From open access to open science: Opening up scientific information in Horizon 2020 and beyond

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DG Communications Networks, Content and Technology (CONNECT) - Digital Science Unit

7th UNICA Scholarly Communication Seminar:

Visibility, Visibility, Visibility

Rome, 28 November 2014

Outline

- Open access: approach
- Open access to publications in Horizon 2020
- Open Research Data Pilot in Horizon 2020
- The broader policy context: open science

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Why open access?

***Goal:* optimise the impact of publicly-funded research and innovation**

Expected impacts of opening up scientific information:

- Better science (build on previous results)
- More efficient science (avoid duplication & promote re-use)
- Economic growth (accelerated and open innovation)
- Improved transparency (involving citizens & society)

How?

- Open up scientific information resulting from EU-funded research (Horizon 2020)
- Work with Member States to encourage co-ordination of policies (→ Network of National Points of Reference)

Political basis: Scientific information package (Communication & Recommendation to MS) and ERA Communication, July 2012

Open access to what scientific information?

1. Scientific publications:

Open Access (OA): online access at no charge to the user

Two main OA publishing business models

- **Self-archiving**: deposit of manuscripts & **immediate/delayed OA** provided by author ("Green OA")
- **OA publishing**: costs covered & **immediate OA** provided by publisher ("Gold OA")

2. Research Data:

Open Research Data (ORD): data that can be accessed, mined, exploited, reproduced and disseminated – free of charge for any user

Scientific information: increasingly blurred boundaries

- Scientific publications … are data

Text is data (text and datamining)

Underlying research data

- Research data can be published (data publications)

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Open Access to Publications

OPEN ACCESS

Basis: OA to publications in FP7

OA Pilot in FP7

- "Best effort" basis
- 7 areas
- 20% of total FP7 budget (2007-2013)
- Support from researchers, need for more support

OA (gold) publishing costs eligible in FP7

- Since the beginning of FP7, for all projects
- Limited to duration of project

e-Infrastructure: OpenAIRE / OpenAIRE+

- EU-funded portal giving access to repositories across Europe (implements FP7 Pilot), network of helpdesks
- 73,000 publications in 7.900 projects, 37.000 OA, others still under embargo/restricted

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)
- **New:** Aim to deposit at the same time the research data needed to validate the results ("underlying data")
- **New:** Ensure OA to the bibliographic metadata that identify the deposited publication, via the repository

OA to publications mandate: other issues

Routes towards OA:

- **OA publishing/gold** and **self-archiving/green** considered valid and complementary routes
- Always deposit into a repository (also in the case of gold OA)

Costs for OA publishing:

- Eligibility of OA publishing costs during the grant (as in FP7)
- Piloting a mechanism for open access publishing after the end of the grant agreement

Licencing:

- Encourage authors to retain their copyright and to grant adequate licences to publishers (e.g. Creative Commons)

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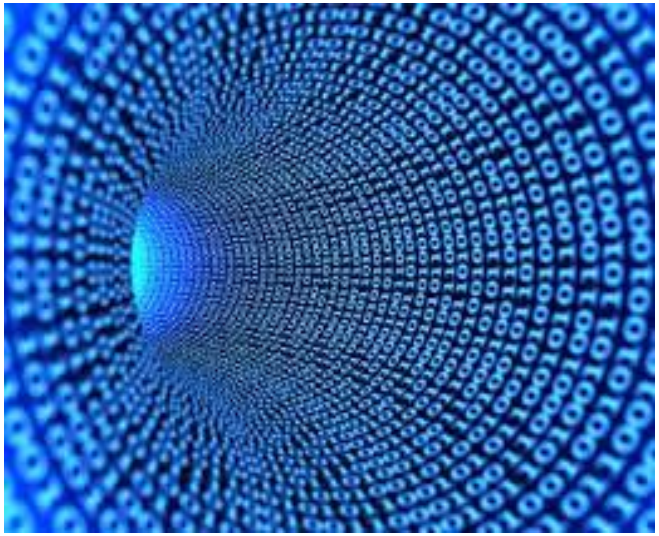
Open Access to Research Data



New: Pilot on Open Research Data in Horizon 2020:

- Scope of the Pilot?
- What data is covered?
- What about data management?
- What are the requirements?
- When can actions opt out?

Pilot on Open Research Data: Scope

Areas of the 2014-2015 Work Programme participating in the Open Research Data Pilot are:

- Future and Emerging Technologies (FET)
- Research infrastructures – part e-Infrastructures
- Leadership in enabling and industrial technologies – Information and Communication Technologies (LEIT-ICT)
- Societal Challenge: Secure, Clean and Efficient Energy – part Smart cities and communities
- Societal Challenge: Climate Action, Environment, Resource Efficiency and Raw materials – except raw materials
- Societal Challenge: Europe in a changing world – inclusive, innovative and reflective Societies
- Science with and for Society

Actions in other areas can participate on a voluntary basis!

Pilot on Open Research Data: What data?

Types of data concerned:

- Data (including associated metadata) needed to validate the results presented in scientific publications ("underlying data")
- Other data (including associated metadata) as specified in a data management plan (DMP)

What about data management?

- New focus on Data management in H2020
- All proposers to submit general information on data management - evaluated under criterion 'Impact'
- Data Management Plans (DMPs) mandatory for all actions participating in the Pilot (deliverable within the first six months)
- Other projects invited to submit a DMP if relevant for their planned research
- DMP questions (template: Data Management Guidelines):
  - What data will be collected or generated?
  - What standards will be used and how will metadata be generated?
  - What data will be exploited? What data will be shared /made open?
  - How will data be curated and preserved?

Pilot on Open Research Data: requirements?

Beneficiaries participating in the Pilot will:

- Deposit a) underlying and b) "other data" as specified in the DMP into a research data repository of their choice
- Take measures to make it possible to access, mine, exploit, reproduce and disseminate free of charge (using e.g. Creative Commons licences)
- 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)
- **Note:** Actions participating in the Pilot are not obliged to make all datasets open (details described in DMP)

Pilot on Open Research Data: opting out

Actions may opt out of the Pilot on Open Research Data in Horizon 2020 in a series of cases (submission stage):

- If the project will not generate / collect any data
- In case of conflict with the obligation to protect results
- In case of conflict with confidentiality obligations
- In case of conflict with (national) security obligations
- In case of Conflict with rules on protection of personal data
- If the achievement of the action's main objective would be jeopardised by making specific parts of the research data openly accessible

ORD Pilot: first numbers

- Preliminary!
- Basis: 3054 Horizon 2020 proposals

  442 of 1824 in scope proposals **opt out (24.2%)**

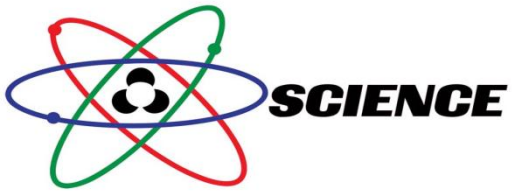
  334 of 1230 not in scope proposals **participate on a voluntary basis (27.2%)**

- More analysis needed: e.g. reasons for opt-out and voluntary opt-in

ORD Pilot: a chance to co-shape policy

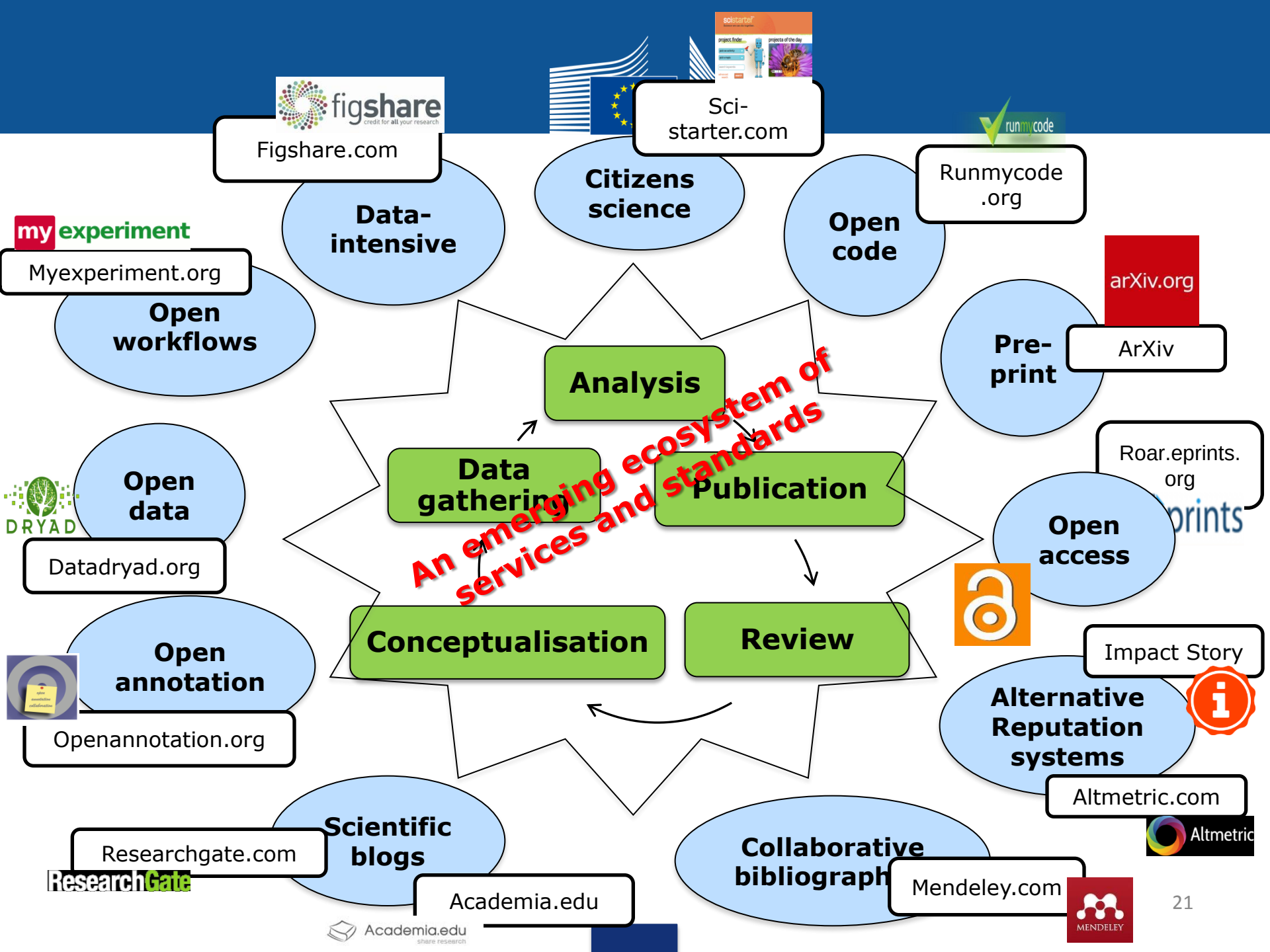
- Opening up research data: the new frontier
- Ambitious, yet pragmatic design: broad scope, opt-out, voluntary participation possible
- Pilot is flexible; numerous safegards in place
- Need to collect and analyse many and varied experiences
- Uptake of and experiences with the Pilot will be monitored
- Support & monitoring to be developed
- **Participating in the Pilot means co-shaping European policy on opening up research data … in the next Framework Programme!**

The broader policy context:



Open Science is …

The transformation, opening up and democratisation of science and research through ICT, with the objectives of making science more efficient, transparent and interdisciplinary, of changing the interaction between science and society, and of enabling broader societal impact and innovation.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Data-intensive
Citizens science
Open code
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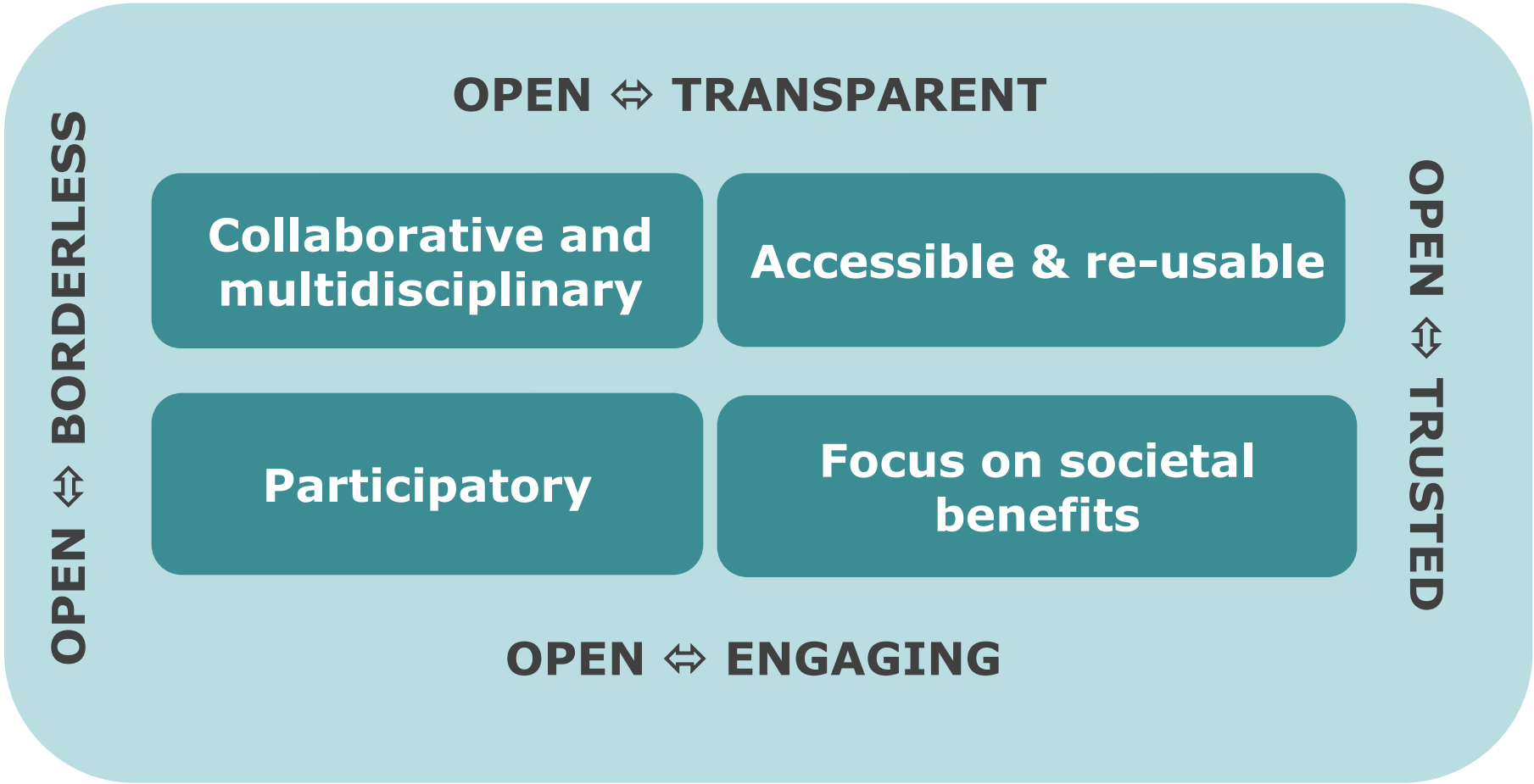
Open Science: the building blocks of a vision



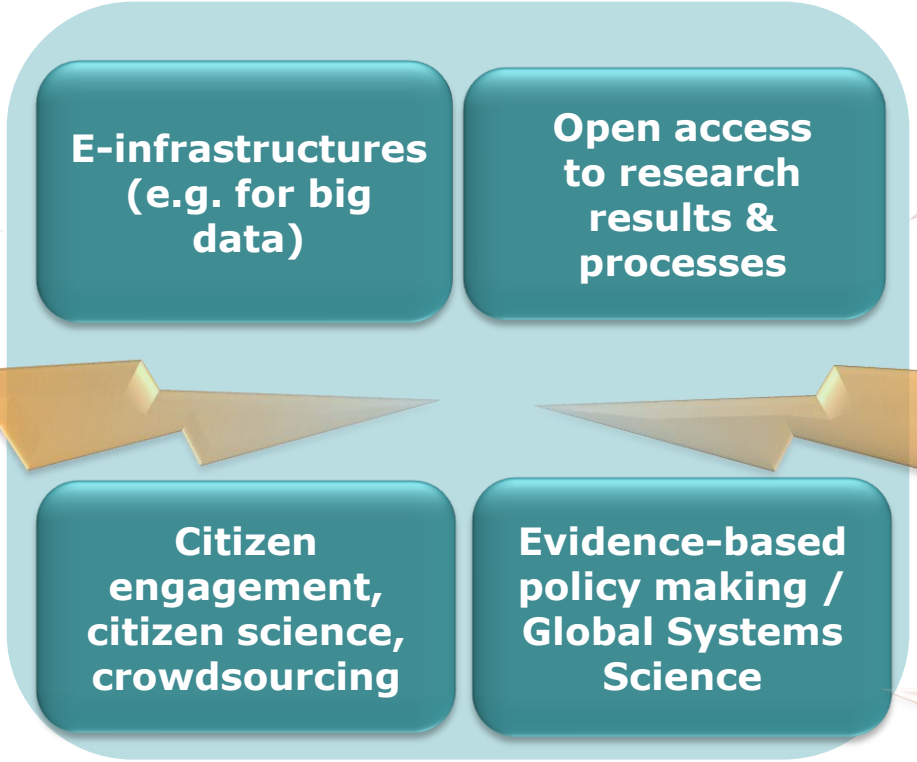
Open Science: the challenges

- No access limitations
- Virtual Research Environments

- Alternative publishing models
- Research data standards, open metadata
- Open source
- Text and Data-mining

- Alternative metrics for science and research
- Open peer review

- Science for innovation, e.g. ICT and Art



- From isolated examples to research methods
- New ways of funding research

- Link science and society in policy decisions
- Societal data deluge and data-intensive modelling

Catalyse a change in culture !

for researchers, research organisations and industry

Open Science: EC-level action

July - September 2014: Public consultation "Science 2.0: Science in Transition"

October - December 2014: Multi-stakeholder workshops on consultation findings (themes: research careers, peer review, science and society relations, altmetrics)

June 2015: Open Science Conference in Brussels (TBC)

2015-16: Towards a Communication on open science?

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Thank you!

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Guidelines on OA to Scientific Publications and Research Data in Horizon 2020:
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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