

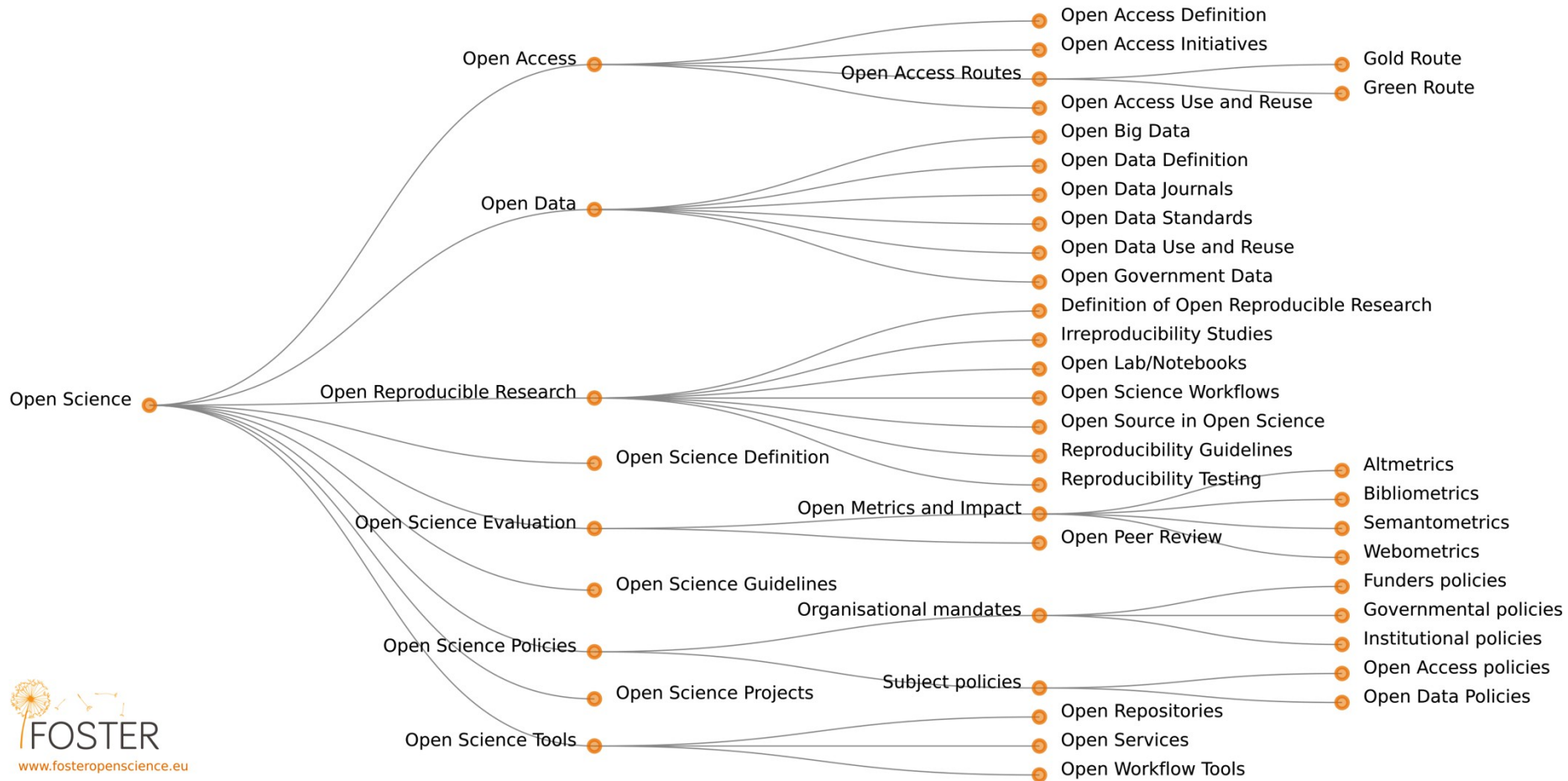
Open Science: Application and Benefits

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What is open science?



Open Science Taxonomy



Pontika, Knoth, Cancellieri & Pierce. (2015). Fostering Open Science to Research Using a Taxonomy and an eLearning Portal. <http://oro.open.ac.uk/44719/>

Taxonomy high resolution URL: https://figshare.com/articles/Open_Science_Taxonomy/1508606



What is open science?

The movement to make scientific research, data and dissemination accessible to all levels of an inquiring society.

[FOSTER, Open Science Definition <https://www.fosteropenscience.eu/taxonomy/term/7>]

Scope:

- **Transparency** in experimental methodology, observation, and collection of data
- **Public** availability and reusability of **scientific data**
- **Public** accessibility and transparency of **scientific communication**
- Using web-based tools to facilitate scientific **collaboration**

[The OpenScience Project, What exactly is open science <http://www.openscience.org/blog/?p=269>]

Open Science is here to stay

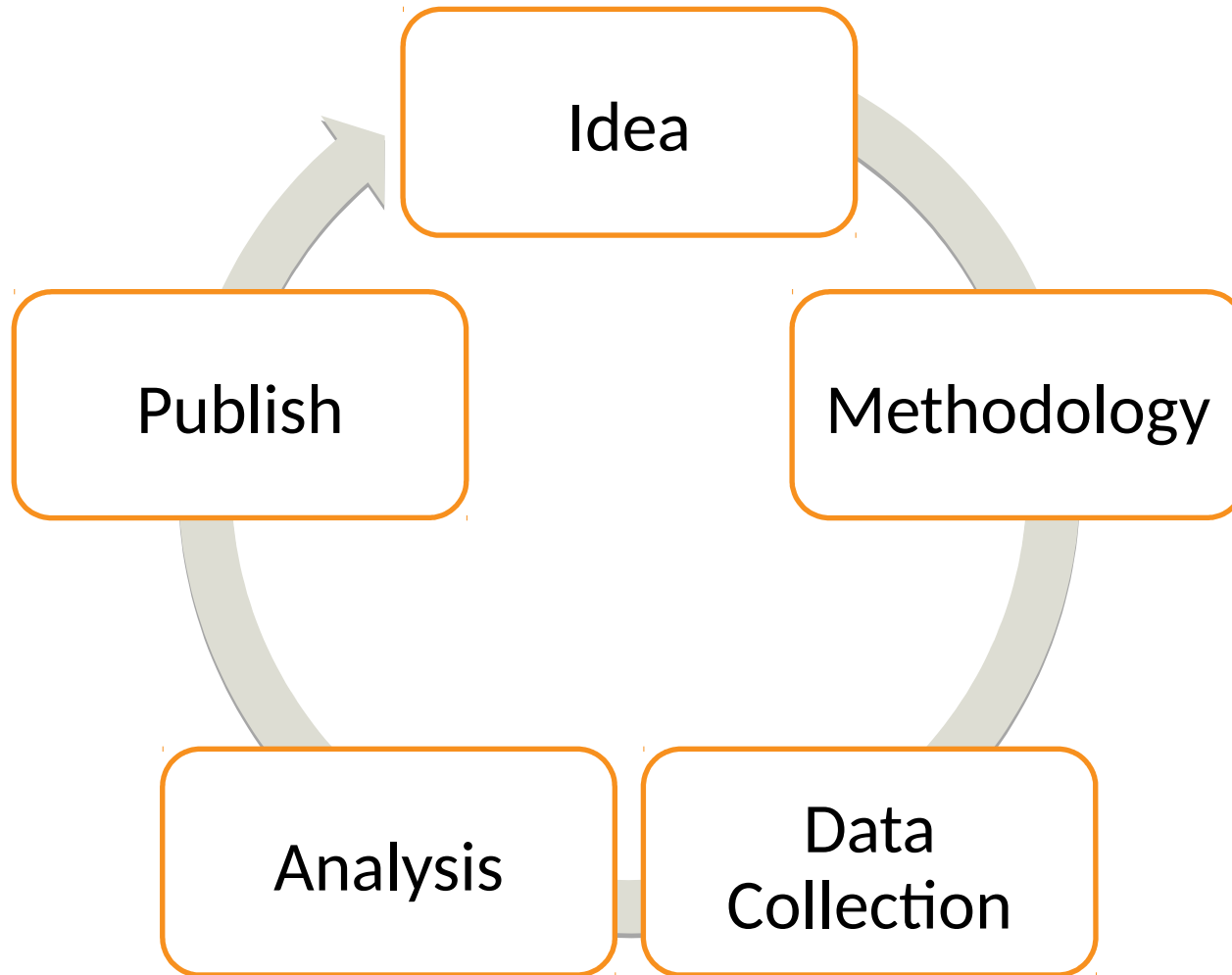
In June 2015, the Commissioner for Research, Science and Innovation Carlos Moedas defined three strategic priorities: **Open Innovation, Open Science and Openness to the World.**

Open Science describes the **on-going transitions** in the way research is performed, researchers **collaborate**, knowledge is **shared**, and science is **organised**. It is enabled by digital technologies, and driven by:

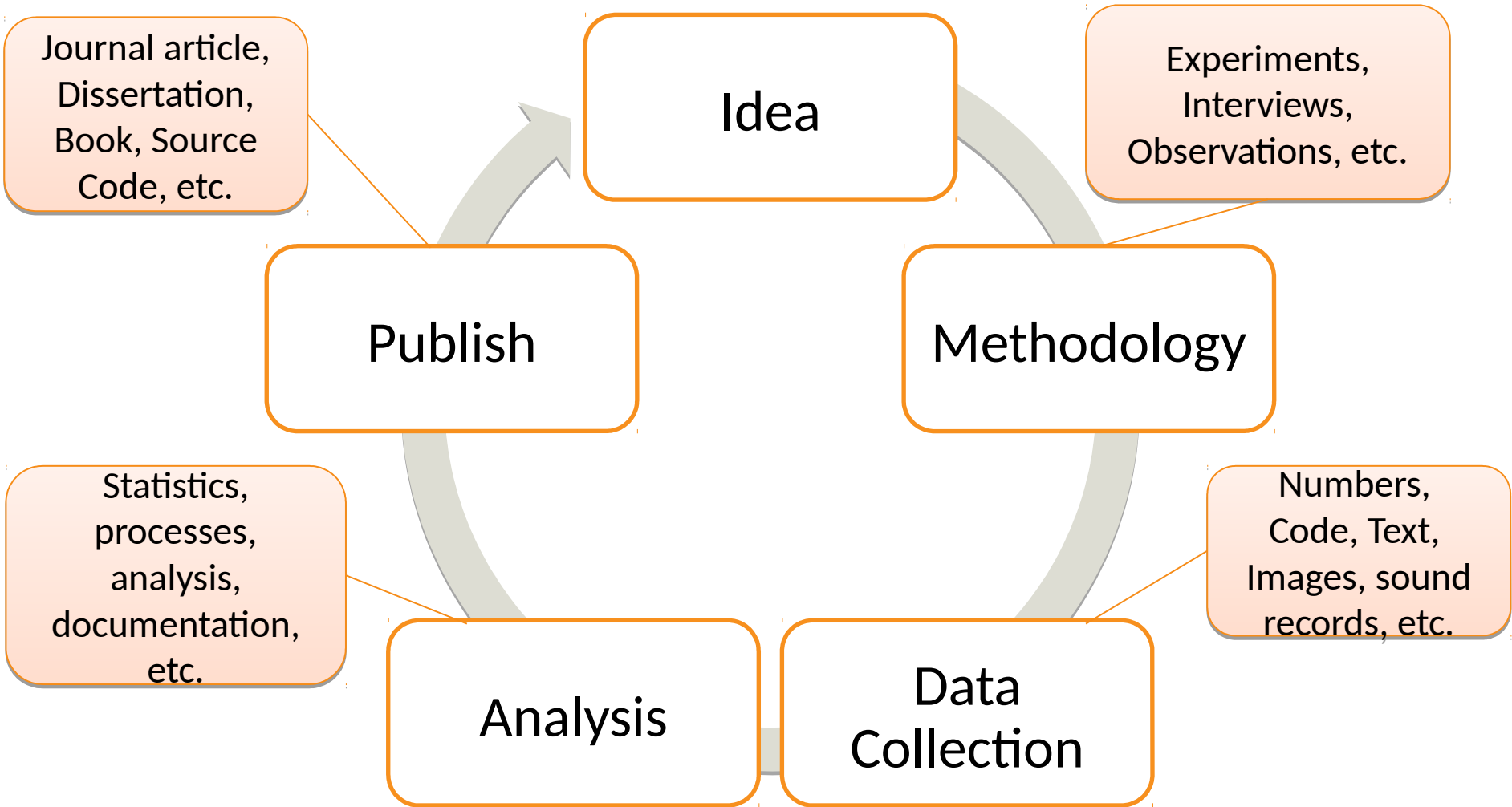
- the enormous growth of data,
- the globalisation and enlargement of the scientific community to new actors (e.g. citizen science), and
- the need to address societal challenges.

[European Union, Research & Innovation: Open Science <https://ec.europa.eu/research/openscience/index.cfm>]

Research Lifecycle



Research Lifecycle



Where are we now in terms of openness?



Open Access (OA) :

“Open-access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions. What makes it possible is the internet and the consent of the author or copyright-holder.”

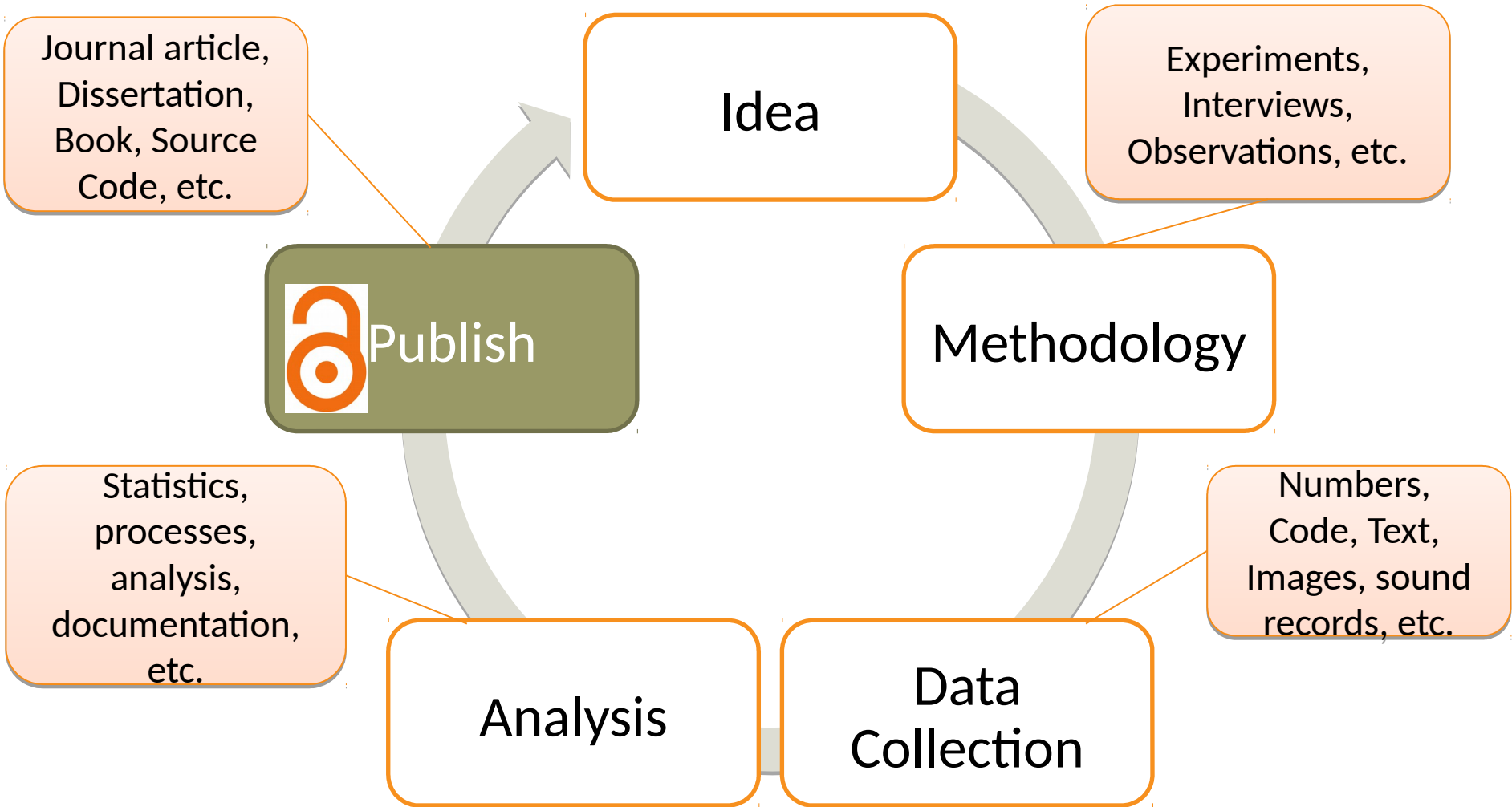
[Suber, 2004. <http://legacy.earlham.edu/~peters/fos/overview.htm>]

Routes to OA:

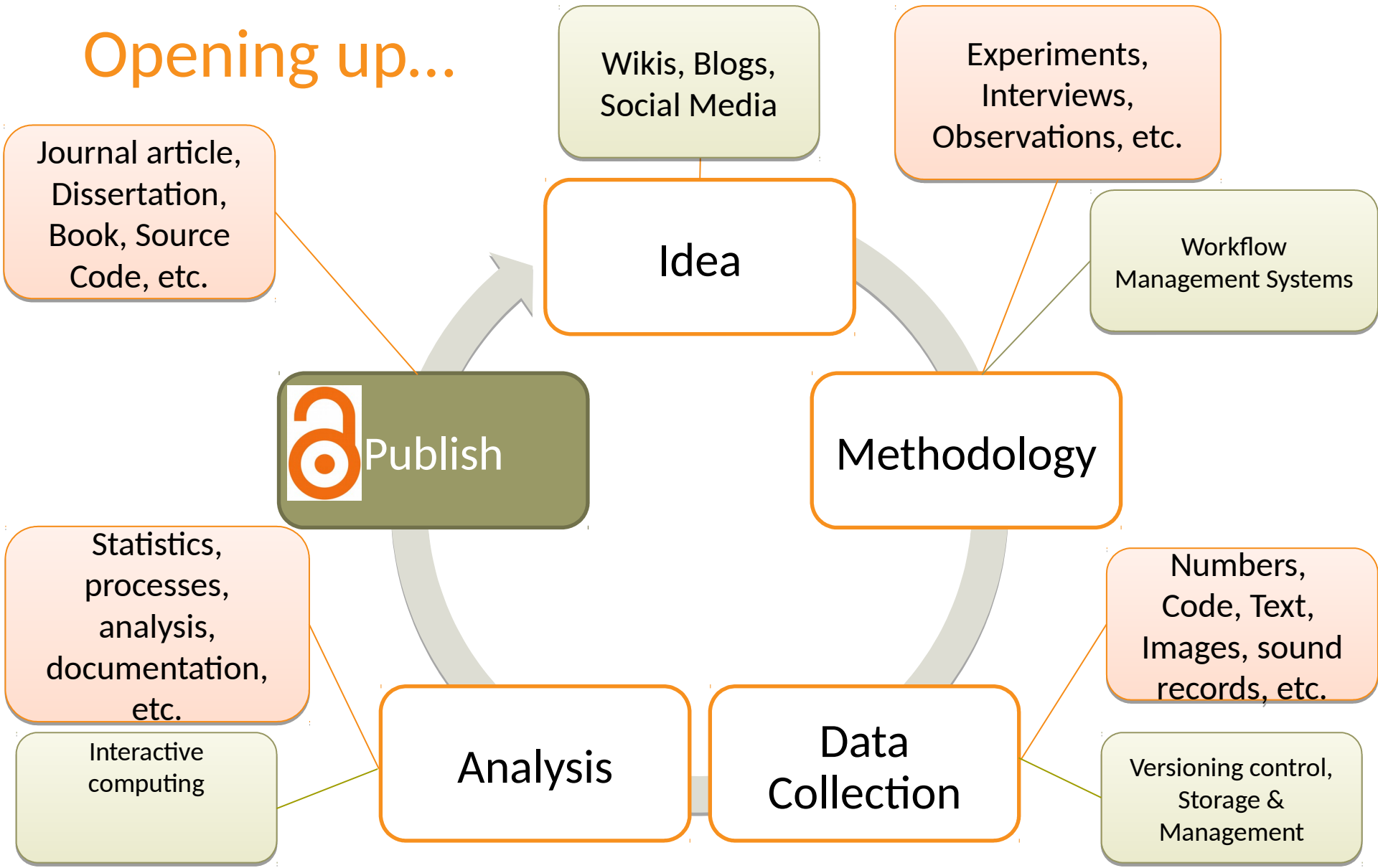
- Open Access Journals/Hybrid Journals
- Open Repositories: institutional & subject

[Suber, 2004. <http://legacy.earlham.edu/~peters/fos/brief.htm>]

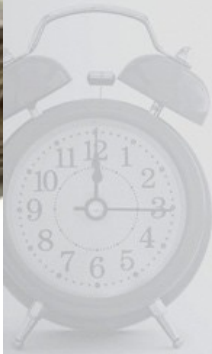
Open Access and the Research Lifecycle



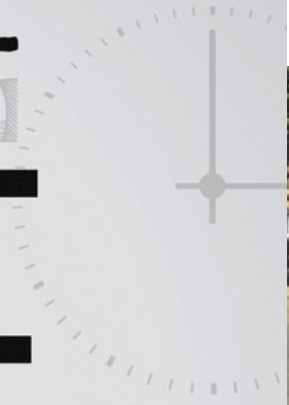
Opening up...



What's the benefit for me?



WHY
DO I
WASTE
ALL MY
PRECIOUS
TIME



Open Science requirement



EUROPEAN COMMISSION
Directorate-General for Research & Innovation

Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020

Version 2.1
15 February 2016

Research results:

“each beneficiary must ensure open access to all peer-reviewed scientific publications”
(page 4)

Research data:

“A new feature of Horizon 2020 is the Open Research Data Pilot (ORD Pilot), designed to improve and maximise access to and reuse of research data generated by projects... The Pilot on Open Research Data will be monitored throughout Horizon 2020 with a view to further developing Commission policy on open research.”

(page 7)

A taste of UK funders' open access policies

HEFCE/REF

“The policy states that, to be eligible for submission to the post-2014 REF, authors’ outputs must have been deposited in an institutional or subject repository. Deposited material should be discoverable, and free to read and download, for anyone with an internet connection.”

[<http://www.hefce.ac.uk/pubs/year/2014/201407/>]

RCUK

“The Research Councils work to ensure that the public investment in research secures the maximum economic and societal return. One of the ways of achieving this is through Open Access. The RCUK Policy on Open Access aims to achieve immediate, unrestricted, on-line access to peer-reviewed and published research papers, free of any access charge.”

[<http://www.rcuk.ac.uk/RCUK-prod/assets/documents/documents/RCUKOpenAccessPolicy.pdf>]

UK funders' Data Policies

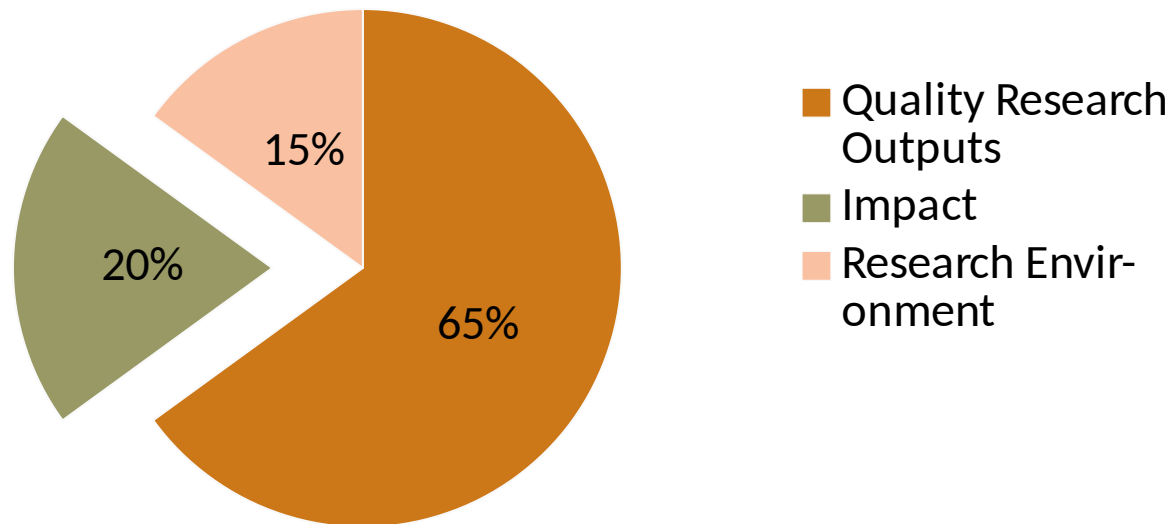
Research Funders	Policy Coverage		Policy Stipulations					Support Provided			
	Published outputs	Data	Time limits	Data plan	Access/sharing	Long-term curation	Monitoring	Guidance	Repository	Data centre	Costs
AHRC	●	●	●	●	●	◐	○	●	○	◐	◐
BBSRC	●	●	●	●	●	●	●	●	●	◐	●
CRUK	●	●	●	●	●	●	●	◐	●	○	○
EPSRC	●	●	●	◐	●	●	●	◐	○	○	●
ESRC	●	●	●	●	●	●	●	●	●	●	◐
MRC	●	●	●	●	●	●	○	◐	●	○	◐
NERC	●	●	●	●	●	●	●	●	●	●	◐
STFC	●	●	●	●	●	●	●	◐	●	◐	◐
Wellcome Trust	●	●	●	●	●	●	●	●	●	◐	●

Source: [<http://www.dcc.ac.uk/resources/policy-and-legal/overview-funders-data-policies>]

Research and Social Impact

Research Excellence Framework (REF)

Excellence - Impact - Implementation



Open Science benefits for early career researchers

You will:

- Be pioneers
- Have gained valuable experience
- Distinguish from the crowd
- Plan successful research proposals
- Receive higher citations
- Know how to comply with funders' policies
- Comply with funders' policies
- Demonstrate research and societal impact

[Note: see also benefits of open access for early career researchers

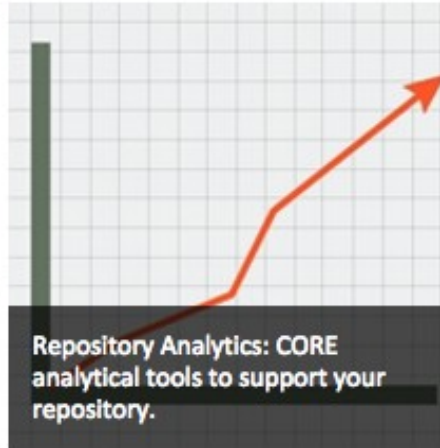
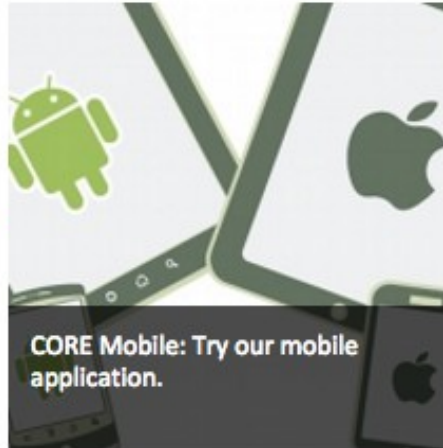
<http://oro.open.ac.uk/44720/>]

Benefits of Open Access to research consumers



Search 25,150,966 open access articles

Search

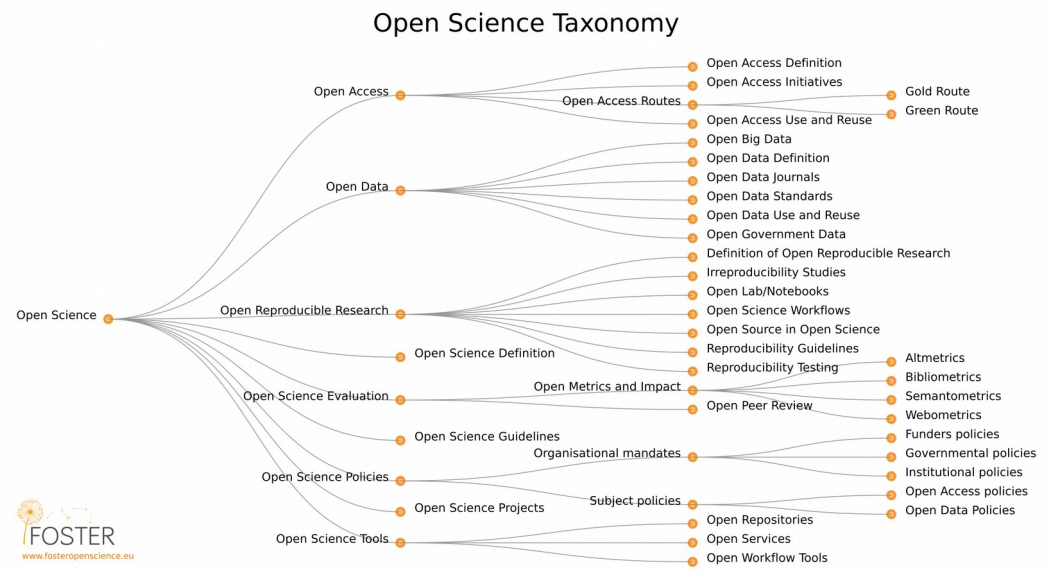
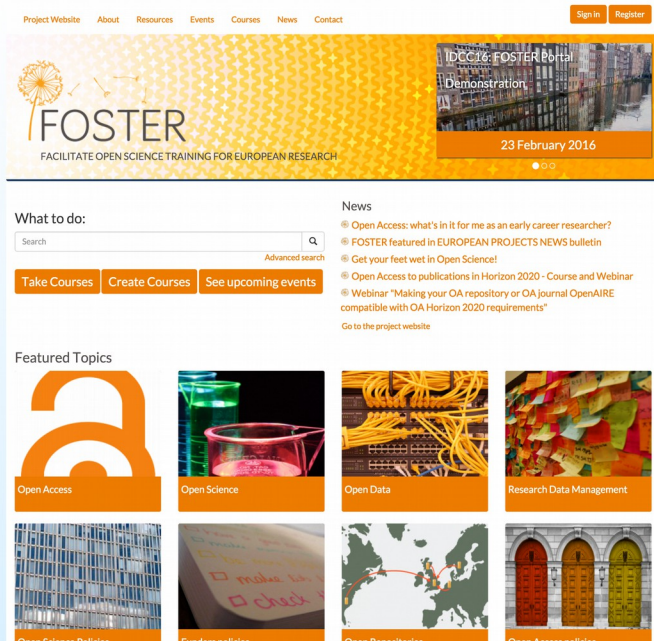


Open Science benefits

- Increase **research efficiency**
- Promote scholarly rigour and enhances **research quality**
- Enhances **visibility** and engagement
- Enables the creation of **new research questions**
- Enhances **collaboration** and community building

[Open To All? Case studies of openness in Research http://www.rin.ac.uk/system/files/attachments/NESTA-RIN_Open_Science_V01_0.pdf]

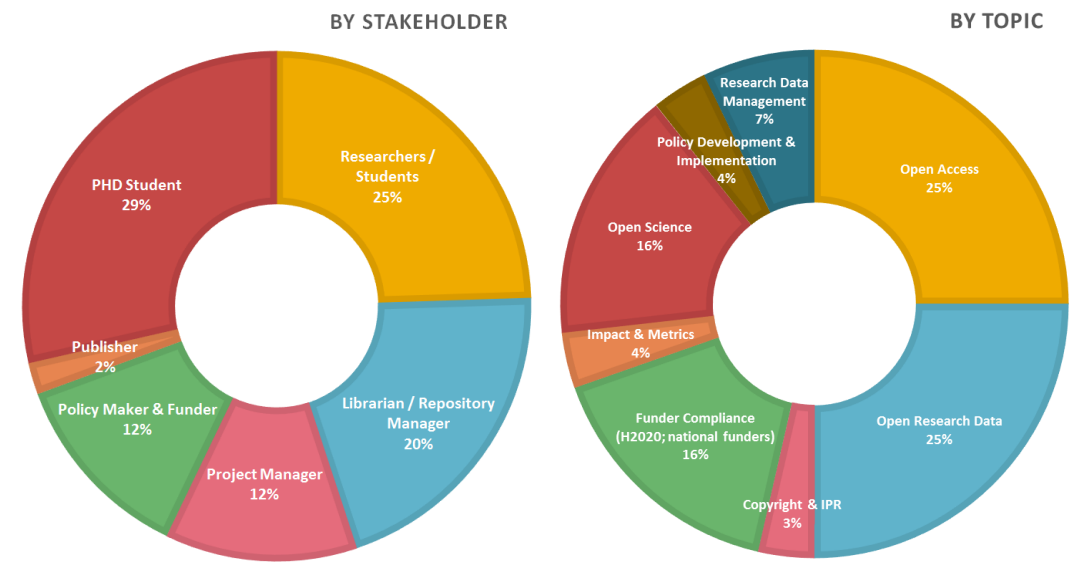
Want to learn more?



FOSTER events

89 events from 23 European countries

3678 participants in 45 events



FOSTER Open Science course

Introduction to Open Science

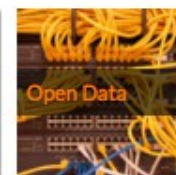
The following course is a general introduction to the various components and philosophies of Open Science, that can directly enrich each step of the scholarly lifecycle (Open Notebook Science, OpenData, Open Research Software, Open Access). The overall objective of the course is to provide an introduction to why Open Science is essential to rigorous, reproducible and transparent research, as well as to future research evaluation criteria focused on societal impact.

Open Science is the practice of science in such a way that others can collaborate

Full details

Level of knowledge: Introductory: no previous knowledge is required

Topics



Thank you!

Questions?

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