Enabling Scientific Data Sharing and Re-use

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“We must give taxpayers more bang for their buck. Open access to ... data is an important means of achieving this.”

Máire Geoghegan-Quinn,
European commissioner for research, innovation and science
July 2012.

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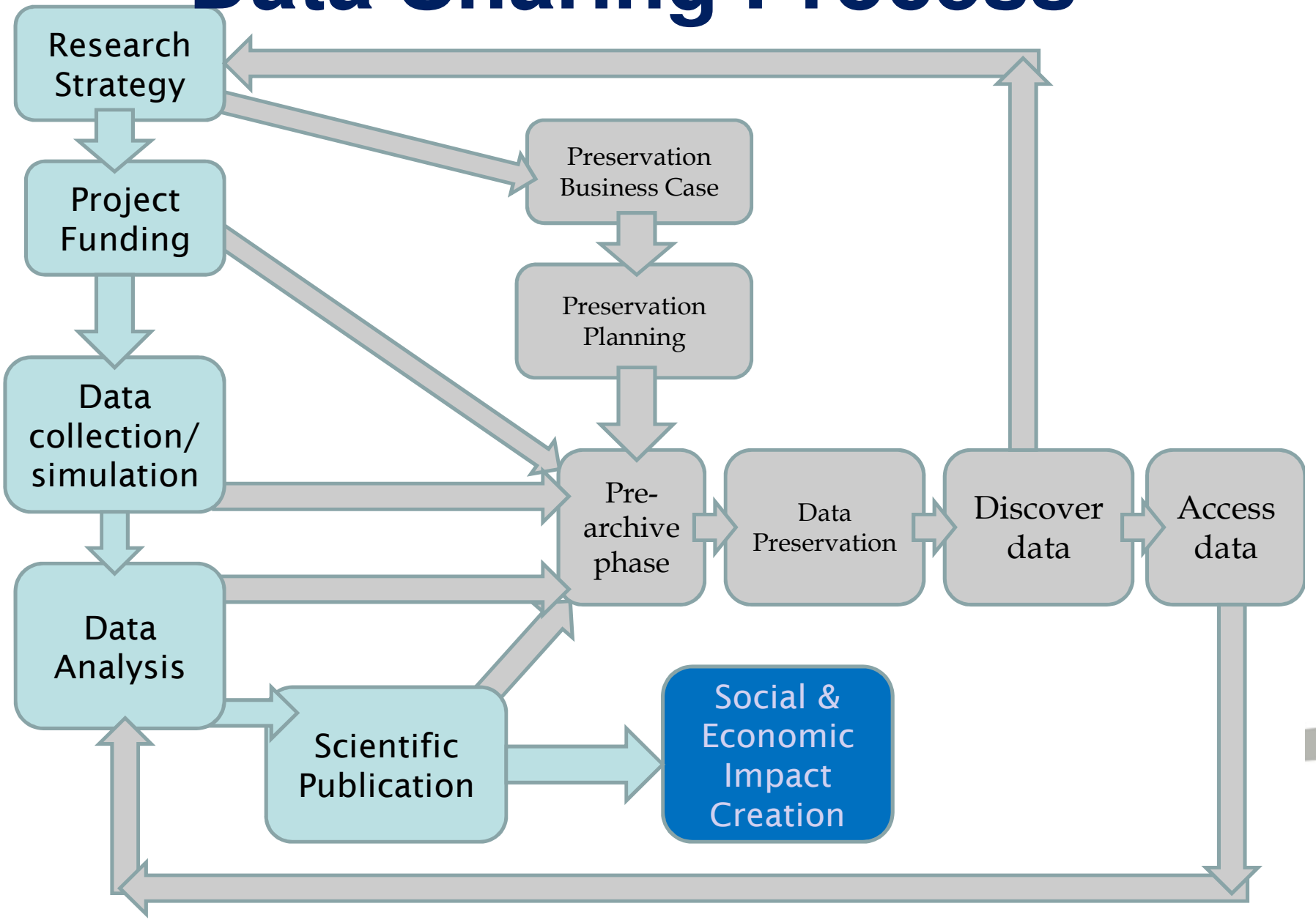
The study

1) collect 21 examples of data sharing
2) create baseline model of sharing;
3) test model completeness in workshop;
4) identify drivers, barriers and enablers
5) prioritise through interviews with 55 experts;
6) derive recommendations for stakeholders.

Stakeholders

- Policy-makers: National, Regional
- Funders: Research, Infrastructure
- Researchers: Data producers, Data consumers
- Research and education organisations
- Data management and infrastructure service providers (librarians, publishers)

Data Sharing Process



Context Factors

- Academic discipline:
  - Source of data, Cost of data collection, Possibility to collect data again, Complexity of data analysis
- Country:
  - Legislation, Infrastructure, Funding
- Age of researcher:
  - Willingness to invest effort for possible long-term benefit
- Data Re-use Sector :
  - Non-commercial research, Commercial research, Education

Drivers

- a) Societal benefits
- b) Academic Benefits
- c) Research Benefits
- d) Organisational Incentives
- e) Individual Contributor Incentives

Barriers

f) Individual Contributor Incentives

g) Availability of a Sustainable Preservation Infrastructure

h) Trustworthiness of the data, Data Usability, Pre-archive activities

i) Data Discovery

j) Academic Defensiveness

k) Finance

l) Subject Anonymity and Personal Data Confidentiality

m) Legislation/Regulation

Enablers

n) Individual Contributor barriers

o) Availability of a Sustainable Preservation Infrastructure

p) Trustworthiness of the data, Data usability, Pre-archive activities

q) Data Discovery

r) Academic Defensiveness

s) Finance

t) Subject Anonymity and Personal Data Confidentiality

u) Legislation/Regulation

Data Publication Practice
Themes

- *The role of publishers in data sharing*
- *Data citation and description for discovery and use*
  - Granularity of data to be cited

new publishing models

author information

doi

live updates

article-level metrics

Tool box to print, download reference, share: email, social media, bookmark

Related content

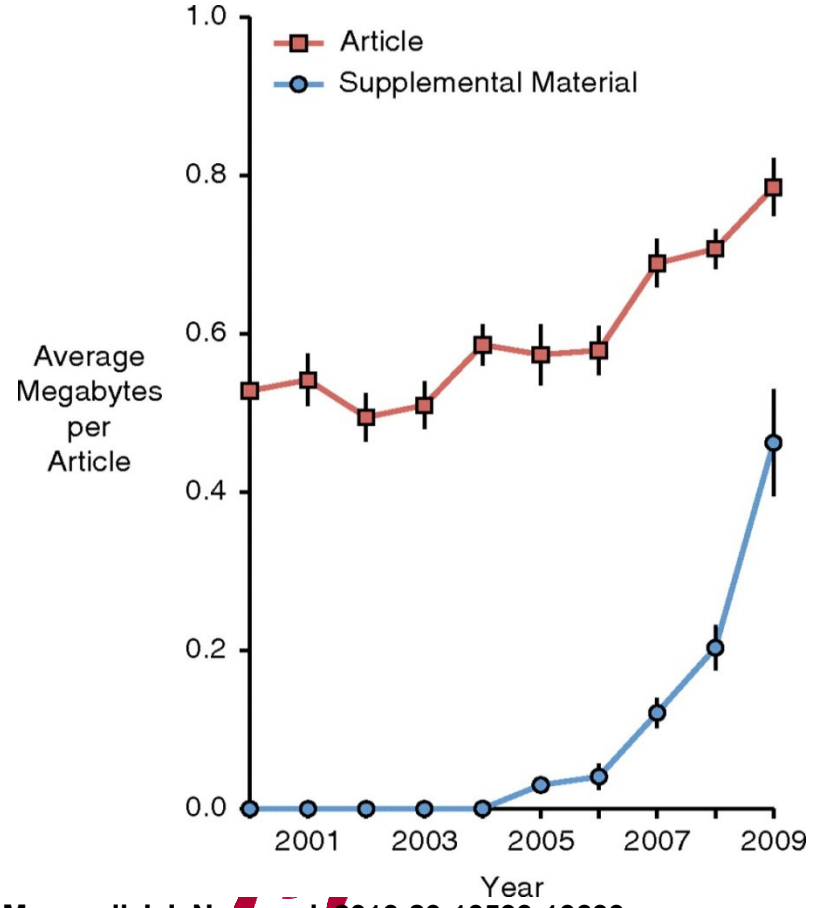
Figure previewer

Collapsible sections

Source: V. Kiermer, Nature Publishing Group, 2011

How big is the Data Problem for journals?

Too big for the Jnl of Neuroscience and Cell:



Maunsell J J. Neurosci. 2010;30:10599-10600

Jnl of NeuroScience:
The Graph depicts the average size of a Journal of Neuroscience article and supplemental material in megabytes.

As a consequence, the Journal no longer accepts supplementary files to manuscripts, soon the supplementary material would outgrow the article volume. The burden on the peer review process became simply to large.

Journal Cell:
Editors suspect researchers to treat supplements as data dumping grounds (Emily Markus, Cell)

General:
Publishers cannot guarantee proper preservation and future accessibility of supp files.

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The Journal of Neuroscience

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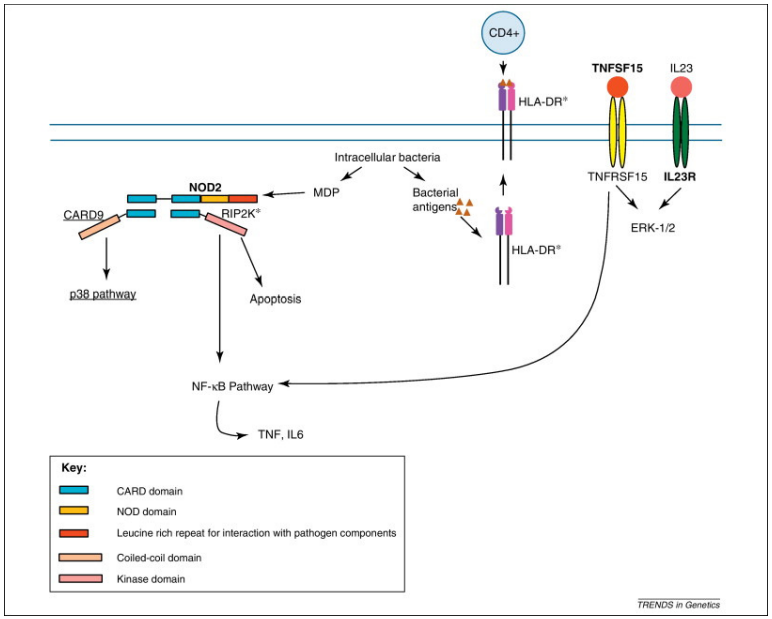
Data Management Infrastructure Themes

- *Finance: funding infrastructure and data services;*
- *Quality assurance of research data*
- *Standards and interoperability*

Interdisciplinary data sharing standards: common semantics



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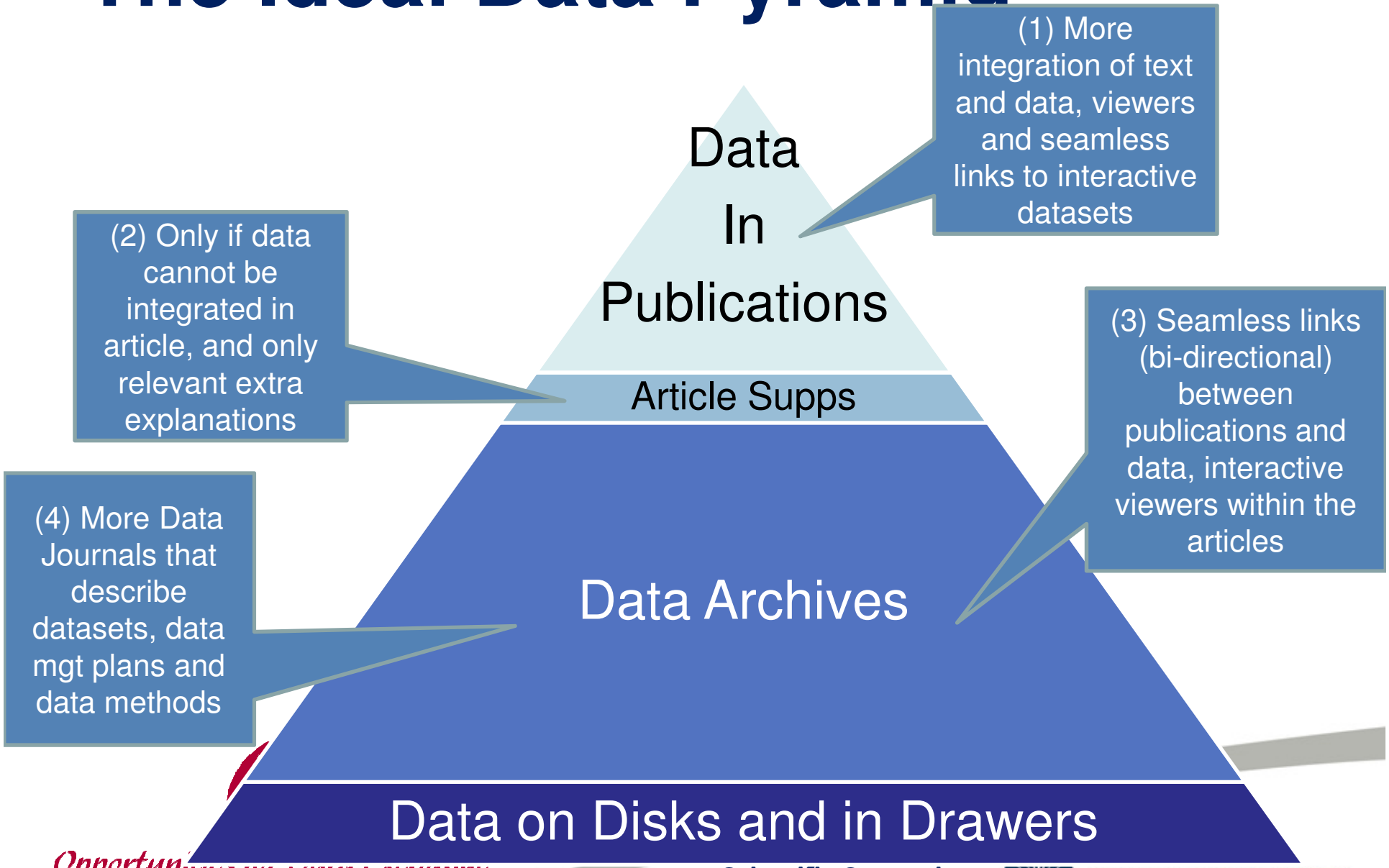
The Ideal Data Pyramid



Culture and Policy Themes

- *Data sharing culture*
- *Public visibility of research data*
- *National and regional policy and legal frameworks*
- *Incentives in the academic reward system for good data practice*

Incentives in the academic reward system

- “data sharing could work against individual scientists' need for recognition”- Gerrit Hirschfeld, Nature Volume: 487, Page: 302 Date published: (19 July 2012) DOI: doi:10.1038/487302c
- a common system of credit and recognition for data production and sharing is needed
- provide researchers with clear instructions on how to cite data
- Include data publication & citation metrics in researcher appraisal

Questions ?

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