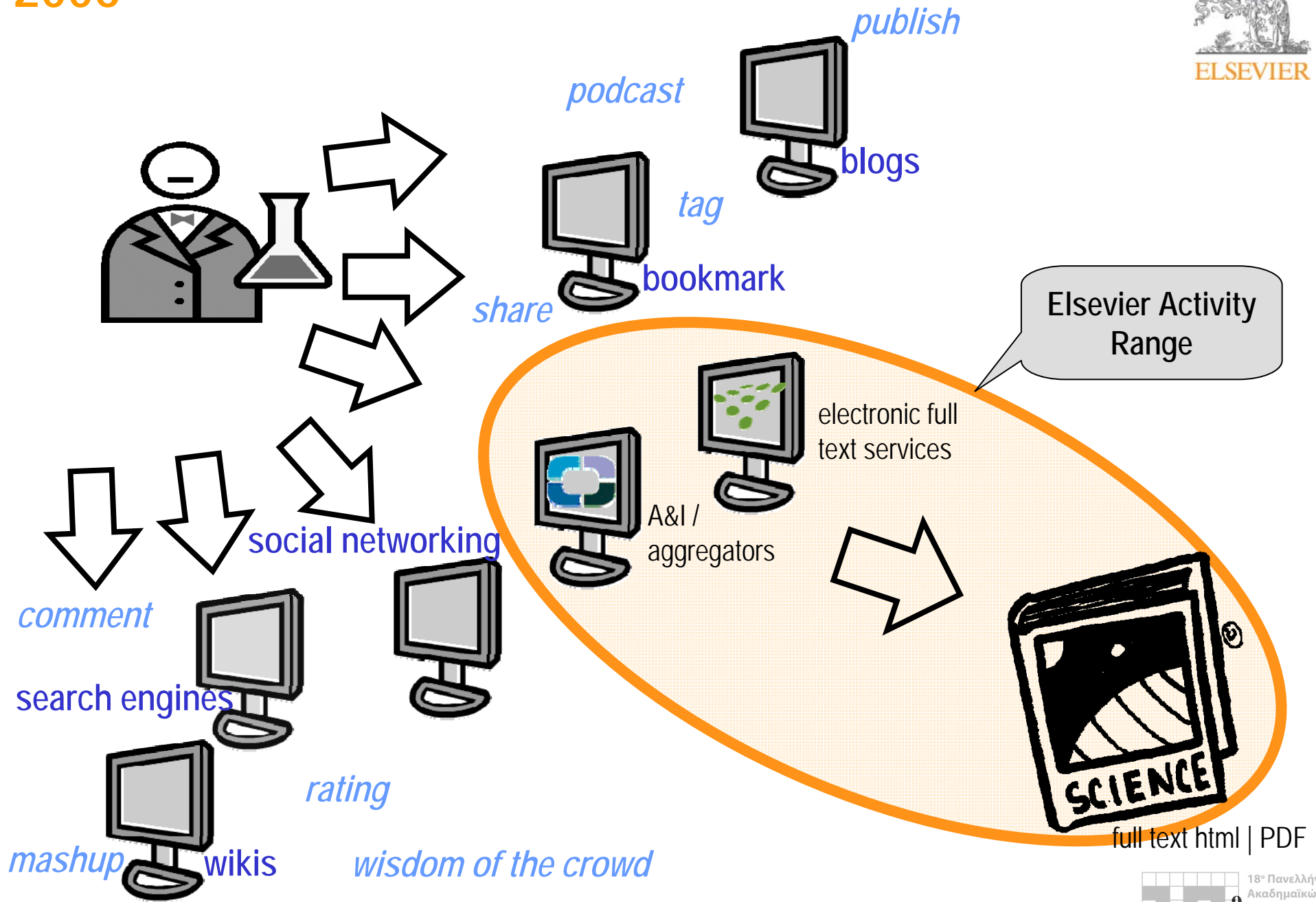
Common problems and product suggestions, based on end-user research

Roles	Problems across roles	Product suggestions by end-users
1. Core Research	<p>Inefficiency of search</p> <ul style="list-style-type: none"> Information overload Need to repeat search over time in different tools Uncertainty about finding all relevant info Inefficient search strategies Lack of common terminology <p>Information Management</p> <ul style="list-style-type: none"> Multitude of tools Lack of time/discipline <p>Evaluation:</p> <ul style="list-style-type: none"> Lack of standardized measures Criticism of impact factor Differences across disciplines, countries, institutes, departments <p>Collaboration</p> <ul style="list-style-type: none"> Document/version management Differences in tools Lack of time/discipline/computer skills <p>Time management</p> <ul style="list-style-type: none"> Balancing research and other tasks Peaks in workload Bureaucracy 	<ul style="list-style-type: none"> 'Use and add metadata as much as possible' 'Support design of library sites' 'Enable one-stop-shop searching, including info other than peer-reviewed' 'Offer better search suggestions: alternative search terms, spelling corrections, mining search history' 'Integrate with online dictionaries and encyclopaedia' 'Minimize registration and login barriers' 'Enable quick sense making of single doc & collection of docs' 'Link articles to associated data sets' 'Support search in protocols and methods' 'Develop grant broker' 'Implement alternatives to impact factor and article rating measures' 'Build forum for exchanging experiences about protocols, methods, suppliers' 'Support team access to common materials, shared annotations, discussions' 'Support for finding collaboration opportunities' 'Support author homepages: automatically update content' 'Support finding examples, images, etc. for teaching'
2. Contributive Research		
3. Education		
4. Administration		
5. Personal		

1998



2006



Elsevier Activity Range

full text html | PDF



**Innovation: going digital!
In Greece thanks to HEAL Link....**

Going electronic: secure all our content in digital format and address long-term preservation: true partnership between library & academic community and the publishers



Elsevier's Digitized Backfiles / E-journals

e.g. Lancet – volume 1, number 1, from 1823

Elsevier led the establishment of an online, official, trusted third party archive at the Royal Library of the Netherlands.

KONINKLIJKE BIBLIOTHEEK

1st official archive

Developed similar arrangements with other organizations



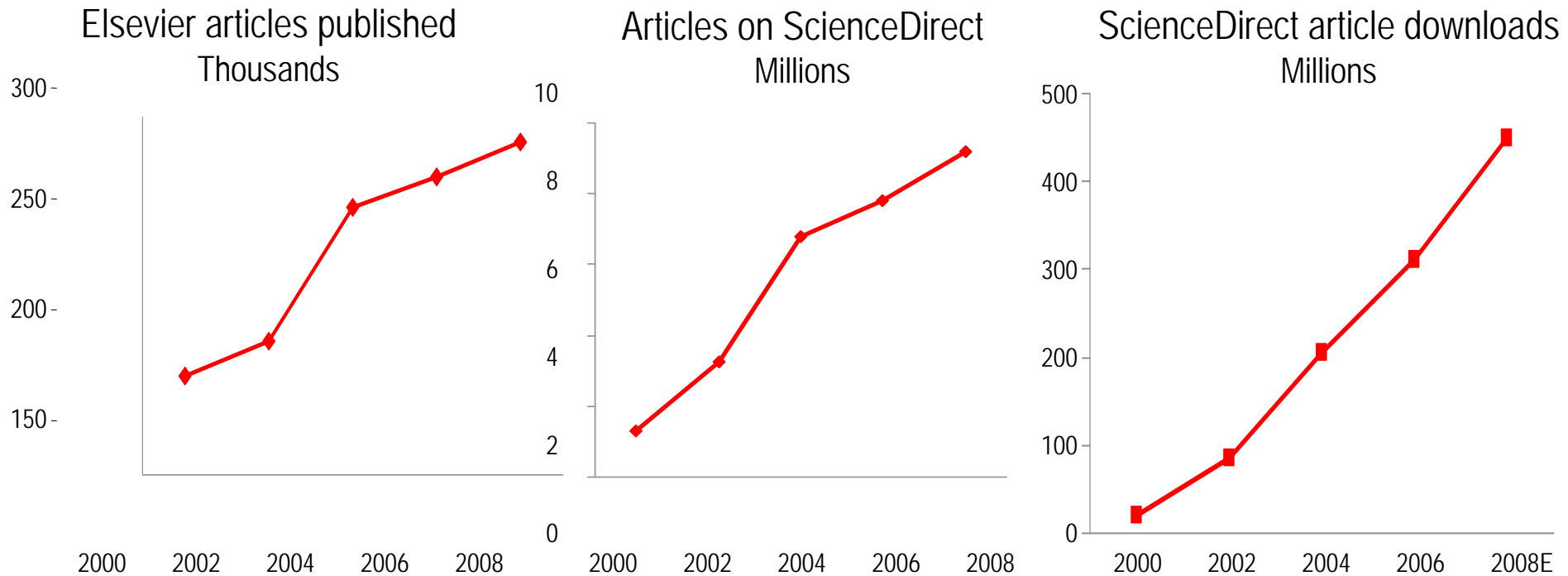
PORTICO

2nd official archive



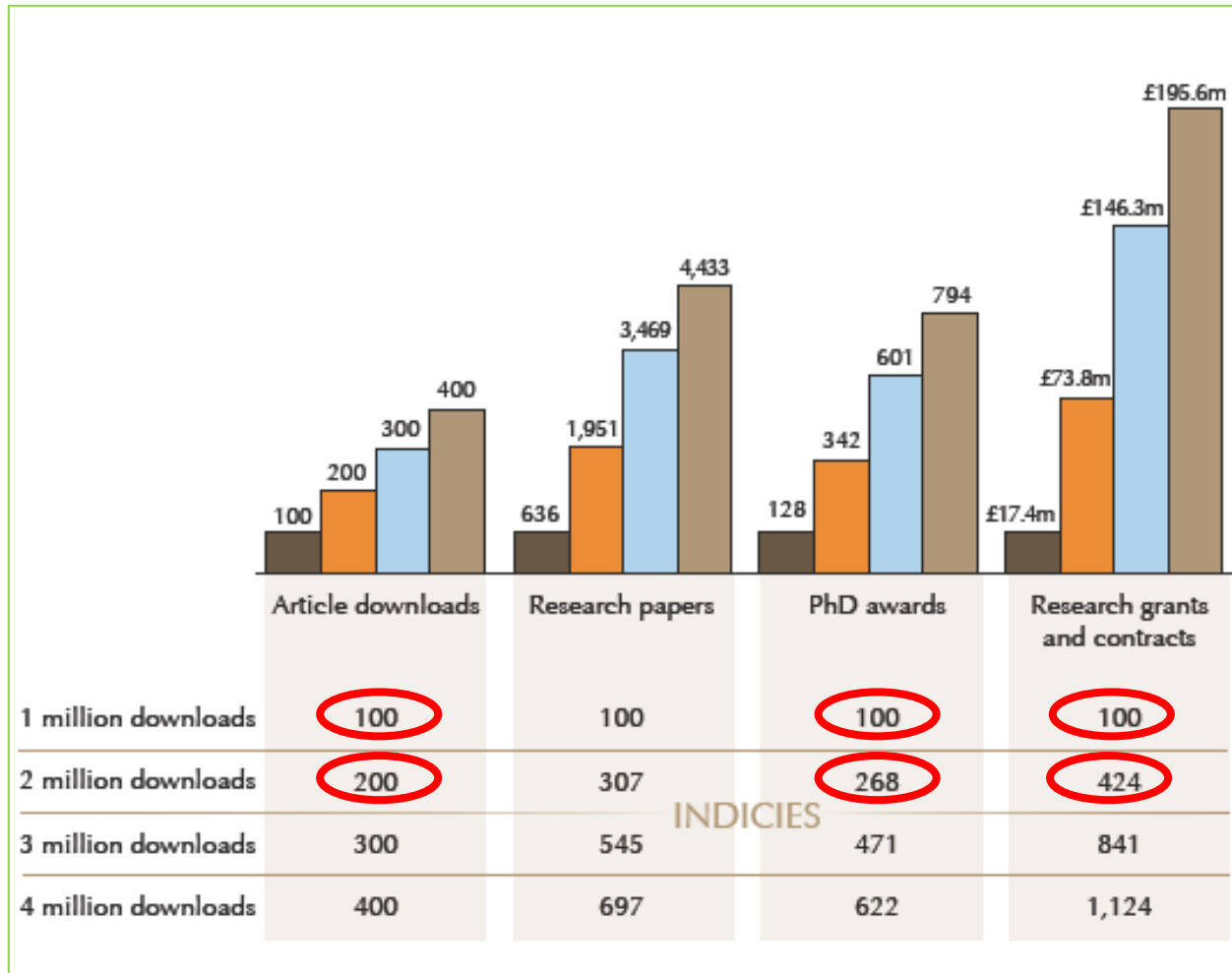
3rd official archive

E-publishing: expanded content & growing usage



- Add remaining backfiles, books, major reference works and primary research data
 - *eBooks, lab data and visuals on ScienceDirect*
- Launch new journals, expanded newsletters
 - *24 new journals per year, 2006-2008; SciTopics.*
- Increase volume with research and development growth
 - *3-4% article growth per year*

University College London study confirms strong correlation between e-journal usage, research output and funding



“Doubling in downloads, from 1 to 2 million, is statistically associated with dramatic - but not necessarily causal - increases in research productivity”

Papers up 207%
 PhD awards up 168%
 Research grants and contract income up 324%

Even stronger as downloads increase further

“Electronic Journals: Their use value and impact. Research Information Network Report”



Changes in the Access Landscape: "Open Access", "Universal Access", "Sustainable Access" etc. etc.

	Definition	Examples
1. Author pays journals	<ul style="list-style-type: none"> • Author fee per article published unless waived • Subsidies, grants 	<ul style="list-style-type: none"> • BioMedCentral • Public Library of Science (PLOS)
2. Sponsored articles	<ul style="list-style-type: none"> • Option to pay article fee after decision to publish • Subscriptions prevail 	<ul style="list-style-type: none"> • <i>Open Choice</i> (Springer) • <i>Online Open</i> (Blackwell) • Elsevier sponsored option & Wellcome Trust agreement
3. Free access to recent archive (Delayed Access)	<ul style="list-style-type: none"> • Subscription journals making articles free online after time delay 	<ul style="list-style-type: none"> • <i>Cell</i> (12 months) • <i>IJSS</i> (24 months) • HighWire Press
4. Open archiving	<ul style="list-style-type: none"> • Posted manuscripts, or pre-prints • On websites and repositories 	<ul style="list-style-type: none"> • Author-posted • Funding body policies: NIH, RCUK, Wellcome Trust
5. Patient information Access for developing nations	<ul style="list-style-type: none"> • Scientific and medical articles used by public in medical need 	<ul style="list-style-type: none"> • Elsevier walk-in policy for ScienceDirect • Patient INFORM, Patient Research • Research4Life
6. Search	<ul style="list-style-type: none"> • Tools that point to content located on the internet 	<ul style="list-style-type: none"> • Google, Google Scholar • Microsoft • Yahoo!



Elsevier funding body agreements and policies

Terms

National Institute
of Health (NIH)

- Accepted author manuscript deposited to PubMedCentral (PMC) to appear 12 months after final publication

Wellcome Trust

- Article made freely available on ScienceDirect/Phoenix
- Typically US\$3,000 per article (Cell, Lancet higher)

Howard Hughes
Medical Institute
(HHMI)

- Article made freely available on ScienceDirect/Phoenix
- Elsevier bills HHMI

Uptake of sponsorship has been slow but is growing.



Market Perception: Elsevier's author posting policies

Publisher:	Elsevier
Pre-print:	☞ subject to Restrictions below , author can archive pre-print (ie pre-refereeing)
Restrictions:	<ul style="list-style-type: none"> This does not include Cell Press
Post-print:	☑ author can archive post-print (ie final draft post-refereeing)
Conditions:	<ul style="list-style-type: none"> On authors personal or authors institutions server Published source must be acknowledged Must link to journal home page Publishers version/PDF cannot be used Articles in some journals can be made Open Access on payment of additional charge NIH Authors articles will be submitted to PMC after 12 months.
Mandated OA:	☑ ANR (Compliant - see conditions); ☑ arc (Paid OA option); ☑ ARC (Paid OA option); ☑ BBSRC (Compliant - see conditions); ☑ BRISQ (Paid OA option); ☑ Cancer Research UK (Paid OA option); ☑ CSO (Paid OA option); ☑ DoH (Paid OA option); ☑ ERC (Compliant); ☑ FRC (Compliant); ☑ FWO (Compliant); ☑ FWF (Compliant); ☑ HHMI (Paid OA option); ☑ Inserm (Compliant - see conditions); ☑ IRCSET (Compliant); ☑ MRC (Paid OA option); ☑ NHMRC (Compliant); ☑ NIH (Compliant); ☑ NERC (Compliant); ☑ PPARC (Compliant); ☑ SNF (Compliant); ☑ STFC (Compliant); ☑ Wellcome Trust (Paid OA option)
Paid access:	Sponsorship Option
Copyright:	view policy
RoMEO:	This is a RoMEO green publisher
Updated:	22-Aug-2007. Suggest an update for this record

"I, for one, am prepared to stoutly defend Elsevier on all these counts, and to say that one could not have asked for more, and that the full benefits of OA require not one bit more -- from the publisher."
 - *Stevan Harnad, AmSci Forum listserv 2004*

Elsevier policies allow authors to comply with funding body mandates

Elsevier listed as green publisher

Green –allows archiving of both pre-prints and post-prints
Blue –allows archiving of post-prints but not pre-prints
Yellow – allows archiving of pre-prints but not post-prints
White – no archiving allowed
Gold – publisher of open access journals

Elsevier is viewed favorably as a "green publisher" and for establishing policies and agreements that allow authors to comply with funding body policies.

Source: <http://www.sherpa.ac.uk/romeo.php?all=yes>



Elsevier patient access initiative: Patient Research

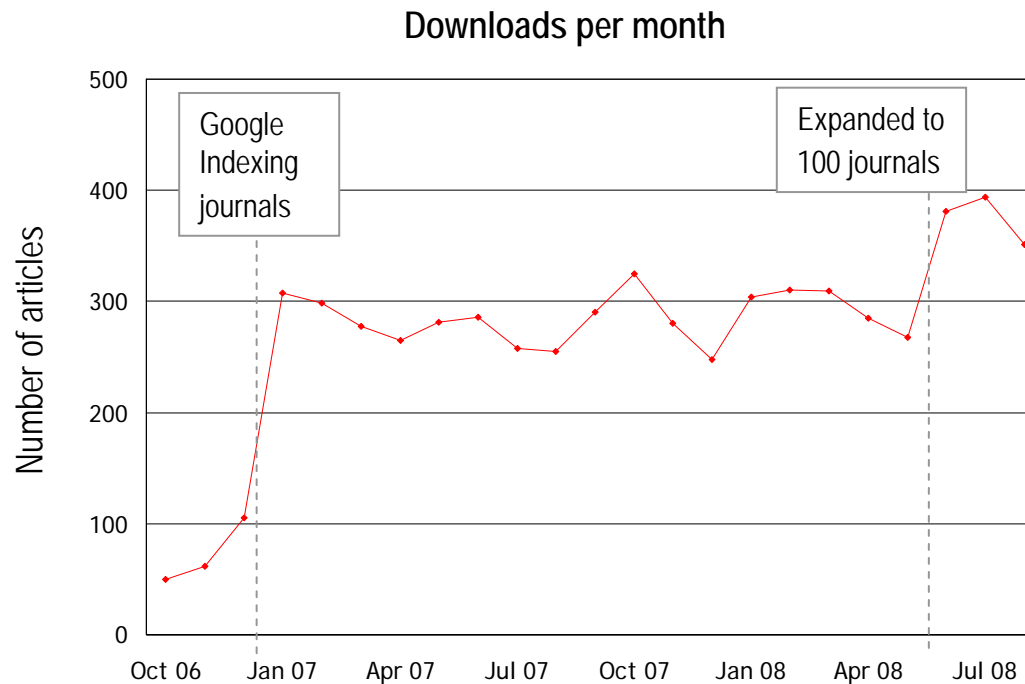
Description:

Patient Research is an initiative to give patients, family members and caregivers access to medical articles that might help them better understand their health issues.

- A patient, family member or caregiver searches the internet on topics relevant to a patient's condition.
- Search results link to articles in participating Elsevier medical journals.
- The individual may register to request email delivery of the article for a minimal processing fee.

The program began in October 2006 with 30 journals and was expanded to 100 journals in June 2008.

Uptake:



Elsevier Access initiative for health professionals – free to users



OncologySTAT

The screenshot shows the OncologySTAT website in a Microsoft Internet Explorer browser window. The browser title is "OncologySTAT | One Source, Many Resources - Microsoft Internet Explorer". The page has a blue header with the site name and a search bar. Below the header is a navigation menu with categories like HOME, JOURNALS, DRUGS & CHEMO REGIMENS, CONFERENCES, PRACTICE MANAGEMENT, and BLOGS & FORUMS. The main content area is titled "Latest News" and features several articles, including "FDA Panel Recommends Restrictions on ESA Use in Several Cancer Types" and "Famine to Feast: Many New RCC Options". A video player is embedded on the right side of the page, showing a man speaking. The browser's address bar shows "Internet".

OncologySTAT.com is a cancer portal containing 100+ Elsevier clinical research and review journals that provide content related to the topic of cancer, including top impact factor titles such as The Lancet and Lancet Oncology.

Research4Life: Access for developing countries through collaboration with the UN, Yale, Cornell, Microsoft and other STM publishers.



WHO initiative provides access to the major journals in biomedical and related social sciences.



FAO initiative provides access to journals in the agriculture, biological, and social sciences.



UNEP initiative provides access to major journals in the environmental sciences.

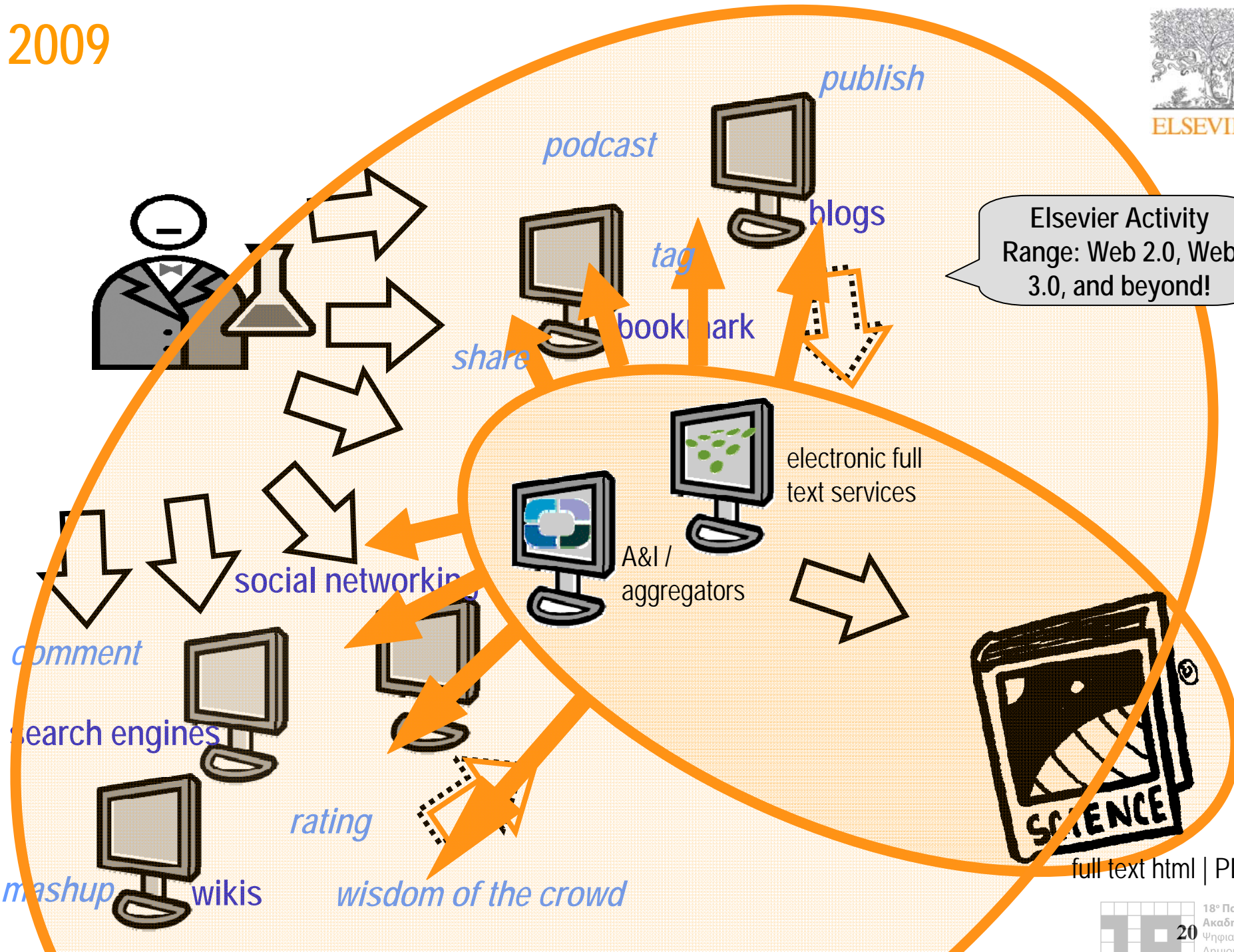
Elsevier provides access to more than 1,500 of its journals to public institutions in over 100 developing countries.
Participating countries increased research output by almost 200% over the last 5 years!

2009



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Elsevier Activity
Range: Web 2.0, Web
3.0, and beyond!





Innovation for Researchers



Added value to article content: identifying key entities – domain specific solution

The cytostatic activity of pyrimidine nucleosides is strongly modulated by *Mycoplasma hyorhinis* infection: Implications for cancer therapy

Sledge Jr., G.W.^{a b} , Miller, K.D.^a  

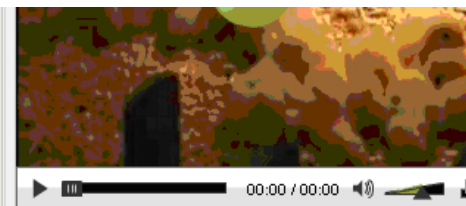
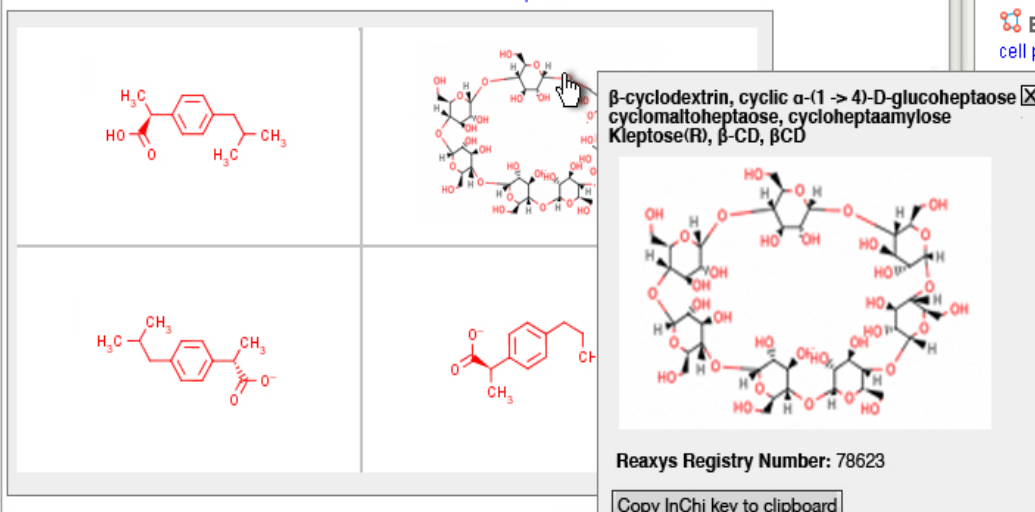
Indiana University School of Medicine, Indianapolis, IN 46202, USA

Smart linking authors and affiliations in Scopus

...ral cancers are reported to be associated with mycoplasmas (i.e. *Mycoplasma hyorhinis*), which contain a number of nucleoside-metabolizing enzymes. Pyrimidine nucleoside analogues, such as 5-fluoro-2'-deoxyuridine (FdUrd), 5-trifluorothymidine (TFT) and 5-halogenated 2'-deoxyuridines can be degraded by thymidine phosphorylase (TP) to their inactive bases. We found in *M. hyorhinis*-infected MCF-7 breast carcinoma cells (MCF-7/HYOR) a mycoplasma-encoded TP that dramatically (20-150-fold) reduces the cytostatic activity of these compounds. The reduction in cytostatic activity could be fully restored in the presence of TPI (5-chloro-6-[1-(2-iminopyrrolidiny)methyl]uracil hydrochloride), a known inhibitor of human TP. This observation is in agreement with the markedly decreased formation of active metabolite (i.e. FdUMP for FdUrd) or diminished drug incorporation into nucleic acids (i.e. for TFT and 5-bromo-2'-deoxyuridine) in MCF-7/HYOR cells compared with uninfected MCF-7 cells. Antimetabolite formation is fully restored in the presence of TPI. In contrast, 5-fluoro-5'-deoxyuridine (5'DFUR), an intermediate metabolite of capecitabine, was markedly more cytostatic in MCF-7/HYOR cells than in uninfected cells, due to the activation of this prodrug by the mycoplasma-encoded TP. Thus, our data reveal that *M. hyorhinis* expresses a TP that activates 5'DFUR but inactivates FdUrd, TFT and 5-halogenated 2'-deoxyuridines, and that is highly sensitive to the inhibitory effect of the TP inhibitor TPI.

Substances  Show structures (40)

previous <structures 10-16> next



Video 1: Major vessels of the fetal abdomen and thorax as imaged by 3DPD modality, shown with and without the More...

View within Article

Download this Video

Research with keywords from this title

Click on the terms below to find Literature, Experiments, Clinical Trials and more based on terms in this article.

Diseases | 2

breast cancer pleural effusion

Compounds | 12

estrogens hexachlorocyclohexan...
Ethanol phenol

View more...

Tissues | 2

serum sperm

Biogroups | 4

cell proliferation Metaphase
osis cytoplasmic

Integrate domain specific solutions, from both Elsevier and 3rd parties



Web 2.0 application: The Research Collaboration Tool

Invertebrate Neuroscience info Open Public group
This is for researchers interested in invertebrate neuroscience. The goal of the group is to use it as a virtual journal club to bring articles and websites to the attention of others and to comment on them.

[2collab.com / group:Invertebrate Neuroscience](http://2collab.com/group:Invertebrate%20Neuroscience)

Add new resources to share with your research group

Discover new resources based on popular user-defined keywords

Collaborate with others in your field

- 0 votes
 0 comments
 posted 4 hours ago by jnewcomb
Leech locomotion: swimming, crawling, and decisions
 Current Opinion in Neurobiology 17,6,704-711, Dec 2007.
 tags: locomotion, swimming, stretch receptors, central pattern generators
- 0 votes
 0 comments
 posted Mar 14, 2008 by jnewcomb
Space-Clamp Problems When Voltage Clamping Neurons Expressing Voltage-Gated Conductances
 Journal of Neurophysiology 99, 1127-1136, 2008.
 tags: voltage, clamp
- 1 vote
 0 comments
 posted Mar 14, 2008 by pratz
Motor Networks: Shifting Coalitions
 Current Biology 17, 4, R139-R141, 20 February 2007.
- 0 votes
 0 comments
 posted Feb 28, 2008 by jnewcomb
From sea to land and beyond - new insights into the evolution of euthyneuran Gastropoda (Mollusca)
 BMC Evol Biol 8, 57, 2008.
 tags: evolution, phylogeny, opisthobranchs
- 0 votes
 0 comments
 posted Feb 27, 2008 by jnewcomb
Single mutations convert an outward K+ channel into an inward K+ channel
 PNAS 105, 3, 2871-2876, 2/26/08.
 tags: ion, channels, voltage-gating

overall users rating for this paper

Email, export, set an RSS feed on reference list

View other users' comments and add your own opinion

View bibliographic information

tags groups users

view options
 tags used in this group:

Aplysia CELLBIO central
 pattern generators channels
 clamp DEVBIO evolution i
 locomotion LTD LTP
MOLNEURO
 neuroscience
 opisthobranchs phylogeny
 post-tetanic potentiation PTF
 residual calcium
SIGNALING STDP
 stretch receptors swimming
SYSNEURO voltage
 voltage-gating

recent tag usage
 past tag usage

tags groups users

users in this group:

- AkiraGSU
PostDoc - Georgia State University
- aprinz
 gmtchell
School of Physics, Georgia Institute of Technology
- jllivis
Graduate Student - Georgia State University
- jnewcomb
Assistant Professor - New England College
- kwilliamson8
Neurobiology lab group at Georgia State University
- Laveeta
Graduate student - Georgia Institute of Technology
- lzhong1
- NinaMilosavljevic
- pkatz
Professor - Georgia State University
- rseaman
Graduate Student - Emory

tags groups users

similar groups:

- N Project
focus: assessment, simulation
- Water research
focus: climate, conservation, international water news, water, water news, water quality, water research, water supply
- Cancer Stem Cells
focus:

[more >](#)

other groups sharing and discussing similar resources



Elsevier's 2collab was listed by Information Age among Top 10 Web 2.0 business success stories



Web 3.0 application: Illumin8 based on semantic searching



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*“The company... has signed up a long list of major innovators, including 3M, Proctor & Gamble, General Mills and a couple of dozen other Fortune 500 companies. **By all accounts, Illumin8 is set to become the Google of the innovation space...**”* **The Economist - March 2008**

- Semantically “Reads” sentences
- Extracts relevant Organizations, People, Products, Benefits, etc.
- Include Billions of pages from Web, Journals, Abstracts, Patents
- Presents “Answers”, not “Documents”

Q: chip cooling
E.g. natural sweetener, biodegradable film, green roofing, aseptic packaging

Filters: Displaying 4424 results. View All

Content Sources: Journal, Patent, Web

Date: (Journal & Patent)

Relevancy: High, Medium, Low

Summary

Organizations	Q:	Products	Q:	People	Q:
International Business Machines	495	Liquid nitrogen	10	Suresh Garimella	42
Asus	21	Gallium alloy	5	Bruno Michel	11
Cooligy	16	Liquid gallium alloy	5	Pease	7
Pelcier	7	Carbon nanotube	11	Tuckerman	7
Nanococonduction	5	Spray	4	Kandlikar	6
CTO	2	Grease	8	Beiravjee	3
Intel	306	Thermal grease	3	Robert Vajtai	3
Apple	38	Helium	2	Tim Fisher	2
Microsoft	24	Liquid helium	2	Tou	2
Asetek	6	Lubricant	15	Matt Maschmann	1

View all 1492 Organizations | View all 885 Products | View all 1200 People

Approaches	Q:	Benefits	Q:	Related Results	Q:
Convection	8	reduce noise	13	Fan	135
Conduction	5	improve performance	3	Heatsink	110
Single-phase liquid flow	4	provide noise reduction	3	Tiny ionic wind engine	30
Area maximization	2	achieve matched cooling	2	Cooler	46
Air cooling	21	enhance image quality	2	Cooling system	211
Water cooling	21	improve image	2	Pelcier device	25
Configuration	10	lower thermal electron noise	2	Ionic wind	14
Localized cooling	4	provide high resolution	2	Heat pipe	30
Thermal management	4	reduce thermal noise	2	IBM researcher	11
Pelcier cooling	3	suppress thermal noise	2	Air	39

View all 600 Approaches | View all 26 Benefits | View all 600 Related Results

Creates relevant context out of unstructured text

Carrier's Infinity™ Air Purifier uses ultraviolet light to eliminate germs such as viruses, molds, bacteria, mildew and mold spores from the indoor air of homes and offices, ensuring a higher indoor air quality.

Entities (3)

- Organizations (1)
- Products (1)
- Technology Terms (1)

Problems (6)

- Benefit (1)
- Keywords (3)



Some Future Thinking on Innovation: Exploring New Services for Decision Makers – Based on Scopus

Researchers and Decision Makers Face New Challenges



Global Market Research: 1,800+ Respondents



FINDINGS:

Research landscape is changing

- Research funding is increasingly competitive.
- Research is becoming more and more multidisciplinary.
- interdisciplinary collaboration grows in importance.
- Governments launch initiatives to quantify scientific output.

Challenges to meet your goals

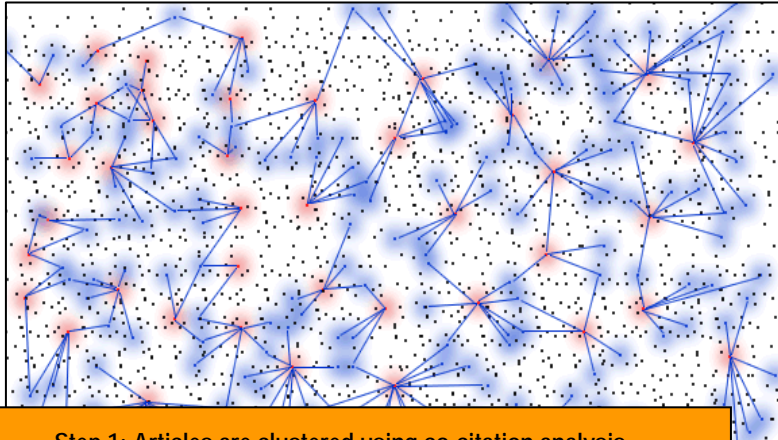
- Insights into institutional strengths and weaknesses
- Insights into new research trends and collaborations
- Identifying the flow of funding and funding opportunities
- Availability of adequate tools to help deal with these challenges

Institutional and individual goals

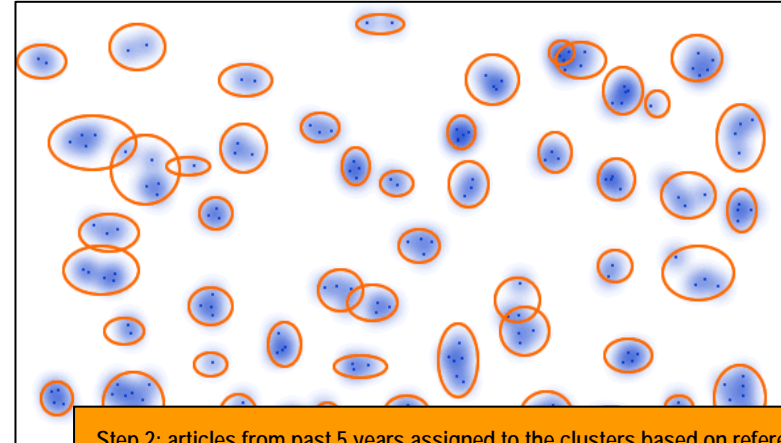
- Establish, maintain and develop institutional and personal research leadership
- Acquire appropriate funding to secure research projects.
- Increase research efficiencies



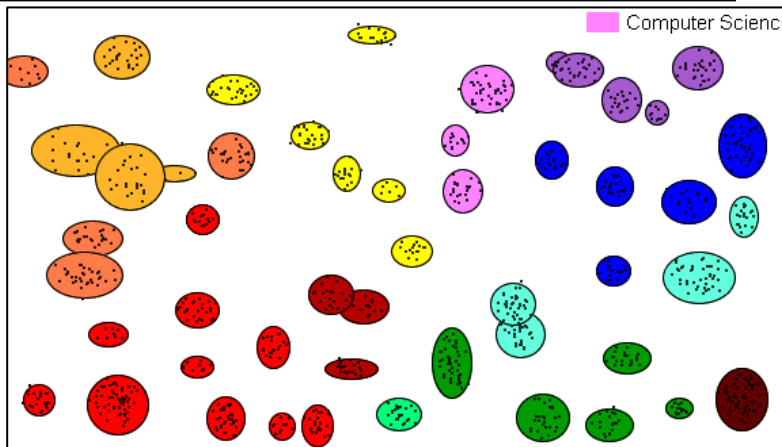
SciVal Spotlight: Visualizing Existing & New Research Clusters



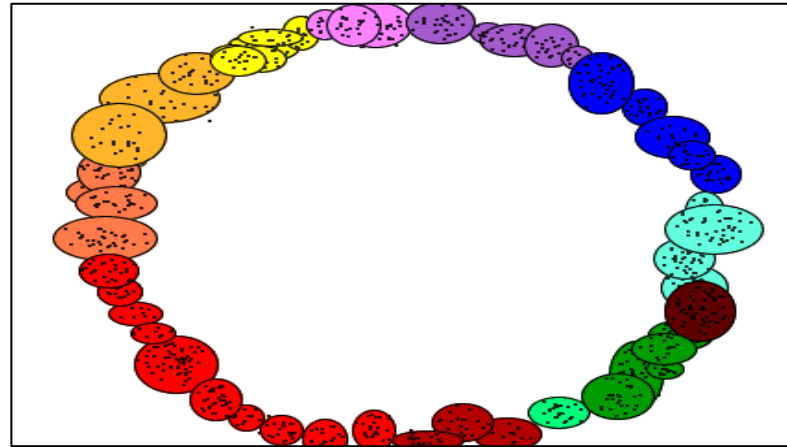
Step 1: Articles are clustered using co-citation analysis



Step 2: articles from past 5 years assigned to the clusters based on references



Step 3: Each cluster is assigned to a discipline and subject area

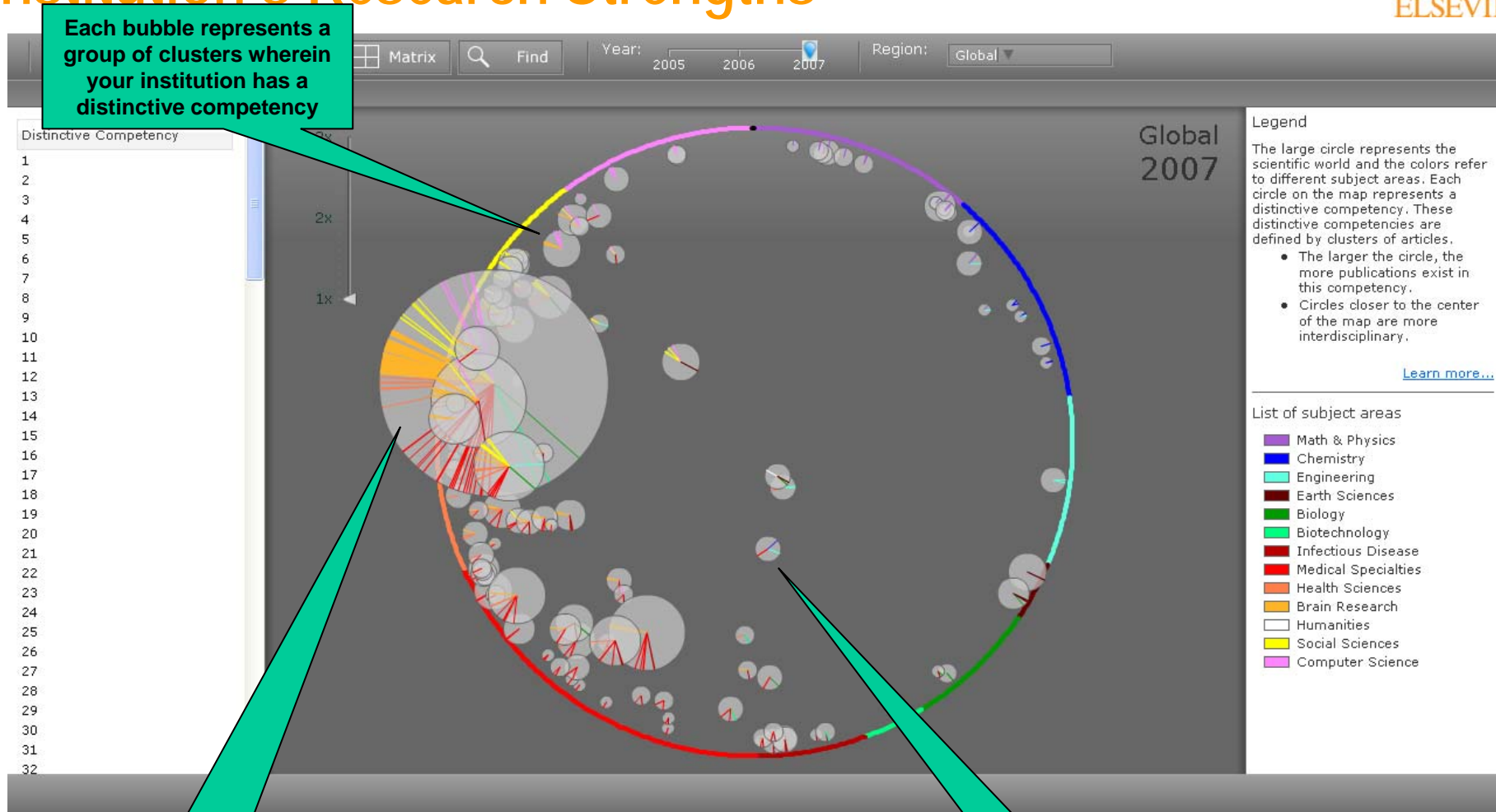


Step 4: All clusters are placed on the wheel for visualization purposes



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SciVal Spotlight: a Complete Picture of your Institution's Research Strengths





SciVal Spotlight: Identifying Top Researchers In Growing Disciplines

View: Table Circle Matrix Find Year: 2005 2006 2007 Region: Global

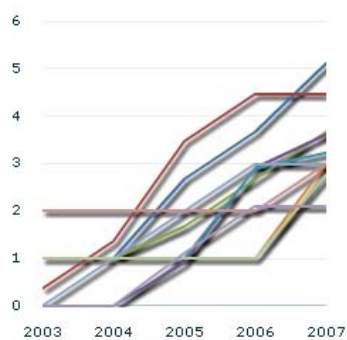
Distinctive Competency #44: Details Circle Map

Distinctive Competency #44

Disciplines: Urology (75.3%)
 Main keywords: radical prostatectomy; urinary incontinence; artificial urinary
 Cited: 13.7
 Articles: [View articles in Scopus](#)

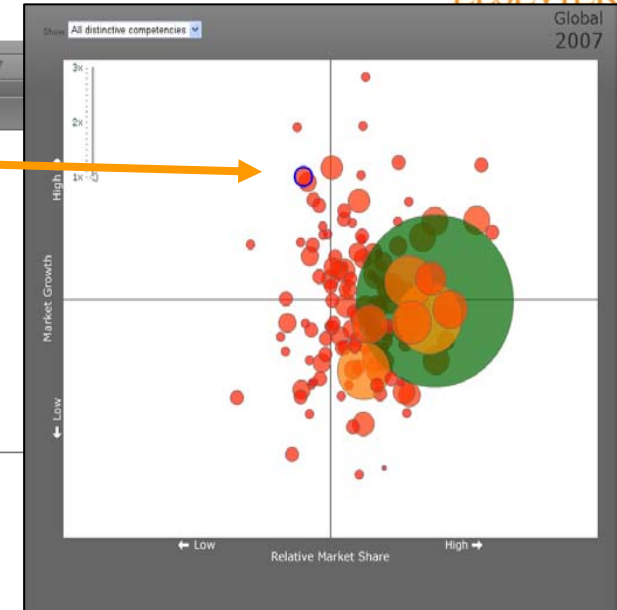
	Market Size (Global)	Your institution	Relative Market Share
Publications	290.6	5.3	1.8%
Growth	20.10% ↑	0.75 ↑	0.99% ↑

Top authors | **Top competing authors** | **Top competing organizations** | **Top collaborating organizations**



color	name	organization	articles	fractionalized	cited
1.	Singla A.	Wayne State University	6	5.1	30.9
2.	Webster G.D.	Duke University Medical Center	6	4.5	21.8
3.	Onur R.	Firat University	4	3.7	24.4
4.	Comiter C.V.	University of Arizona	4	3.6	17.3
5.	Stolzenburg J-U.	University of Leipzig	5	3.2	15.6
6.	Bales G.T.	University of Chicago	3	3.0	10.0
7.	Peterson A.C.	Duke University Medical Center	3	3.0	16.0
8.	Stone A.R.	University of California at Davis	3	3.0	16.0
9.	Elliott D.S.	Mayo Clinic Rochester MN	3	2.8	6.0
10.	Raj G.V.	Duke University Medical Center	3	2.1	16.8

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Top researchers within this discipline who can strengthen your relative position



ELSEVIER

US Funding opportunities integrated with award information and publication data

A singly source of high quality funding opportunity information

Seeing what research was funded in the past can influence future success

Targeted recommendations provide guidance on where to apply to



In conclusion....

- STM publishing is a highly innovative, efficient sector
 - Innovation can only succeed if it is customer driven.
 - Going digital has resulted in content and usage surge with positive impact on research output
 - Access addressed in various ways: 'Open Access', access for health professionals, patients, researchers in developing nations.
- Innovation for scientists:
 - Web 1.0: going beyond print with datasets, animation and interviews
 - Web 2.0: collaboration tool 2Collab
 - Web 3.0: semantic searching through illumin8
- Innovation for decision makers: Spotlight, supporting strategists in academe: services built on top of the world class content to address
 - benchmarking,
 - talent management and
 - interdisciplinary collaborations
 - funding