



Open Science in the Digital Single Market

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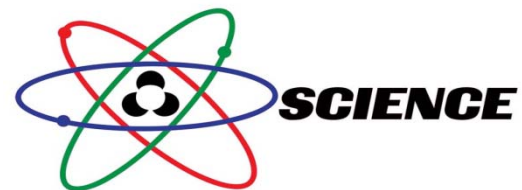
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What is open science?

- Open science is the **transformation and opening up of science, research and innovation through information and communication technologies (ICT)**
- **Objective: making science more efficient, transparent and interdisciplinary, and enabling broader societal impact and innovation.**





Expected benefits of open science

- **Good for science**: efficiency, verifiability, transparency
- **Good for the economy**: access to and re-use of scientific information by industry
- **Good for society**: broader, faster, transparent & equal access for citizens





The Digital Single Market is the broader policy context for





Digital Single Market (DSM): a strategy (1)

- DSM is a market in which the free movement of goods, persons, services and capital is ensured and where individuals and businesses can seamlessly access and exercise online activities.
- Fair competition, with a high degree of consumer and data protection, irrespective of their nationality or place of residence
- One of the pillars of the DSM strategy focus on maximising the growth potential of the digital economy – building a data economy





Digital Single Market (DSM): a strategy (2)

- The data economy relies on data flowing freely
- The data economy relies also on data being openly accessible.
- Data originates from very diverse sources: millions of citizens using mobile devices, research infrastructures such as telescopes or weather sensors, scientific literature, public services such as hospitals, etc.
- Data is crucial for science and economic growth but also for taking political decisions





Digital Single Market (DSM): a strategy (3)

- Restrictions on the free flow of data artificially limit the size of the market for data, digital technologies and services
- Technical and legal issues to allow a free flow of data (ownership, liability, etc)
- Data share, re-use and mine – importance of the copyright reform (TDM)

Thus, the importance of **Research & Innovation** for the DSM: open science, free flow of data, including research data



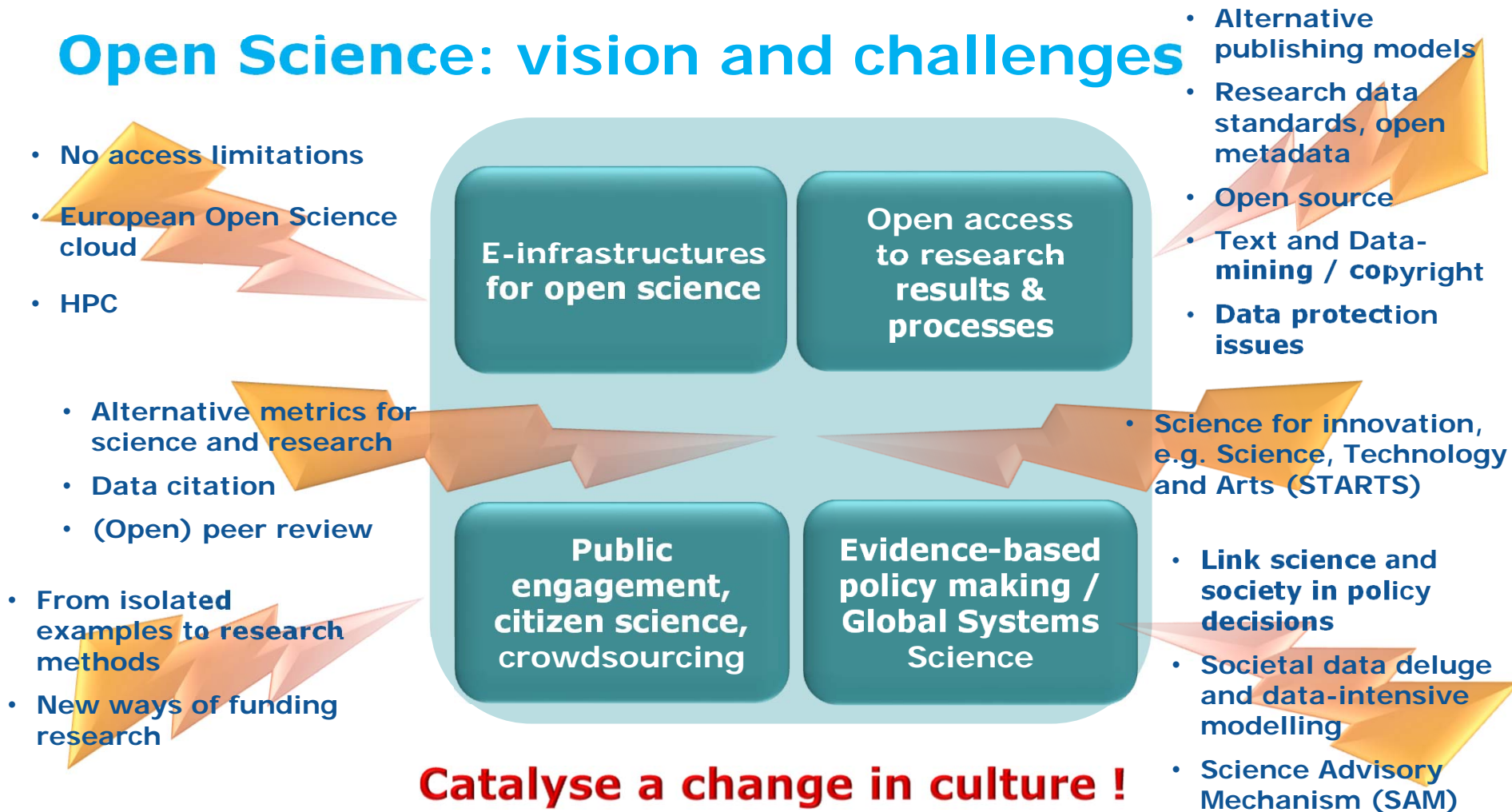


Research data in a data-driven economy

- **Emergence of new instruments and methods for data-intensive scientific discovery**
- **Development of data analytics tools**
- **Data as an infrastructure**
 - Data are non-rivalrous goods
 - Data are capital goods
 - Data are general-purpose inputs



Open Science: vision and challenges



Catalyse a change in culture !

for researchers, research organisations and industry





There is already a lot of
open science activity at
European level ...





Competitiveness Council 29 May 2015: Council Conclusions

Member States emphasise the data-driven economy and support for open science

The Council:

- RECOGNISES the high potential of the **data-driven economy**.
- REAFFIRMS the broad political support from Member States for setting better framework conditions for faster and wider **data-driven innovation taking into account the research perspective**.
- LOOKS FORWARD to the possible development of action plans or strategies for **open science**.





Open access policy in Horizon 2020



Open Access to Publications





OA to publications in H2020: mandate

- Each beneficiary must ensure OA to all peer-reviewed scientific publications relating to its results
 - Deposit a machine-readable copy in a repository (possibly OpenAIRE compliant)
 - Ensure OA on publication or at the latest within 6 months (12 for SSH)
- Aim to deposit at the same time the research data needed to validate the results ("underlying data")
- Ensure OA to the bibliographic metadata that identify the deposited publication, via the repository





FP7 post-grant Open Access publishing funds pilot

- 24 month-subproject of OpenAIRE 2020
- Mechanism to support gold open access after end of grant
- Budget: €4 million
- FP7 publications
- For publications published up to two years after project end
- Up to three peer-reviewed publications per project
- OA monographs are eligible
- Details: <https://www.openaire.eu/goldoa/fp7-post-grant/pilot>



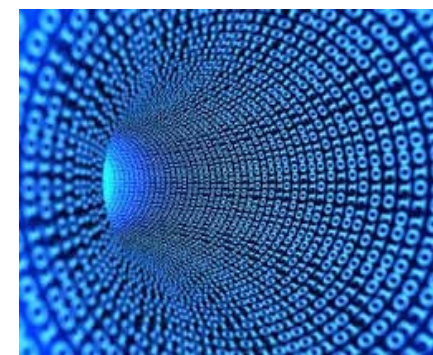


Open access policy in Horizon 2020



OPEN  ACCESS

Open Access to Research Data,
ie. Optimal reuse of research data





Pilot on Open Research Data in H2020

Three key questions:

Which thematic areas are covered?

What kind of data is covered?

What about data management?





Data management in Horizon 2020

- Data Management Plans (DMPs) mandatory for all projects participating in the Pilot, optional for others
 - DMPs are NOT part of the proposal evaluation
 - To be generated within first 6 months of project, updates as needed
- DMP questions:
 - What data will be collected / generated?
 - What standards will be used / how will metadata be generated?
 - What data will be exploited? What data will be shared / opened?
 - How will data be curated and preserved?
- **DMP: tool to determine what datasets can/cannot be open**





European Cloud Initiative

Part of the Digital Single Market Strategy

Content: **European Open Science Cloud**, European Digital Infrastructure, Widening the user base (e-government & industry) and building trust (certification and standards)

European Open Science Cloud

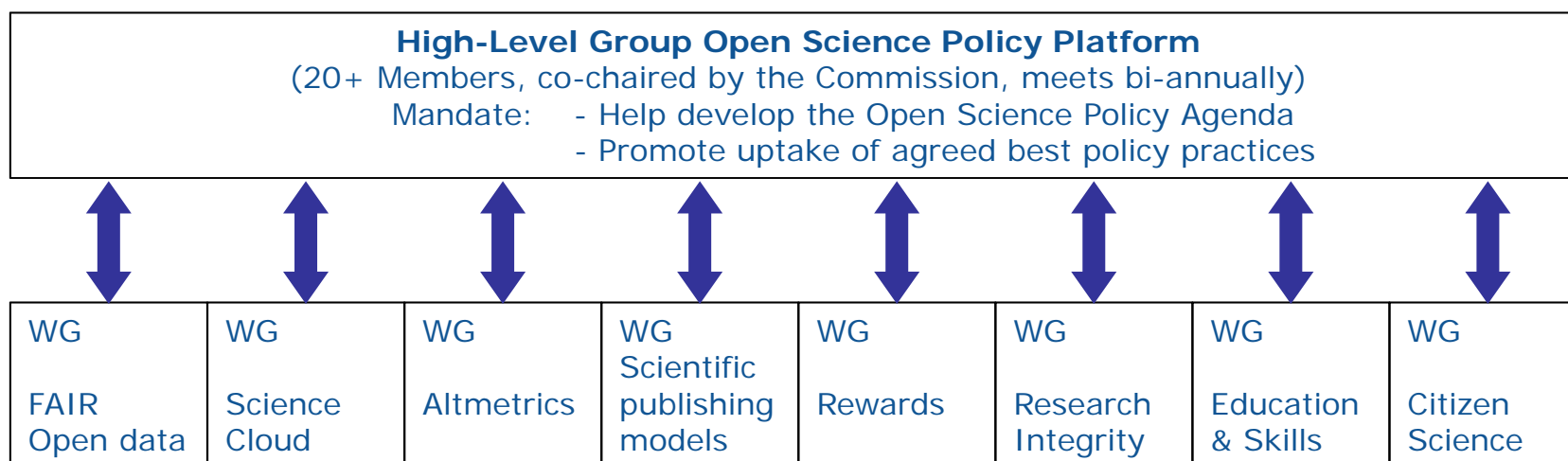
- A virtual environment for all European researchers to store, manage, analyse and re-use data
- Bringing together existing and emerging data infrastructures
- Added value: scale, data-driven science, inter-disciplinarity, data to knowledge to innovation

Basis: builds on long-time funding and policy work in e-Infrastructure and cloud computing





Open Science Policy Platform



To be announced soon ...





Open Science in the Digital Single Market

Thank you!

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