



# Open Science Initiatives by the European Union

CSTI Hearing  
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- Definition of what is to be open
- How Policy is decided
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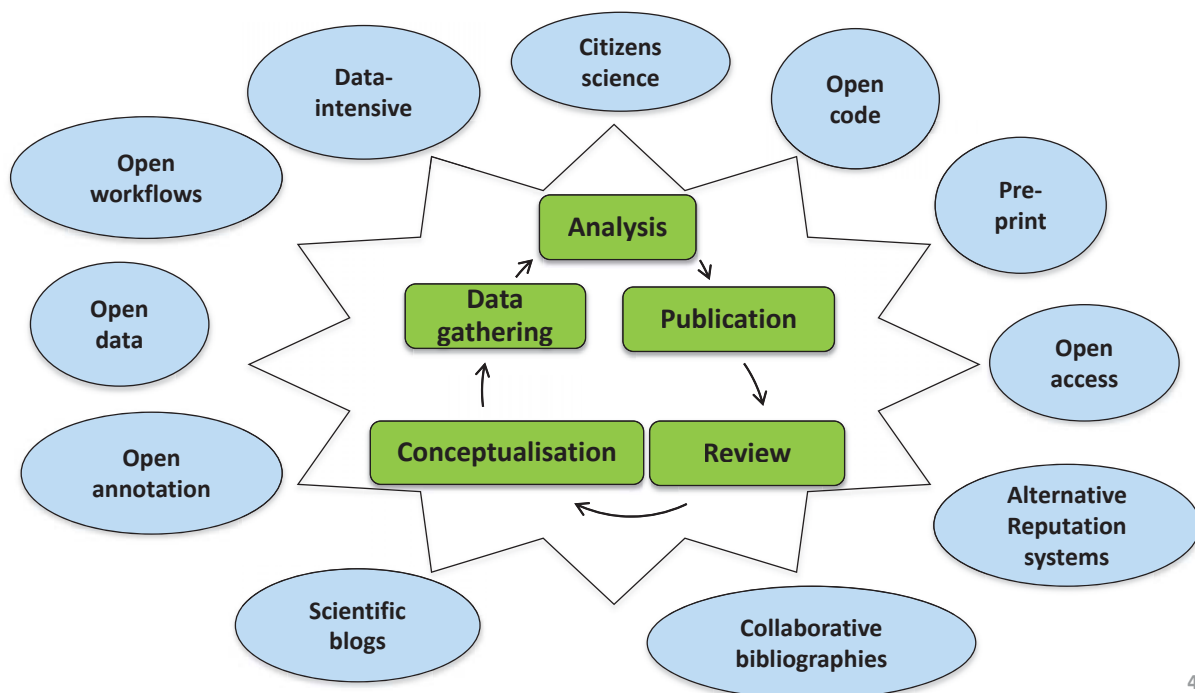
## Priorities of Commissioner Moedas:

- Open Innovation
- **Open Science**
- Open to the world

*(Speech on 22 June 2015)*



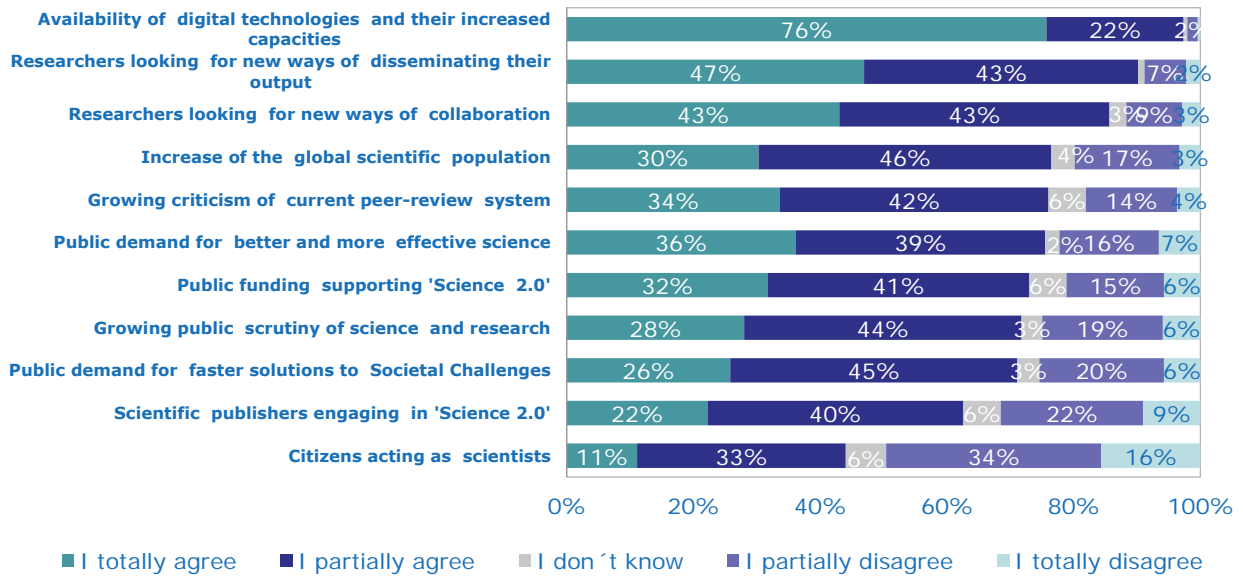
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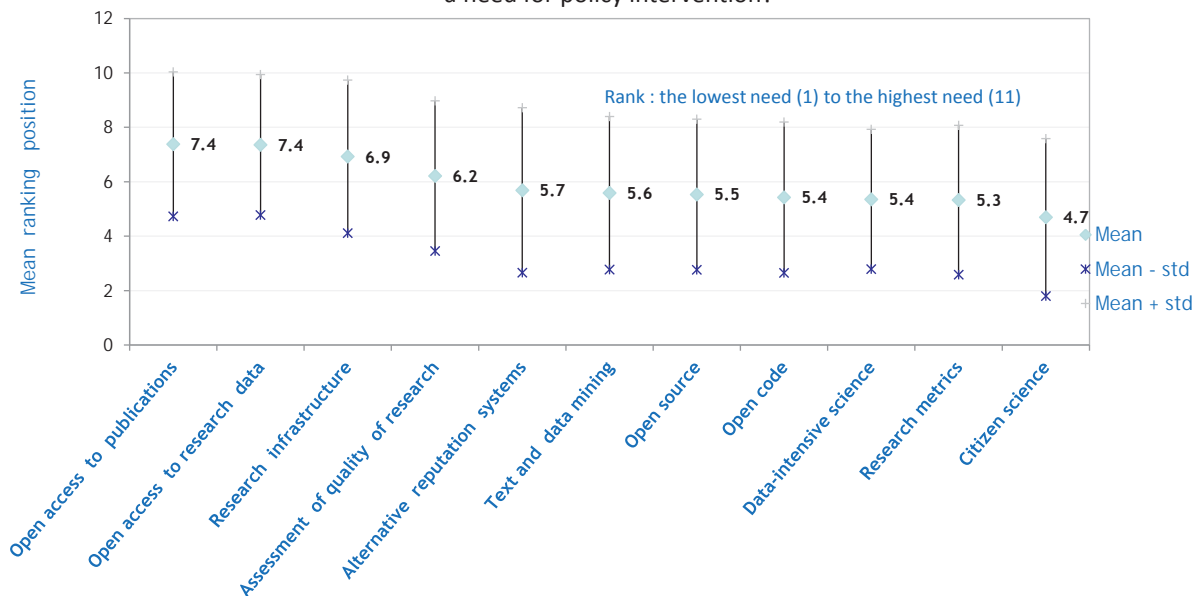
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### What are the key drivers of 'Science 2.0'?



### On what issues within 'Science 2.0' do you see a need for policy intervention?





# The European Commission is a...

## Policy maker

- It proposes EU legislation & legislates with other EU institutions
- It invites Member States to act

## Funding agency

- It sets its own access and dissemination rules for EC-funded research

## Capacity builder

- It funds projects that support EC/EU policy

**Policy developed jointly in DG RTD and CNECT, with input from the research family**



# Three key documents (17.07.2012)

- [Communication](#) 'A reinforced European Research Area partnership for excellence and growth'
- [Communication](#) 'Towards better access to scientific information: boosting the benefits of public investments in research'
- [Recommendation](#) on access to and preservation of scientific information



# OA in Horizon 2020: where to look

- Regulation establishing Horizon 2020 (article 18)
- Specific Programme (preamble 1.3)
- Rules for Participation (article 43)
- Work Programme 2014-15 (Introduction 1.5 and relevant areas)
- Model Grant Agreement (articles 6.2.D.3, 29.2 and 29.3)
- Annotated Model Grant Agreement (reference to Guidelines below)
- Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020
- Guidelines on Data Management in Horizon 2020
- Source for all documents: Participant Portal (reference documents)  
<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>
- [www.openaire.eu](http://www.openaire.eu) (NOADs pages, H2020 toolkit)



## From FP7 to H2020: OA to publications from pilot to underlying principle

### FP7

- **Green** open access pilot in 7 areas of FP7 with 'best effort' stipulation
- Allowed embargoes: 6/12 months
- **Gold** open access costs eligible for reimbursement as part of the project budget while the project runs

### Horizon 2020

- **Obligation** to provide OA, either through the **Green** or **Gold** way in **all areas** (deposition mandatory either way)
- Allowed embargoes: 6/12 months
- **Gold** open access costs eligible for reimbursement as part of the project budget while the project runs & **post-grant support being piloted**
- Authors encouraged to retain copyright and grant licences instead



# Consultation process on Science 2.0

- Online consultation open from 03.07.2014 to 30.09.2014
  - 498 submitted responses of which 164 Organisations and 38 Public Authorities
  - 25 position papers voluntary submitted in addition to questionnaire (LERU, UK University Organisations, Dutch University Association, EuroTech University Alliance, Publishers (Elsevier, STM), Research Funding Agencies etc.)
- Outcomes validated in 4 stakeholder workshops
- **Key findings (February 2015): open access to scientific publications and research data as important part of open science**



## Open Science Competitiveness Council 29 May 2015

Member States have expressed their wish for the development of a European Open Science Agenda

Council Conclusion, 29 May 2015:

CALLS for action to remove obstacles to wide access to publicly funded research publications and underlying data;

CALLS for actions addressing better data management and, in this context, WELCOMES the Pilot on Open Research Data under Horizon 2020;

In the context of the implementation of the European Research Area (ERA), LOOKS FORWARD to the possible development of action plans or strategies for open science



# What do we understand by OA?

**OA = online access at no charge to the user**

- to peer-reviewed scientific publications
- to research data

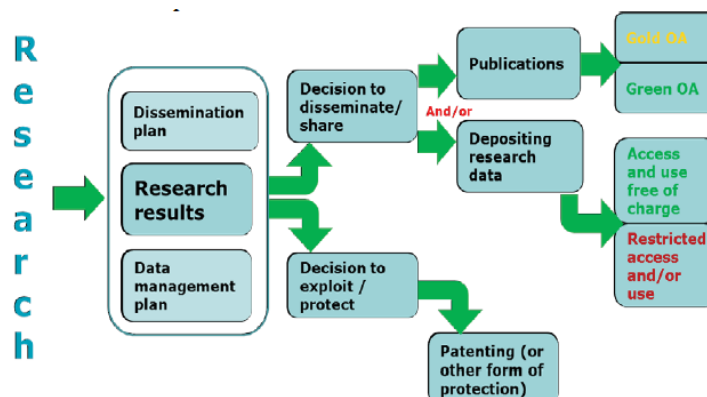
**Two main OA publishing business models**

- **Self-archiving:** 'traditional' publication plus deposit of manuscripts in a repository ('Green OA')  
Both versions contain the same peer-reviewed content, but may be differently formatted
- **OA publishing:** immediate OA provided by publisher ('Gold OA')  
usually, but not always, 'Author-pay' model (APC)  
some journals offer both subscriptions and open access publishing to selected on-line articles (hybrid journals)



# What OA is NOT

- Not an obligation to publish
- Not at odds with patenting (see graph)
- OA publications go the same peer review process





# Pilot on Open Research Data in H2020

## Types of data concerned:

- Data needed to validate the results presented in scientific publications ("underlying data")
- Other data as specified in data management plan (=up to projects)

## Beneficiaries participating in the Pilot will:

- Deposit this data in a research data repository of their choice
- Take measures to make it possible to access, mine, exploit, reproduce and disseminate free of charge
- Provide information about tools and instruments at the disposal of the beneficiaries and necessary for validating the results (where possible, provide the tools and instruments themselves)

EC: Support & monitoring (Annotated MGA, Specific guidance etc...)



# 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**, they need to be generated within the first six months of the project and updated as needed
  - All proposers to submit general information on data management - evaluated under criterion 'Impact'
- 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 / made open?
  - How will data be curated and preserved?





## European Open Science Agenda – potential infrastructure actions (under consideration)

### Develop research infrastructures for Open Science, e.g.:

- Mandate the development of common interfaces and data standards
- Coordinate at European Level the funding/ maintenance and interoperability of research infrastructures
- Support the development of a European Open Science Cloud for data, protocols and methodologies



## Issues to be addressed (e-infrastructure)

The EC in coordination with EU Member States is looking after research data as an infrastructure

As a valuable and a strategic resource, research data opens at least three key issues to be addressed<sup>(\*)</sup>:

- How data can be networked
- How to envision and set up data governance on a global scale
- How the EU can play a leading role in helping start and steer this global trend

*(\*) Fred Friend, Jean-Claude Guédon Herbert van de Sompel  
"Beyond Sharing and Re-using: Toward Global Data Networking"*



# A European Open Science Cloud

- The cloud aims to provide all EU researchers a virtual environment with free, open and seamless services for data storage, management, analysis and re-use, across disciplines.
- The cloud will federate existing and emerging horizontal and thematic data infrastructures, effectively bridging today's fragmentation and ad-hoc solutions.
- The cloud will add value - scale, data-driven science, inter-disciplinarity, data to knowledge to innovation - and leverage current and past infrastructure investment (10b per year by MS, two decades EU investment).



# A European Open Science Cloud

## Actions

- Horizon 2020 Research Infrastructure Actions for a "European Open Science Cloud" and "Data and Distributed Computing e-infrastructures for Open Science".
- High-level Cloud Expert Group to advise on the shape of a 'European Open Science Cloud' initiative. Overall, the group will advise the Commission on the strategy for the European Open Science Cloud initiative as part of the Digital Single Market.



# Incentives for Scientists

## For open access to publications:

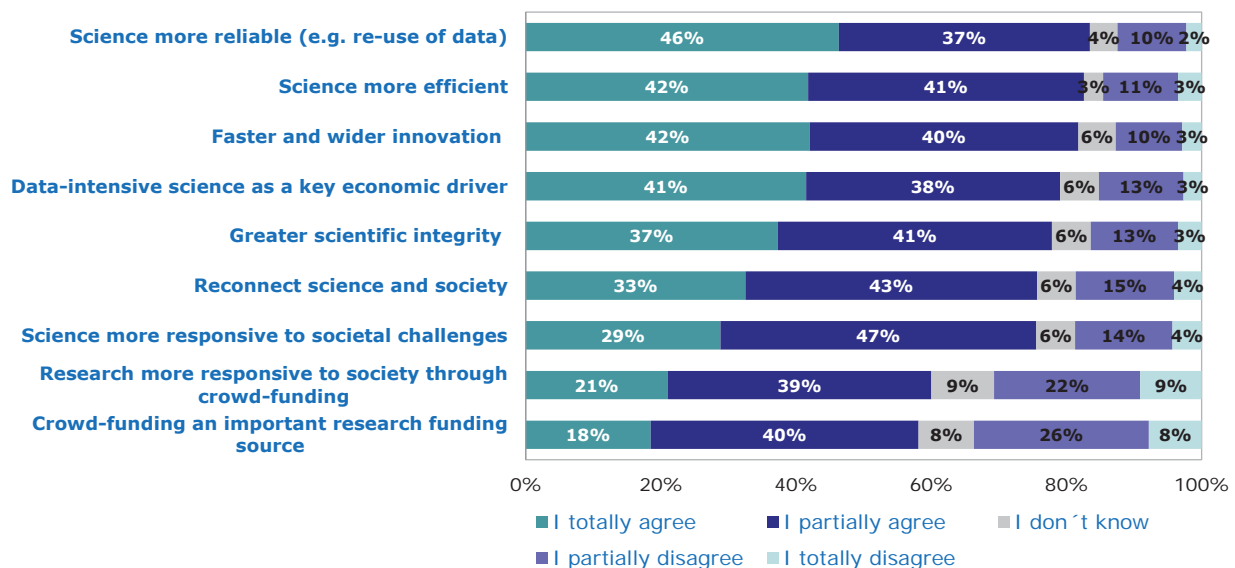
- Wider and quicker dissemination of scientific results
- OA costs are reimbursed under H2020

## For open access to data:

- Ease of access for data and tools
- Open new research avenues
- Interdisciplinary research
- Cooperate with different institutions/countries
- Career recognition for creating / maintaining data sets
- Availability of training for data set management
- Increased transparency leading to better verification



What are the implications of 'Science 2.0' for society, the economy and the research system?





# International Cooperation

Through international fora / initiatives :

- Global Research Council
- Data Research Alliance, COAR
- OECD
- G7

## Bilateral Cooperation EU-Japan

- EU-Japan Science Policy Forum on Science 2.0 (Kyoto 2014)
- Participation in seminars:
  - e.g. Kobe University Symposium on Open Science (October 2015)
- Participation in joint studies



## Research Data Alliance Research Data Sharing

- RDA community focuses on building **social, organizational and technical infrastructure** to
  - reduce barriers to data sharing and exchange
  - accelerate the development of coordinated global data infrastructure



Plenary 2  
Washington, DC

## CREATE → ADOPT → USE

### RDA Working Group Infrastructure

#### Deliverables are:

- **Focused pieces of adopted code, policy, infrastructure, standards, or best practices** that enable data to be shared and exchanged
- **“Harvestable” efforts** for which 12-18 months of work can eliminate a roadblock for a substantial community
- **Efforts that have substantive applicability** to “chunks” of the data community, but may not apply to everyone
- **Efforts for which working scientists and researchers can start today** while more long-term or far-reaching solutions are appropriately discussed in other venues



# Short-term Roadmap for EU Policy on Open Science

## Autumn 2015:

Set up of the Open Science Policy Platform  
Implementation of Open Science Monitor

## Autumn 2015\Spring 2016:

Concretization of Open Science actions under the *DSM strategy* (Juncker priority)

## 4-5 April 2016:

Conference on Open Science during the Dutch Presidency

## May 2016:

Presentation of the European Open Science Agenda to the Competitiveness Council

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## We welcome your input



Twitter:  
[@OpenAccessEC](https://twitter.com/OpenAccessEC)

## Contacts DG RTD

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PO as appropriate

## Links

**EC OA website**  
<http://ec.europa.eu/research/swafs/index.cfm?pg=policy&lib=science>

**Open Access Resources (Netvibes – EC Central Library)**  
<http://www.netvibes.com/open-access>

**Study to measure growth of OA**  
<http://science-metrix.com/en/publications/reports>

**H2020 guidance**  
[http://ec.europa.eu/research/participants/data/ref/h2020/grants\\_manual/hi/oa\\_pilot/h2020-hi-oa-pilot-guide\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf)  
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