



Open Science in Europe: The Perspective from the European Commission

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This presentation

Policies and activities for Open Science of the European Commission, focus on recent developments & activities

A bird's-eye-view of the situation in EU Member States in their own words: the new NPR report

Why Open Science?

- **Better ROI of the R&I investments:** if all the results of our public research are made reusable, more productive use follows by default
- **Faster circulation of new ideas:** we have 22 million EU SME's that will have access to top notch research without having to significantly pay for it!
- **More transparency of the science system as such:** the public taxpayer has this right and it can only enhance the quality of science
- **Fit for 21st century science purpose:** all grand societal challenges need cross disciplinary research

For researchers:

- Wider dissemination and sharing of their results
- More visibility and credit for what happens before an article get published
- New career paths e.g. data scientists, start-ups, science diplomacy

Therefore: top level policy priority



*"As I see it, European success now lies in sharing as soon as possible, (...). The days of **open science** have arrived."*

"Presidency Conference Open Science", Amsterdam, April 4th, 2016

Open **Innovation**
Open **Science**
Open to the **World**

European Commission policies: systematic and growing support

- 2007 • EC Communication on Scientific Information
- 2008 • FP7 OA Pilot
- 2012 • Recommendation on OA to and preservation of scientific information
• Communication on European Research Area (ERA)
- 2014- • Horizon 2020 OA and Open Research Data (ORD) policies
- 2015 • Digital Single Market (DSM) strategy
- 2016 • European Cloud Initiative Communication (ECI)- The European Open Science Cloud
- 2018 • Revision of the 2012 Recommendation in conjunction with recast of PSI Directive
- 2018 • Launch of the first phase of the EOSC
- 2018- • Preparing Open Science for FP9 - Horizon Europe

Open Science policy: bottom up & co-design

Extensive stakeholder consultation

- ✓ Public consultation (July-September 2014)
- ✓ Validation workshops (October-December 2014)
- ✓ Final report (February 2015)

Strong support by Member States and Competitiveness Council

- ✓ Policy debate & Council conclusions 'data-driven economy' May 2015
- ✓ Presidency conference Open Science, April 2016
- ✓ Council conclusions on Open Science, May 2016
- ✓ Council conclusions endorsing EOSC implementation roadmap, May 2018 **new****

European Open Science Agenda

- ✓ 8 policy ambitions
- ✓ Open Science Policy Platform (integrated advice **new****)
- ✓ Embedded in the Digital Single Market strategy

Supporting and mainstreaming open science in H2020

- **Through the work programmes: dedicated direct and indirect support for open science (policy support and development, skills, infrastructures and the EOSC)**
- **Specific, increasingly broadened and stricter open access requirements (through articles 29.2 and 29.3)**
- **External advice on policy by expert groups and stakeholders on open science**



HOLISTIC POLICY AGENDA SCOPE & AMBITIONS

- 4 with regard to the use & management of research results and data
- ✓ Open Data: FAIR data sharing is the default for funding scientific research
 - ✓ Science Cloud: All EU researchers are able to deposit, access and analyse European scientific data through the open science cloud, without leaving their desk
 - ✓ Altmetrics: Alternative metrics (next generation metrics) to complement conventional indicators for research quality and impact (e.g. Journal Impact Factors and citations)
 - ✓ Future of scholarly communication: All peer reviewed scientific publications are freely accessible



HOLISTIC POLICY AGENDA SCOPE & AMBITIONS

4 with regard to relations with research actors (researchers, institutions and funders)

- ✓ Rewards: The European research career evaluation system fully acknowledges Open Science activities
- ✓ Research Integrity: All publicly funded research in the EU adheres to commonly agreed Open Science Standards of Research Integrity
- ✓ Education and skills: All young scientists in Europe have the necessary skills and support to apply Open Science research routines and practices
- ✓ Citizen Science: Citizens significantly contribute and are recognised as valid knowledge producers of European science

What is the vision for the EOSC?

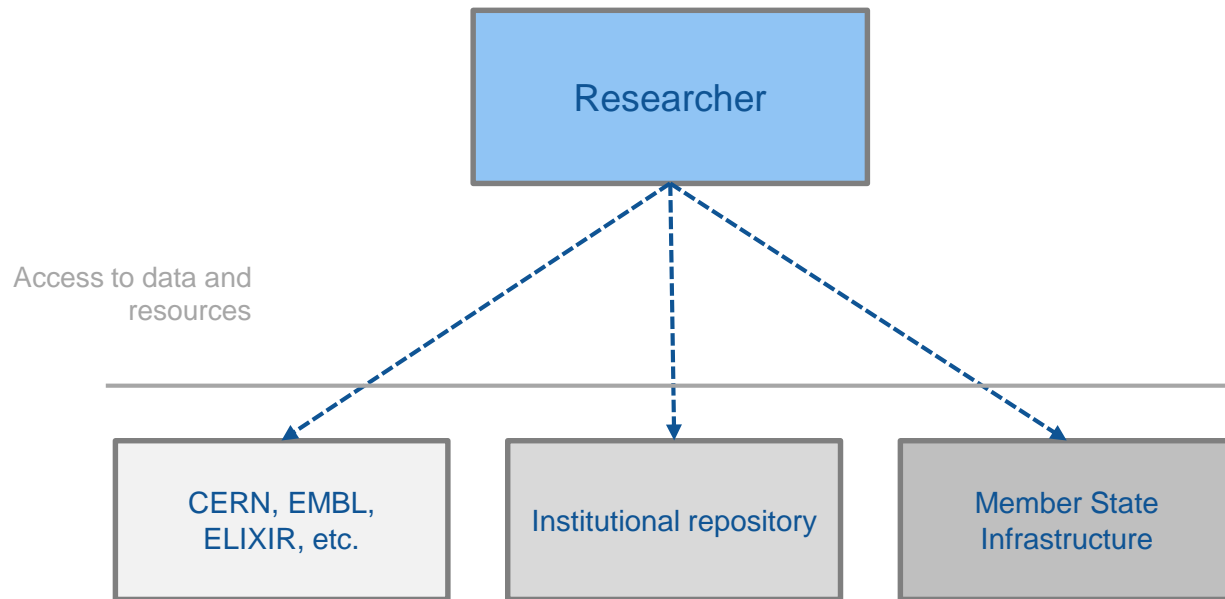
'The EOSC aims to give Europe a global lead in scientific data infrastructures.... It will offer 1.7 million European researchers and 70 million professional in science and technology a virtual environment with free at the point of use, open and seamless services for storage, management, analysis, and reuse of research data, across borders and scientific disciplines'

The European Cloud Initiative (COM(2016) 178final)

Facts:

- **EOSC is part of the DSM strategy**
- **Aimed at addressing the apparent inability of Europe to tap into the wealth of research data**

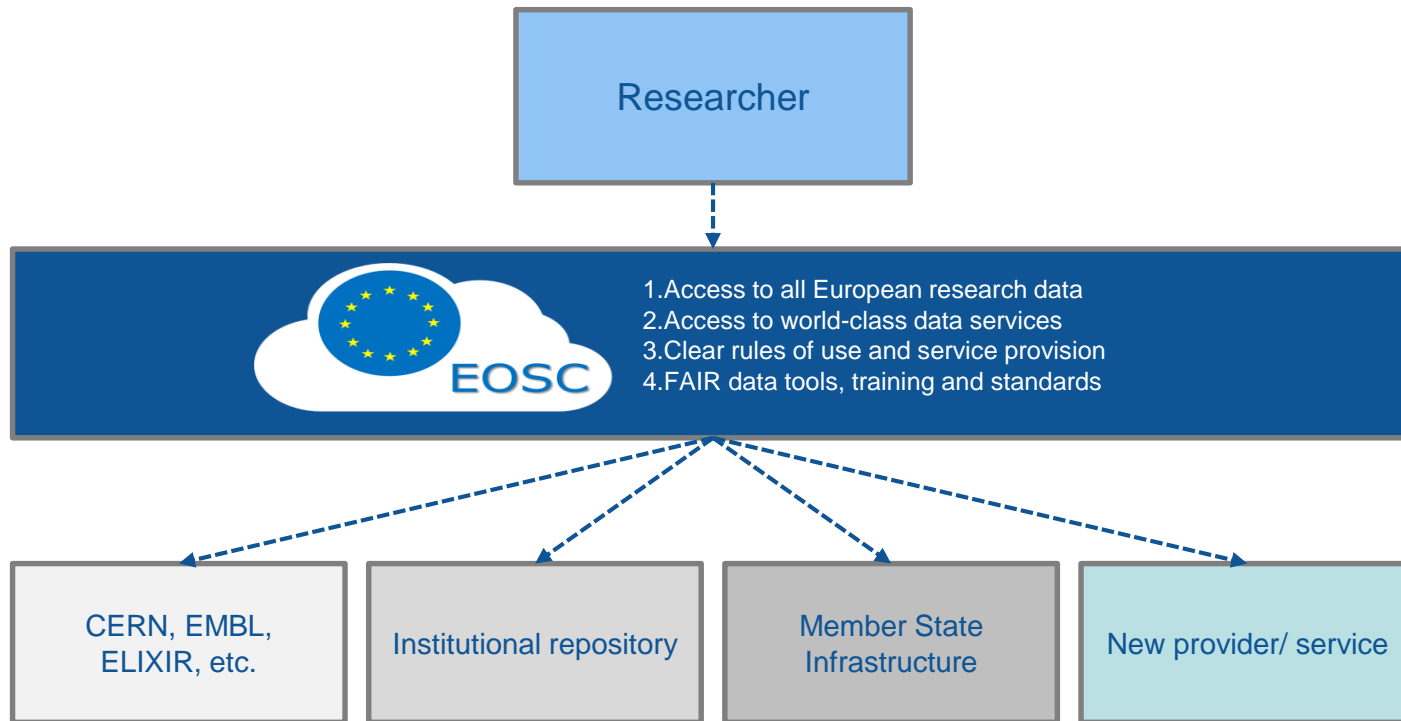
European researchers face data fragmentation and unequal access to quality information sets



- Fragmented access (across scientific domains, countries and governance models; varying access policies)
- Limited cross-disciplinary access to data sets (i.e. interdisciplinary research)
- Non-interoperable services and data
- Closed data

Limited and limiting access for an ordinary European researcher

The EOSC will allow for universal access to data and a new level playing field for EU researchers



- Easy access through a universal access point for ALL European researchers
- Cross-disciplinary access to data and services unleashes potential of interdisciplinary research
- Services and data are interoperable (FAIR data)
- Data funded with public money is in principle open (as open as possible, as closed as necessary)
- EOSC will help increase recognition data intensive research and data science

Seamless federated environment enabling interdisciplinary research

EOSC policy milestones

- | | | |
|------------|--|---------------|
| June 2017 | <input type="checkbox"/> EOSC Summit forming the coalition of the willing | |
| Oct 2017 | <input type="checkbox"/> EOSC Declaration published for endorsements and to seek commitments | |
| March 2018 | <input type="checkbox"/> EOSC Roadmap presented for consultation to Council RWP | |
| May 2018 | <input type="checkbox"/> Council conclusions endorsing the EOSC Roadmap (May 30 th) | Done ! |
| <hr/> | | |
| Fall 2018 | <input type="checkbox"/> Establishment of the Governance structure; MS designate representatives to the EOSC board. Selection of members to the governance structure | |
| Nov 2018 | <input type="checkbox"/> MS agreement on EOSC governance structure (Austrian Presidency event) | |
| End 2020 | <input type="checkbox"/> MS+ EC agreement on the future strategic orientation and financing scheme for the EOSC | |

To do!

Adopted

25/4/2018



Public sector and publicly funded data



Private sector data



Research data

Proposal for a revision of the Directive on the reuse of public sector information

Draft Guidance on private sector data sharing in B2B and B2G contexts

Update 2012 Recommendation on access to and preservation of scientific information

2018 DATA PACKAGE

Different policy instruments for different types of data

#dataeconomy #opendata

Proposal for a **PSI Directive** (recast) and **research data**

In the DSM Mid-term review, the Commission promised to adopt measures to enhance the availability of public and publicly funded data by spring 2018.

The proposal adopted on 25 April as part of the 'Data Package' extends the scope of the PSI Directive to publicly-funded research data already accessible via repositories (art. 10).

In addition, it requires the Member States to adopt national Open Access policies to further encourage the availability and re-use of research data.

Re-use of research data will be free. The provisions of the PSI Directive will apply (e.g. licensing, formats, non-discrimination) with some exceptions (i.e. request procedure – Article 4).

The Revision of the 2012 Recommendation on access to and preservation of scientific information

The original Recommendation of 2012

- **Part of package that contained measures to improve and harmonize access to scientific information produced in Europe (incl. Horizon 2020)**

The revision in 2018 C(2018) 2375 final

- **Review of Recommendation Announced in European Cloud Initiative (COM(2016) 178 final): A valuable and impactful instrument for policy making, but.....**
- **Technical update required to fit today's standard research practices bases on Open Science (OS), and to reflect the most recent developments in EU policies**



Commission Recommendation on access to and preservation of scientific information

A stronger instrument

The main changes

- **Research data management (incl. FAIR data)**
- **Incentives schemes and reward systems for researchers to share data and commit to other Open Science practices**
- **Skills and competences regarding scientific information**
- **Text and Data Mining (TDM) and technical standards that enable re-use**
- **Infrastructures for Open Science (incl. European Open Science Cloud)**

The expected impact

- **An even more powerful policy instrument that is fit for purpose**

The next steps

- **A new compass for Member States**

Open science Policy in FP9

The 'Lamy report' proposes a new FP that fully supports OS at all levels

Likely first pillar will be named 'Open Science' **To be seen soon!**



Embraces & incentivises open science as modus operandi for research beyond open access

- Clarifies and strengthens the open access obligations: mandatory open access to publications and data (data 'as open as possible, as closed as necessary')
- Empowers authors of scientific publications to participate in open science
- Is the home of FAIR data sharing while complying with IPR rules and exploitation obligations set in the GA
- Broadens open access (with opting out options) to other research output
- Promotes compliance with 'Open Science principles' through a combination of obligations and incentives
- Further implements sanctions for those beneficiaries significantly failing to provide open access, requiring institutions to assume responsibility for their intellectual output
- Introduces the use of 'next generation' metrics for better assessing the systemic impact of research output and the engagement in Open Science by researchers and their institutions

Open Science policies: summing up the current focus of work

- **Designing an FP9 that is permeated by open science and reflects ambitions!**
- **Launching the 1st phase of the EOSC**
- **Revision of recommendation and PSI- mainstreaming/uptake in MS**
- **Provide more options for grantees and do as we preach: the Open Research Europe publishing platform (at the roundtable)**

NB: Significant emphasis on research data, especially through EOSC and FP9 policy

Open Science Across Europe: the NPR report

"Structured coordination of MS at EU level & follow-up of the 2012 Recommendation"

→ NPR (28 MS + NO, TR, CH)

"Reporting on the follow up of this Recommendation"

→ 1st report (2015)

→ 2nd report (2018)

<https://data.europa.eu/doi/10.2777/642887>

Access to and Preservation of Scientific Information in Europe

Report on the implementation of
Commission Recommendation C(2012) 4890 final

Edited by Victoria Tsoukala, Maarja Adoojan, Jean-François Dechamp
May 2018

NPR report: Key messages on the state of OS in the EU, I/II

- **Majority of countries adopted, are implementing or currently discussing policies for open access to publications at the national level**
- **Progress on research data policy, but different stages in various countries and agents (governments, funders, institutions).**
 - Numerous countries working on open research data principles; half are making DMPs and FAIR data part of their policies.
 - Flexible rules for research data management at the national level. RDM and open access to research data is mandatory only in a few funding schemes.
- **Most countries plan or have already implemented policies or strategies for e-Infrastructures at the national level and they collaborate for interoperability at European level**
 - Most countries reported projects or initiatives at national level to develop cloud services
 - Most reported that academic institutions have repositories that comply with trusted quality standards

NPR report: Key messages on the state of OS in the EU, II/II

- **Rewards for practicing Open Science (i.e. the culture of sharing) built into the career assessment and related education and skills initiatives and strategies is being implemented mostly at the institutional level.**
- **Half of the countries monitor the development and/or growth of open access publications at national level;**
 - access to research data or the impact of open access generally not monitored
- **For most countries the transparency of negotiations for 'big deals' on journal subscriptions and the issue of VAT for digital journals is of importance.**

Areas where more work appears desirable

Copyright and enabling conditions for authors, including for TDM

Widening access to SMEs and unaffiliated researchers

Skills, rewards and incentives

Indicators for open science

Open science monitor

Tracking trends for open access, collaborative and transparent research across countries and disciplines.

Trends for open access to publications

Data and case studies covering access to scientific publications. Bibliometric data as well as data on the policies of journals and funders are available.

Facts and Figures for open research data

Figures and case studies related to accessing and reusing the data produced in the course of scientific production.

Data on open collaboration

Figures on availability of scientific APIs, open code policies, citizen science projects as well as case studies.

About

What the Open Science Monitor does, how to contribute, methodology and contact details.

New iteration of the Open Science Monitor!! May 2018

<http://ec.europa.eu/research/openscience/monitor/>

What information is available?

Open access to publications

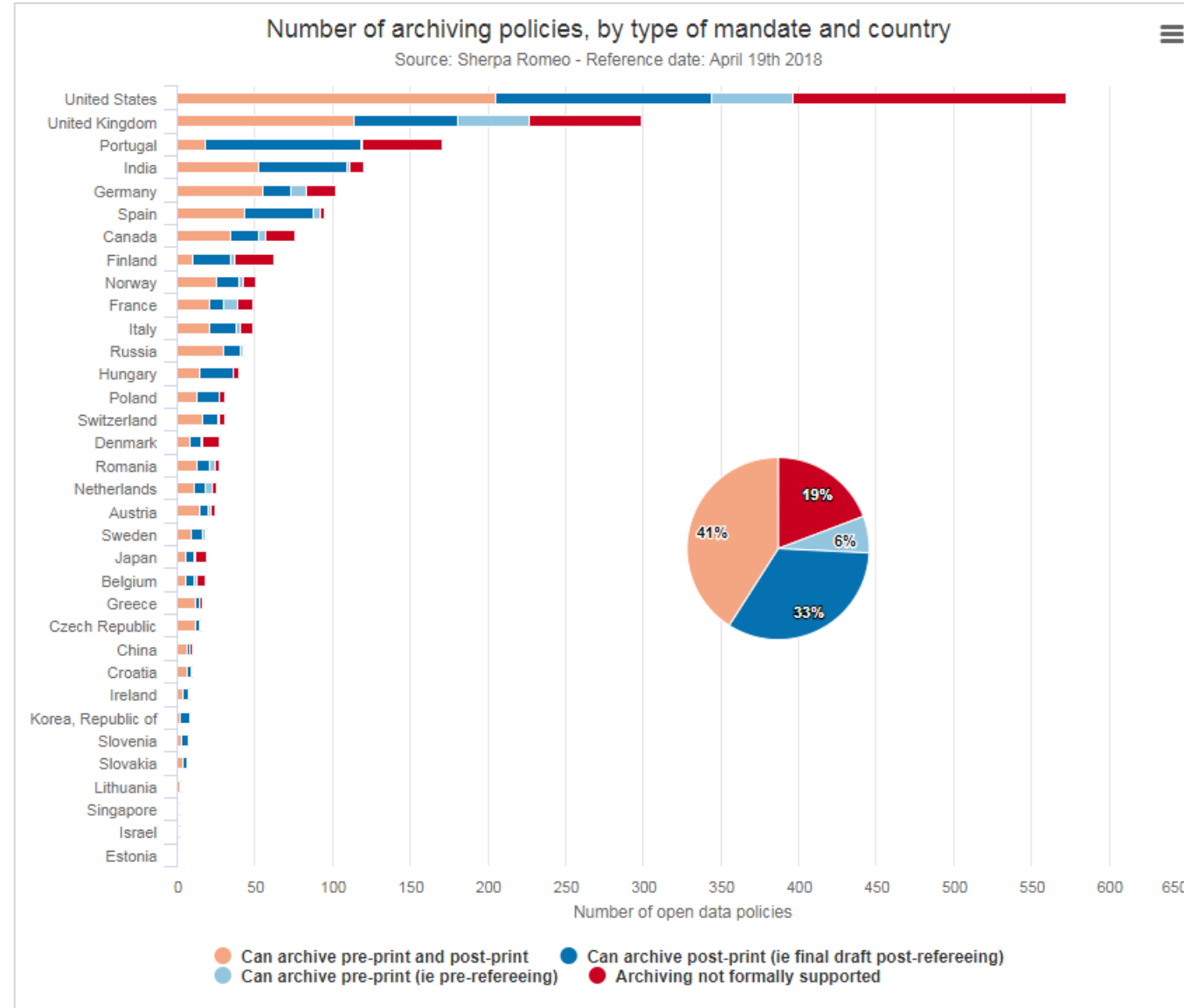
Funders' policies

Research journal policies

Additional indicators

Case studies

This indicator presents the types of mandates established by research funders journals concerning open access archiving policies, as displayed in the [Sherpa Romeo database](#) . The pie chart represents total data.





Thank you!

More information at

<http://ec.europa.eu/research/openscience>