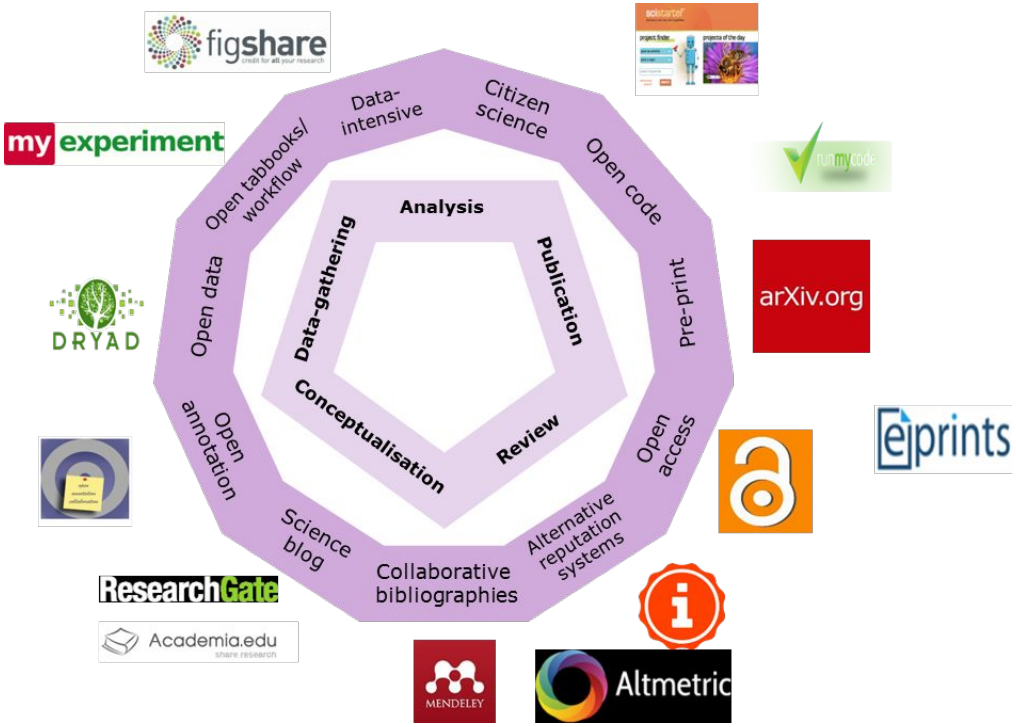
Cultural change and European policies to promote Open Science in universities

Alea López de San Román, DG R&I G.4, Open Science unit

Open Science International Staff Week, UC3M, 6-8 November 2019

The policy context: Open Science



Open Science
=
Systemic transition of the science system which affects the way

- **research is performed**
- **knowledge is shared/diffused/preserved**
- **research projects/results are evaluated**
- **research is funded**
- **researchers are rewarded**
- **future researchers are trained**

Affecting the whole research cycle and all its stakeholders

Illustration: Ron Dekker, CESSDA

Why is Open Science so important?

It's good for science: efficiency, verifiability, transparency, inter-disciplinarity

It's good for the economy: access to and re-use of scientific information by industry, innovation

It's good for society: broader, faster, transparent & equal access for citizens, increased societal impact of science and research

Open Science is:

- ***Just science done right!***
- ***Excellent science!***

Stickers: Melanie Imming, ImmingImpact

Priority areas

Use & management of research results and data

- Open Data
- European Open Science Cloud
- Altmetrics
- Future of scholarly communication

Research actors (researchers, institutions and funders)

- Rewards
- Research Integrity
- Education and skills
- Citizen Science

Commissioner-designate Gabriel

EP Hearing (30/09/19)

"The Open Science issue is […] an issue that is dear to my heart"

"Today, more than ever, we need researchers to share the results of their projects with others, and to capitalize on the research of others"

"I will insist on having data that are […] reusable, accessible, of quality"

"There will be no strong European Union without our European citizens understanding, supporting and sharing our common goals"

For Open Science to develop its full potential….

There needs to be a cultural change!

How is the European Commission supporting that cultural change?

As...

A policy maker

- We propose EU legislation
- We invite Member States to act

A funding agency

We set our own rules for EC-funded scientific research and innovation

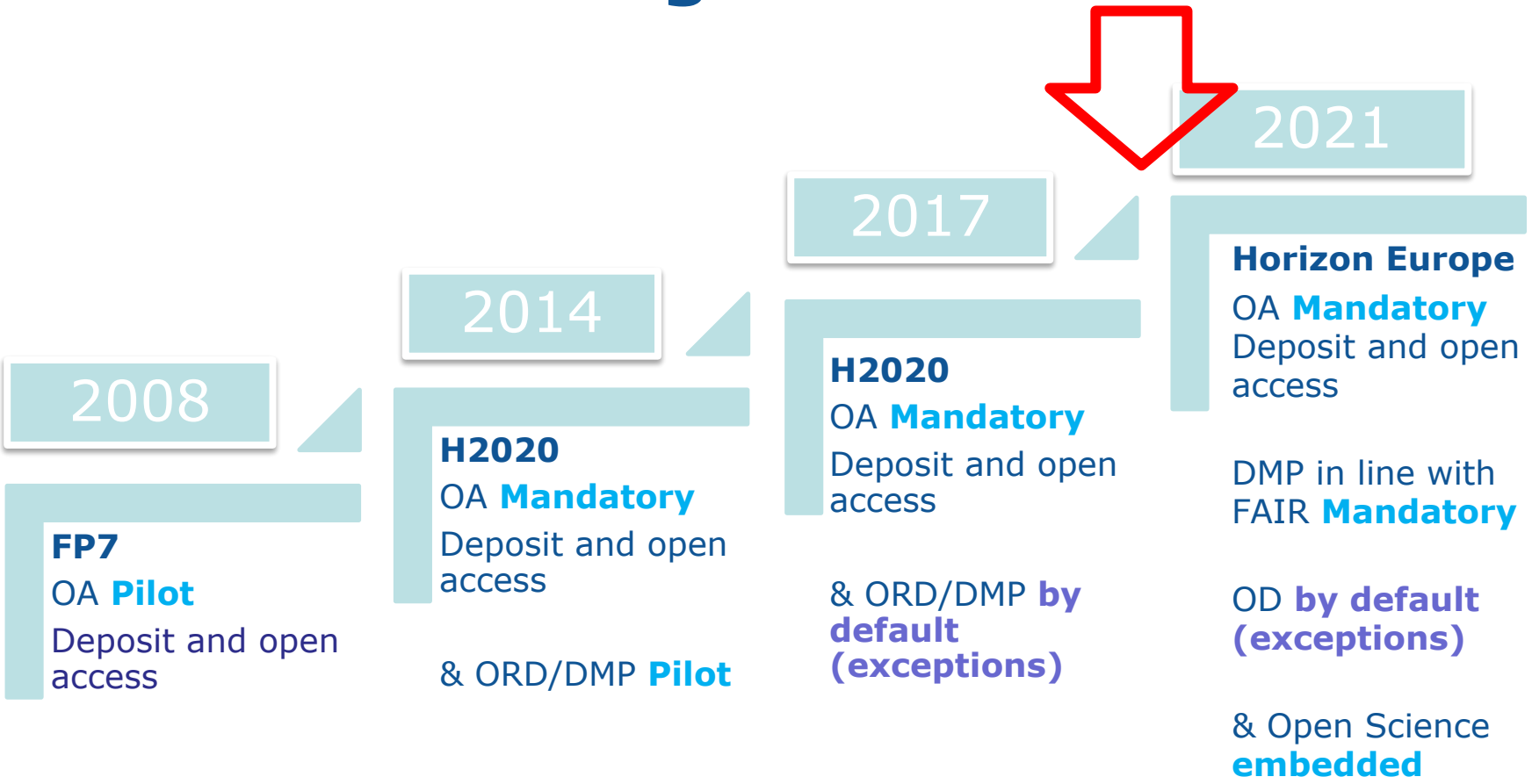
A capacity builder

We fund projects that support our policy

We support the Open Science cultural change…

As a funding agency

Open Science in the R&I Framework Programmes



Horizon Europe goes beyond OA (publications & data)

to embrace & incentivise Open Science as *modus operandi* for science

Articles setting Open Science obligations in Horizon Europe

Article 2 defines open access and open science

Article 10 sets the **obligations** for Open Science with regard to Open Access, RDM, FAIR and other open science practices. It also sets the **principle of reciprocity** in Open Science.

Article 35 foresees further **obligation**s in terms of IPR, Data Management Plans, FAIR and use of European Open Science Cloud and certain exceptions ("as open as possible as closed as necessary")

We support the Open Science cultural change…

As a policy maker

Open Science in the EU legislation

Revision of the Recommendation on access to and preservation of scientific information (2018)

- Setting the landscape for OS with a view to tackle disparities
- Also covers infrastructure, metrics, rewards, skills…

Revision of the EU Copyright Directive (2018)

- Provides for an exception for research organisations to carry out Text and Data Mining (data analytics)

Revision of the Open data and the re-use of public sector information Directive (2018)

- Applies to publicly funded research data that are publicly available through repositories
- 'As open as possible, as closed as necessary

European Cloud Initiative (2016) Communication

- Tapping into the wealth of data in Europe
- European Open Science Cloud (EOSC)

We support the Open Science cultural change…

As a capacity builder

The Open Research Europe publishing platform

- Help H2020 beneficiaries and their researchers comply with the open access mandate without paying APCs during and after the grant
- Improve uptake of OA in H2020
- Promote OA as THE mode for publishing from now on
- Support open science and lead by example
  - ✔ Early sharing of research (pre-prints + peer-reviewed articles)
  - ✔ Open peer-review+ post publication commenting
  - ✔ New generation metrics
- Explore business models in OA publishing and sustainability

- Tenders under evaluation

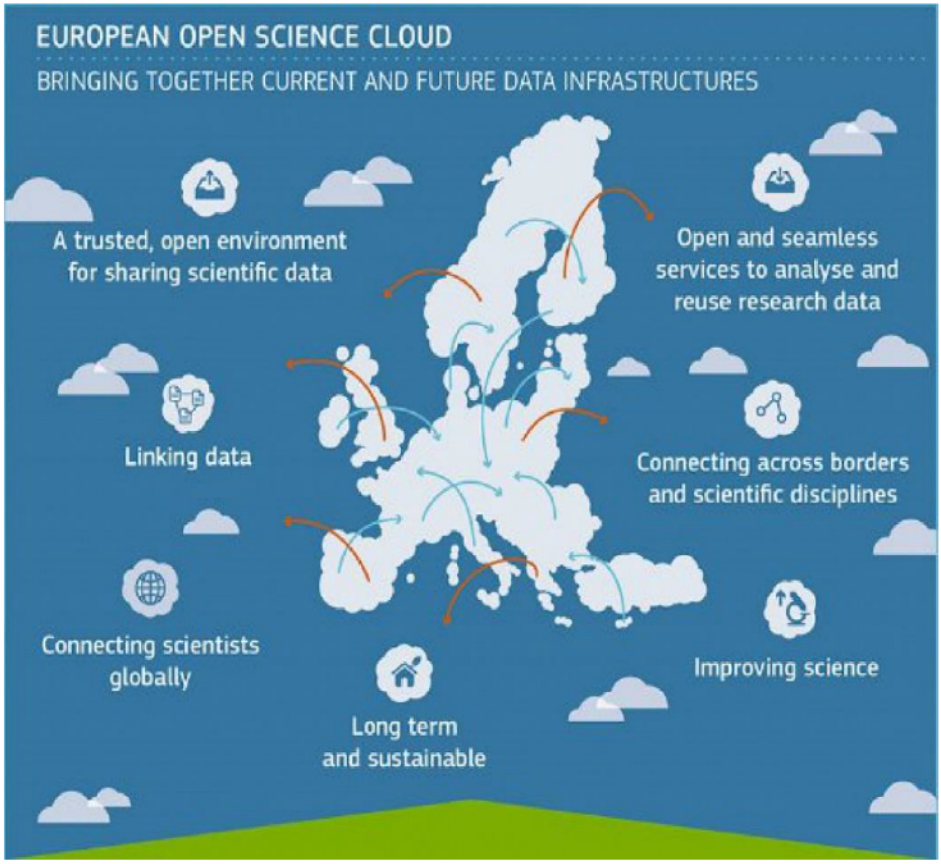
The Vision for EOSC

European Commission

- **EOSC will provide 1.7m EU researchers an environment with free, open services for data** storage, management, analysis and re-use across disciplines

- **EOSC will join existing and emerging horizontal and thematic data infrastructures**, bridging todays fragmentation and ad-hoc solutions

- **EOSC will add value** (scale, data-driven science, inter-disciplinarity, faster innovation) and leverage past infrastructure investment (10b per year by MS, two decades EU investment)



« The transition to Open Science is complex and multifaceted, which means it is unlikely to be immediate and will require substantive resources and decision-making by all stakeholders involved in supporting, performing and using research. »

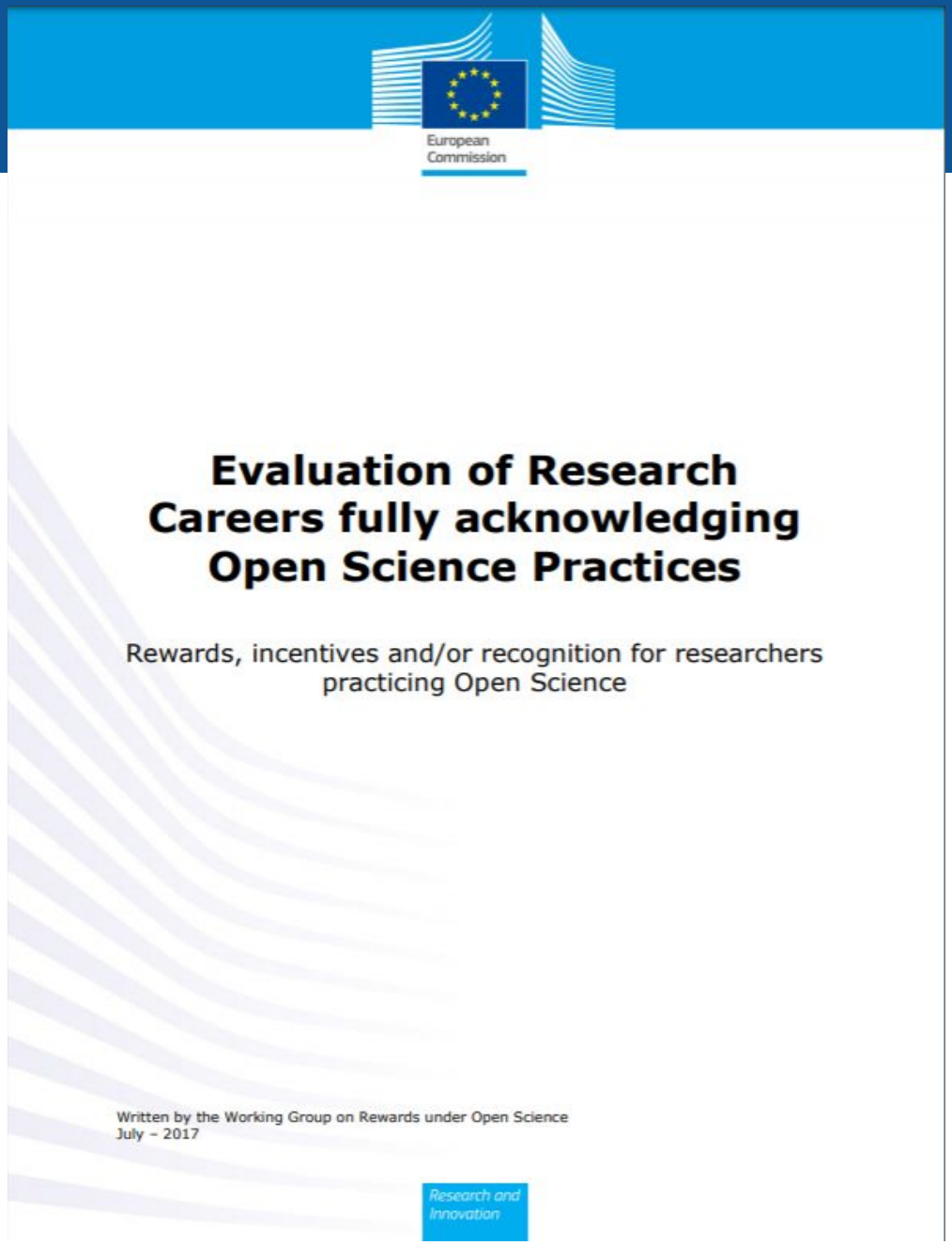
MLE on Open Science: Altmetrics and Reards – Incentives and Rewards to Engage in Open Science Activities, Thematic Report No 3, November 2017

Rewards and incentives

Figure 9 – Importance of academic activities for research careers

Based on survey question 7, ranking question (cf. Annex 1). Number of respondents: 191-195/197

EUA, *Research Asssessment in the Transition to Open Science*, October 2019



https://op.europa.eu/sv/publication-detail/-/publication/47a3a330-c9cb-11e7-8e69-01aa75ed71a1

« The exclusive use of bibliometric parameters as proxies for excellence in assessment by most funding agencies and universities/research organisations does not facilitate Open Science.

Researchers´ engagement in Open Science will increase through **encouragement and incentives from employers and funders through assessment**. »

Evaluation of Research Careers fully acknowledging Open Science practices; Rewards, Incentives and/or recognition for rseearchers practicing Open Science, July 2017

Evaluation of HE proposals

We´re currently exploring how to integrate Open Science practices in the evaluation of HE proposals

Figure 1. Open Science Career Assessment Matrix (OS-CAM) representing the range of evaluation criteria for assessing Open Science activities

Open Science Career Assessment Matrix (OS-CAM)	
Open Science activities	*Possible evaluation criteria*
RESEARCH OUTPUT	
Research activity	Pushing forward the boundaries of open science as a research topic
Publications	Publishing in open access journals Self-archiving in open access repositories
Datasets and research results	Using the FAIR data principles Adopting quality standards in open data management and open datasets Making use of open data from other researchers
Open source	Using open source software and other open tools Developing new software and tools that are open to other users
Funding	Securing funding f
RESEARCH PROCESS	
Stakeholder engagement / citizen science	Actively engaging Sharing provisiona platforms (e.g. Ar Involving stakehol
Collaboration and Interdisciplinarity	Widening participa Engaging in team
Research integrity	Being aware of t confidentiality, att activities Fully recognizing including collabora
Risk management	Taking account of
SERVICE AND LEADERSHIP	
Leadership	Developing a visio normal practice of Driving policy and
	Being a role model in practicing open science
Academic standing	Developing an international or national profile for open science activities Contributing as editor or advisor for open science journals or bodies
Peer review	Contributing to open peer review processes Examining or assessing open research
Networking	Participating in national and international networks relating to open science
RESEARCH IMPACT	
Communication and Dissemination	Participating in public engagement activities Sharing research results through non-academic dissemination channels Translating research into a language suitable for public understanding
IP (patents, licenses)	Being knowledgeable on the legal and ethical issues relating to IPR Transferring IP to the wider economy
Societal impact	Evidence of use of research by societal groups Recognition from societal groups or for societal activities
Knowledge exchange	Engaging in open innovation with partners beyond academia
TEACHING AND SUPERVISION	
Teaching	Training other researchers in open science principles and methods Developing curricula and programs in open science methods, including open science data management Raising awareness and understanding in open science in undergraduate and masters' programs
Mentoring	Mentoring and encouraging others in developing their open science capabilities
Supervision	Supporting early stage researchers to adopt an open science approach
PROFESSIONAL EXPERIENCE	
Continuing professional development	Investing in own professional development to build open science capabilities
Project management	Successfully delivering open science projects involving diverse research teams
Personal qualities	Demonstrating the personal qualities to engage society and research users with open science Showing the flexibility and perseverance to respond to the challenges of conducting open science

Thank you!

Mail: RTD-open-access@ec.europa.eu

Web: ec.europa.eu/research/openscience/