



# Driving the paradigm shift towards Open Science

Blue Week

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# Data



**530%**

increase of global  
data volume

From 33 zettabytes  
in 2018 to 175  
zettabytes



**€829  
billion**

value of data  
economy in the  
**EU27**

From €301 billion  
(2.4% of EU GDP)  
in 2018



**10.9  
million**

data  
professionals in  
the **EU27**

From 5.7 million in  
2018



**65%**

Percentage of EU  
population with  
**basic digital skills**

From 57% in 2018

# 'Blue' global policy

- **UN - Sustainable Development Goals**
  - Climate Action, Life Below Water (Market value of marine/coastal resources and industries: **US\$ 3 trillion**)
- **UN - Decade of Ocean Science for Sustainable Development (2021-2030)**
  - A transparent ocean with **open access to data information and technologies**
- **G7 - Future of the Oceans Initiative**
  - Promote the improvement of **global data sharing infrastructure** to address the **challenges of [...] data**
- **EU - Blue Growth strategy**
  - Making these **data** more **interoperable and more available** to users can improve the productivity...
- **EU - Green Deal**
  - [...] ensure that across the EU, [stakeholders] are able to **access data** [...] to develop instruments to integrate climate change...
- **EU - Digital Twin of the Ocean**
  - AI and analytics, thematic or sectorial models and computing power will **transform data into knowledge**



# Open Science for us at the EC

- **Open Science** means **sharing knowledge and tools as early as possible**, not only **between researchers** and **between disciplines**, but also with **society at large**.
- Open Science improves the **quality**, **efficiency** and **creativity** of research and the **trust by society in science**. In particular, OS is beneficial for science, scientists and funders, e.g.:
  - tackles the reproducibility crisis;
  - faster response to societal challenges e.g. Coronavirus, Ebola;
  - access to and sharing results yields higher impact through collaborations;
  - generates new research findings and decreases inequalities;
  - large opportunity costs of non-FAIR data—**€10.2bn/year** (source: Cost-benefit analysis of FAIR research data, 2017).
- The Commission acts as **policy maker** (propose legislation and encourage MS), a **funder** (we set requirements to our projects) and a **capacity builder** (we fund ‘enabling’ projects).

# Evolution of our policies across the FPs



## Planned under **Horizon Europe (2021):**

- Open Science (OA, **RDM**, Cit. Eng., etc.) embedded throughout the FP. OS to play a role in the:
  - **Evaluation** of proposals (methodology)
  - **Grant Agreement**
  - **Reporting**—during the project's lifetime
- Strengthening of the obligations with respect to open access and focus **on responsible RDM in line with FAIR**

# EOSC in the European Data Strategy

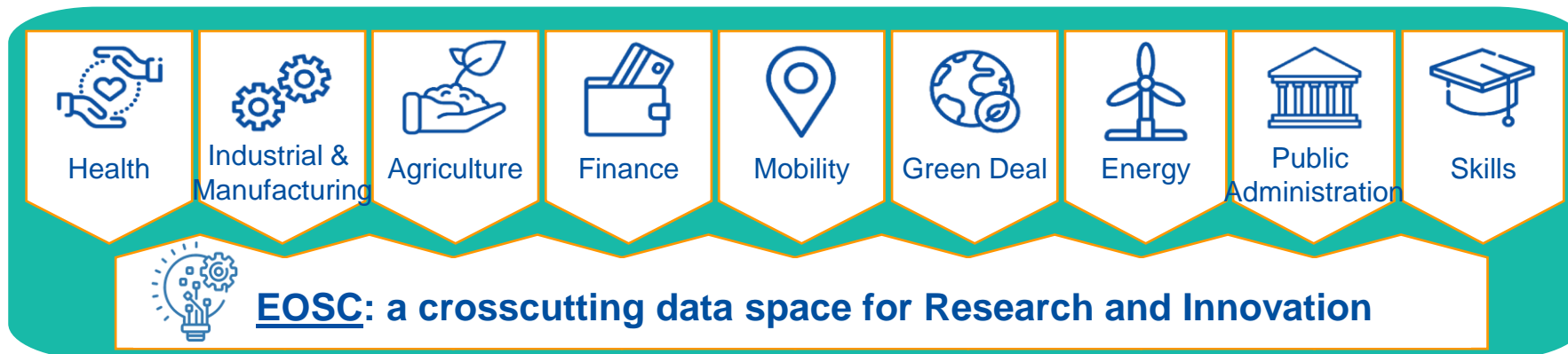
(February 2020)

**The EU will create a single market for data by:**

- ❑ Setting clear and fair rules on access and re-use of data;
- ❑ Investing in next generation standards, tools and infrastructures to store and process data;
- ❑ Joining forces in European cloud capacity;
- ❑ **Pooling European data in key sectors, with EU-wide common and interoperable data spaces;**
- ❑ Giving users rights, tools and skills to stay in full control of their data.

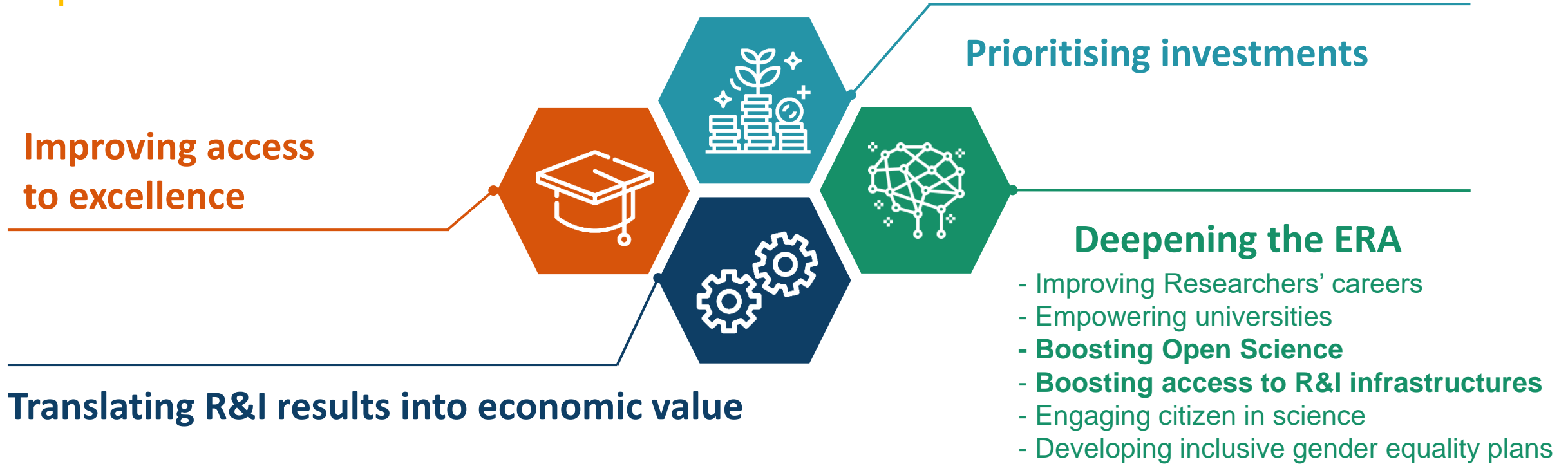


*“**EOSC** is the basis for a science, research and innovation data space that will bring together data resulting from research and deployment programmes and will be connected and fully articulated with the sectoral data spaces.”*  
(European Data Strategy, COM(2020) 66 final)



# EOSC in the new European Research Area

(September 2020)



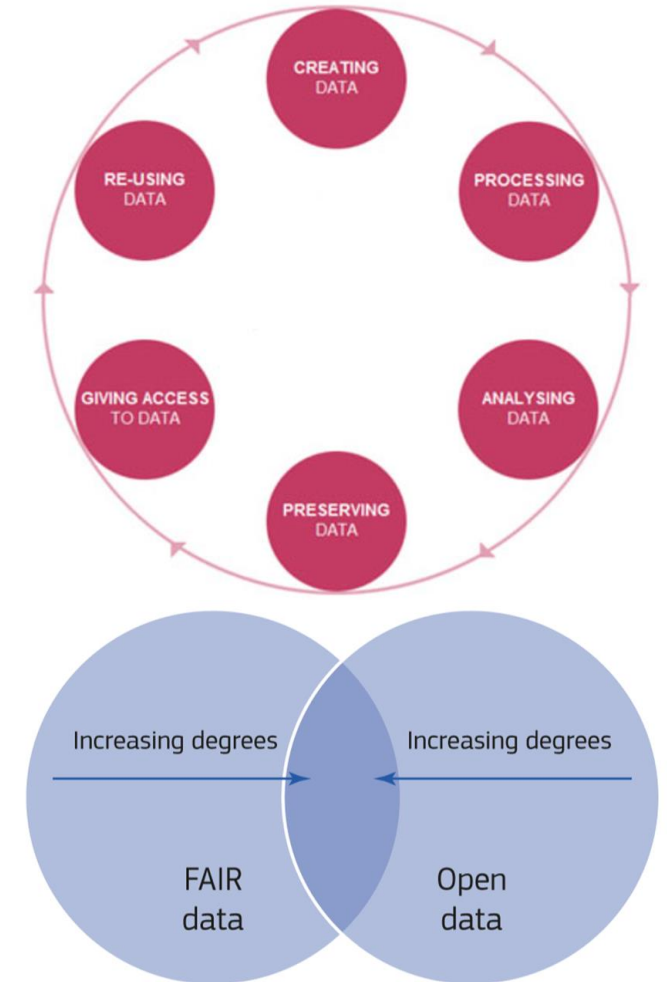
## Key action 9 of the ERA roadmap:

- Launch, via the Horizon Europe Programme, a platform of peer-reviewed open access publishing; analyse authors' rights to enable sharing of publicly funded peer-reviewed articles without restriction;
- **Ensure a European Open Science Cloud that is offering findable, accessible, interoperable and reusable research data and services [Web of FAIR data and services for science];**
- Incentivise open science practices by improving the research assessment system.

# European Open Science Cloud



- The European Open Science Cloud (EOSC) ([European Cloud Initiative Communication, 2016](#)) will federate existing and emerging infrastructures to offer a **trusted** and **open distributed** system for the scientific community, providing **seamless access to data** and **interoperable services** addressing the **whole research data lifecycle**
- EOSC will enhance the possibilities for researchers to find and share publications, data and software leading to **new insights** and **innovations**, higher researcher **productivity** and **solutions** for society
- EOSC engages all relevant stakeholders to co-design and deploy a Web of FAIR data and related services for Science





# EOSC past and future



- **2019-2020** Governance: Executive Board (representatives of EOSC stakeholders) and a Governance Board (where MS/AC were represented).
  - Six EB Working Groups: **FAIR, Architecture, Landscape, Rules of Participation, Sustainability, Training and Skills** delivered an impressive corpus of information: 19 Published Reports.
- **Strategic Research and Innovation Agenda**
- **Co-Programmed Partnership.** Tripartite governance with **27 MS & 16 AC.**
- **EOSC Association** founded on 29 July 2020:
  - 137 Candidate Member Organisations
  - 48 Candidate Observers
  - 18 Mandated Organisations



*Strategic Research and  
innovation Agenda for EOSC*

# Translating the SRIA to thematic disciplines

- EOOSC development will be **modular** and will require interoperable **domain-specific services** and **use-case pilots** to demonstrate their value
- Different communities will **contribute towards SRIA priorities** from within their communities
- Two good examples of **mature communities**:



 **COVID-19** Data Portal



# Take-away messages



- The European Commission is committed to driving the Open Science agenda forward.
- As a **funder**, we will impose **requirements** on all Horizon Europe projects with respect to publications, data, and other research outputs, and mainstream Open Science practices.
- As a **policy maker**, we will ensure that Open Science remains a **visible priority**, and we will enter into a European Partnership with the EOSC Association, and with the involvement of Member States.
- As a **capacity builder**, we will devote **~€0.5bn** to fund projects to address the priority actions indicated in the SRIA, contributing to the **realisation of the EOSC vision** over the next seven years.

# Keep in touch



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# Thank you



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# EOSC timeline

