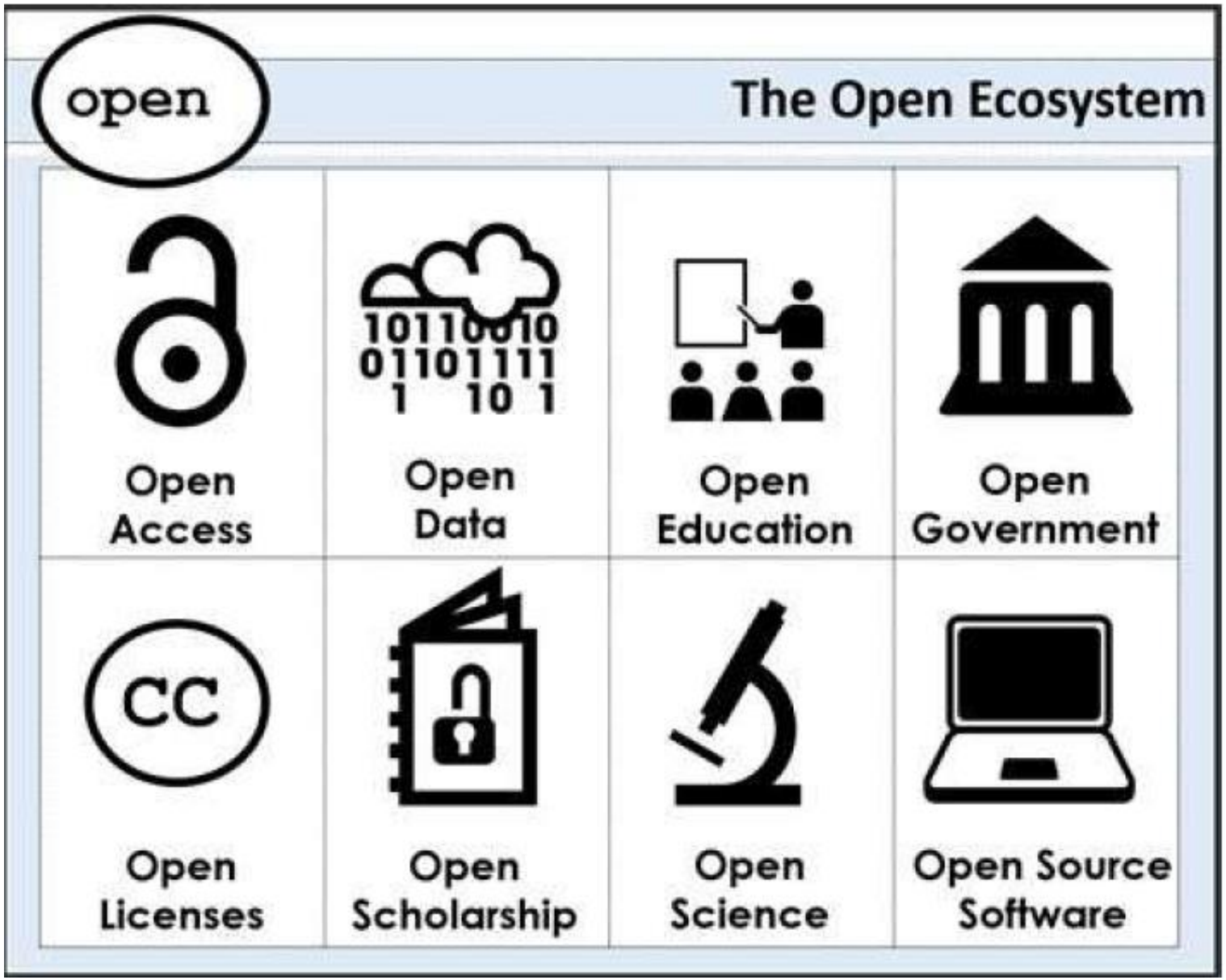
Open Science 2.0

- Košice, 25.4.2019

Open science is the movement to make

- scientific research
- data and
- dissemination

accessible to all levels of an inquiring society, amateur or professional.



Inge Van Nieuwerburgh

Open

means

anyone can freely

access, use, modify, and share

for any purpose (subject, at most, to requirements that preserve provenance and openness).

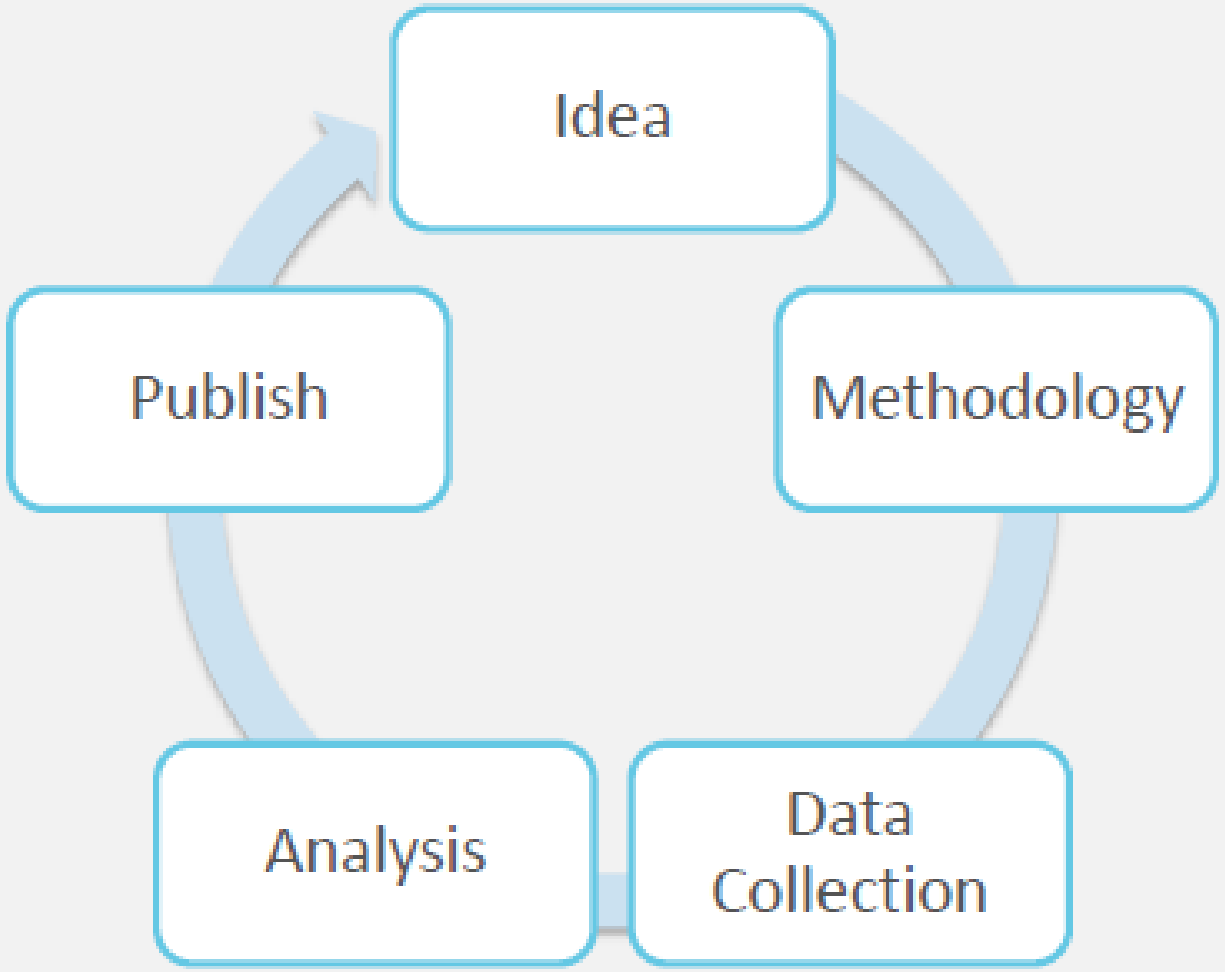
Open Science

- A systemic change to the way **science** is organised and **research** is carried out
- Affecting the **whole** research cycle and its stakeholders
- Based on cooperative work and new ways of **diffusing** and **sharing** knowledge using digital technologies and new collaborative tools
- It **affects virtually all components of doing science and research**, from conceptual work to publishing, from empirical research to data-analysis.
- Shifting focus from "publishing as fast as possible" to "**sharing knowledge as early as possible**"

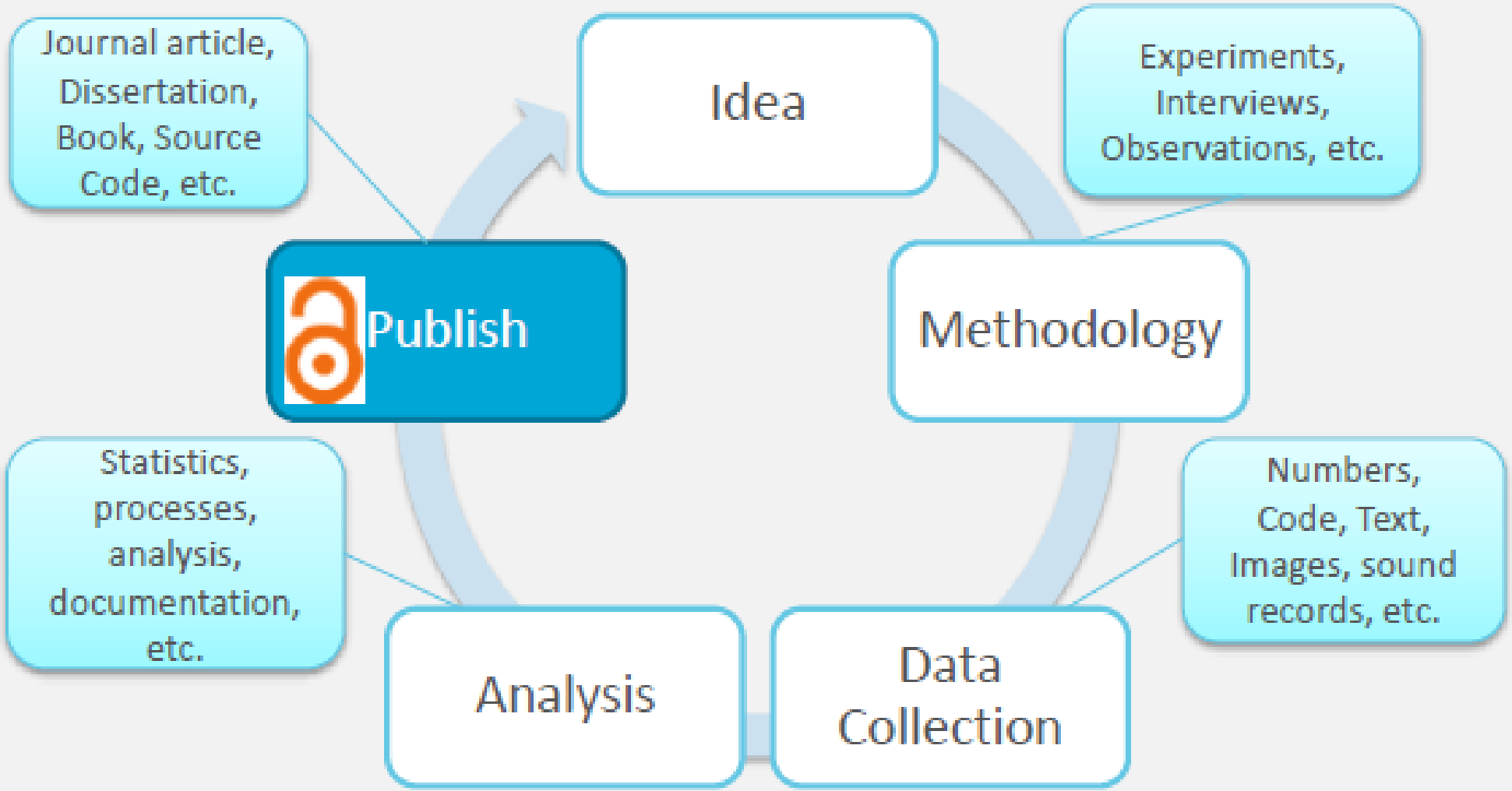
Open Policy
Open Financing
Open Government
Open Education
...

Jean-Claude BURGELMAN, R. Von Schomberg

Research Lifecycle: as simple as it gets



Research Lifecycle: focus on the publication



Nancy Pontika

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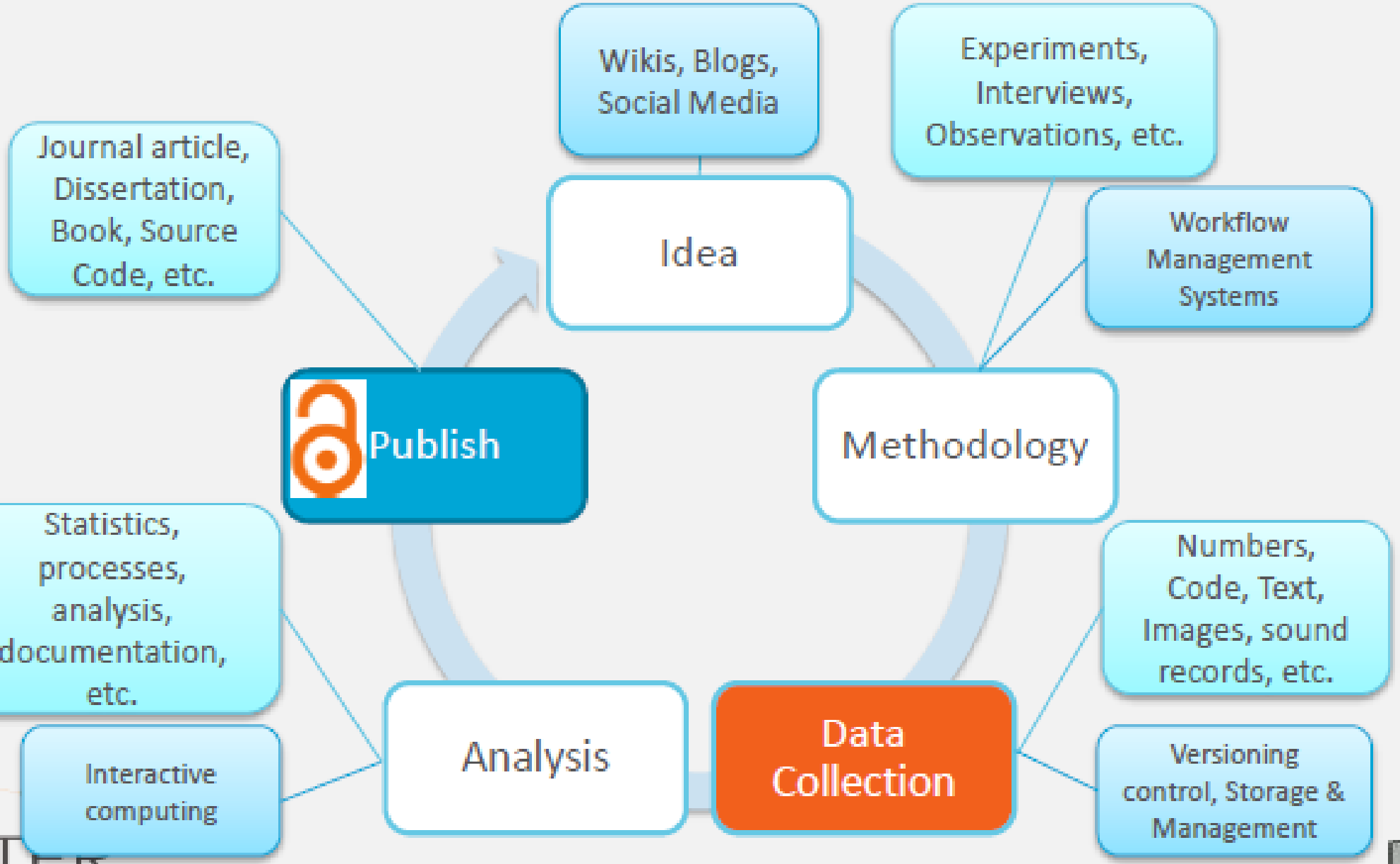
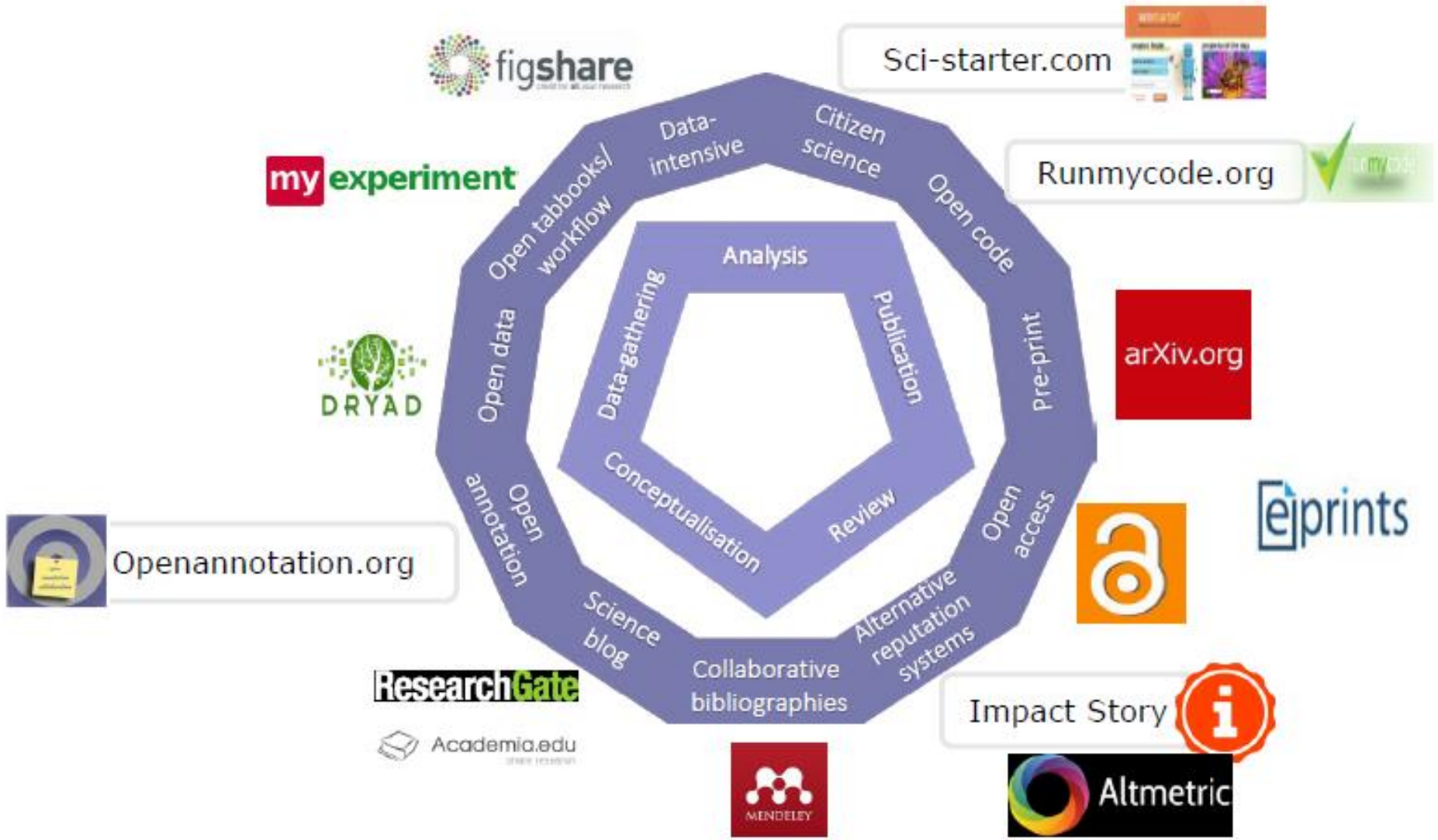
Opening up the research life cycle



Open Science – It's real!



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Commission

It's irreversible

- Digital technologies
- Exponential growth of data
- More researchers and research institutions
- Increase in the scientific production
- Grand Challenges
- Expectations and involvement of citizens
- Accountability, responsiveness and transparency
- Digital "natives"

It's not happening in isolation

- Open source software
- MOOCs (Massive Open Online Courses)
- Collaborative knowledge production
- Creative commons
- Open innovation
- The sharing/collaborative economy
- Web 2.0

Creative Commons (CC) license is one of several public copyright licenses that enable the free distribution of an otherwise copyrighted "work". A CC license is used when an author wants to give other people the right to share, use, and build upon a work that he or she (that author) has created

Great opportunities for researchers

- ✓ Wider dissemination and sharing of the results
- ✓ Involvement in more interdisciplinary research
- ✓ More visibility and credit for those collecting and sharing underlying research data
- ✓ Involvement in international networks full of potential
- ✓ New career paths e.g. data scientists, start-ups, science diplomacy

What are the key drivers?

Over 80% agree/totally agree

- Digital technologies
- New ways of disseminating results
- New ways of collaboration

Less than 50% agree/totally agree

- Citizens acting as scientists

What are the key barriers?

Over 80% agree/totally agree

- Quality assurance
- Lack of credits
- Lack of infrastructures
- Limited awareness of benefits

Less than 70% agree/totally agree

- Concerns about ethical and privacy issues

Open Science: key areas

1. Reward systems
2. Measuring quality and impact: altmetrics
3. Changing business models for publishing
4. FAIR open data
5. Open Science Cloud
6. Research integrity
7. Citizen Science
8. Open education and skills

A roadmap and stages for the implementation of Open Science:

1. Mapping key stakeholders and organising venues for discussion
2. Planning and developing an Open Science strategy through close consultation with stakeholders
3. Incentivising/stimulating Open Science practices by changing systems of evaluation and reward
4. Promoting critical thinking around the implementation of Open Research Data
5. Supporting and participating in international initiatives to develop and maintain Open Science infrastructures
6. Implementing a strategy based on clear goals, starting from Open Access
7. Monitoring and documenting the transition.

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Citizen science

A form of research collaboration in which citizens, often with a particular interest and/or stake in the outcome of the research, contribute to research. For example, there are currently close to 900 000 people engaging in the 'Zooniverse' citizen science projects.

Discover, teach, and learn

The Zooniverse enables everyone to take part in real cutting edge research in many fields across the sciences, humanities, and more. The Zooniverse creates opportunities for you to unlock answers and contribute to real discoveries.

Projects

Active | Paused | Finished

ALL DISCIPLINES | ARTS | BIOLOGY | CLIMATE | HISTORY | LANGUAGE | LITERATURE | MEDICINE | NAT

Most Recently Launched

Showing 1-20 of 92 projects found.

Name:

1 2 3 4 5

SNAPSHOT MADIKWE

SNAPSHOT ENONKISHU

SNAPSHOT DEBSHAN

WORLDS OF WONDER

MUON HUNTERS 2.0

Academia.edu

Academia.edu is a USA based-platform for academics to share research papers. The company's mission is **to accelerate the world's research.** 8 897 412 academics have signed up to Academia.edu, adding 2 594 654 papers and 1 059 921 research interests. Academia.edu attracts over 15,7 million unique visitors a month.

Research Gate

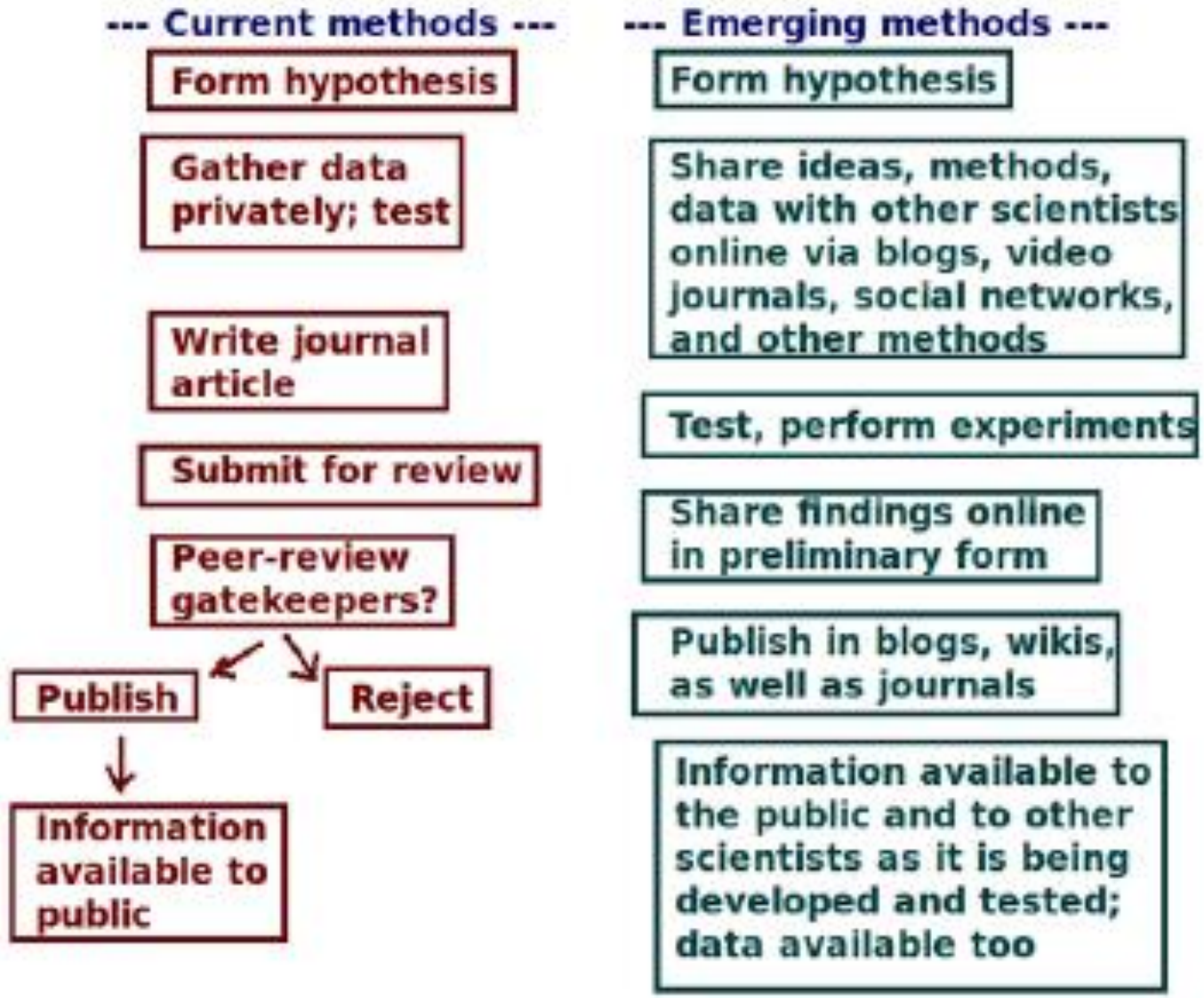
Berlin-based, virtually identical functions as Academia.edu, however it **generates a Research Impact Factor for the uploaded documents of researchers**. 4 million users, founded in 2008. 67 million Publications available, 193 countries.

Mendeley

Mendeley is a **reference manager**. 'Facebook for Scientists" features. About 3 million users and recently bought by Elsevier: Amsterdam based.

Figshare

Figshare is an **online digital repository** where researchers can make their research outputs available in a citable, shareable and discoverable manner, including figures, datasets, images, and videos. Figshare was launched in January 2011, during its first year of operation 200,000 files were made publicly available. In September 2013 about 1 million research objects were available.



Ben Shneiderman

What do we mean by ‘Open’?

- Retain:
  - the right to make, own, and control copies of the content
  - e.g., download, duplicate, store, and manage
- Reuse
  - the right to use the content in a wide range of ways
  - e.g., in a class, in a study group, on a website, in a video
- Revise
  - the right to adapt, adjust, modify, or alter the content itself
  - e.g., translate the content into another language
- Remix
  - the right to combine the original or revised content with other open content to create something new
  - e.g., incorporate the content into a mashup
- Redistribute
  - the right to share copies of the original content, your revisions, or your remixes with others
  - e.g., give a copy of the content to a friend

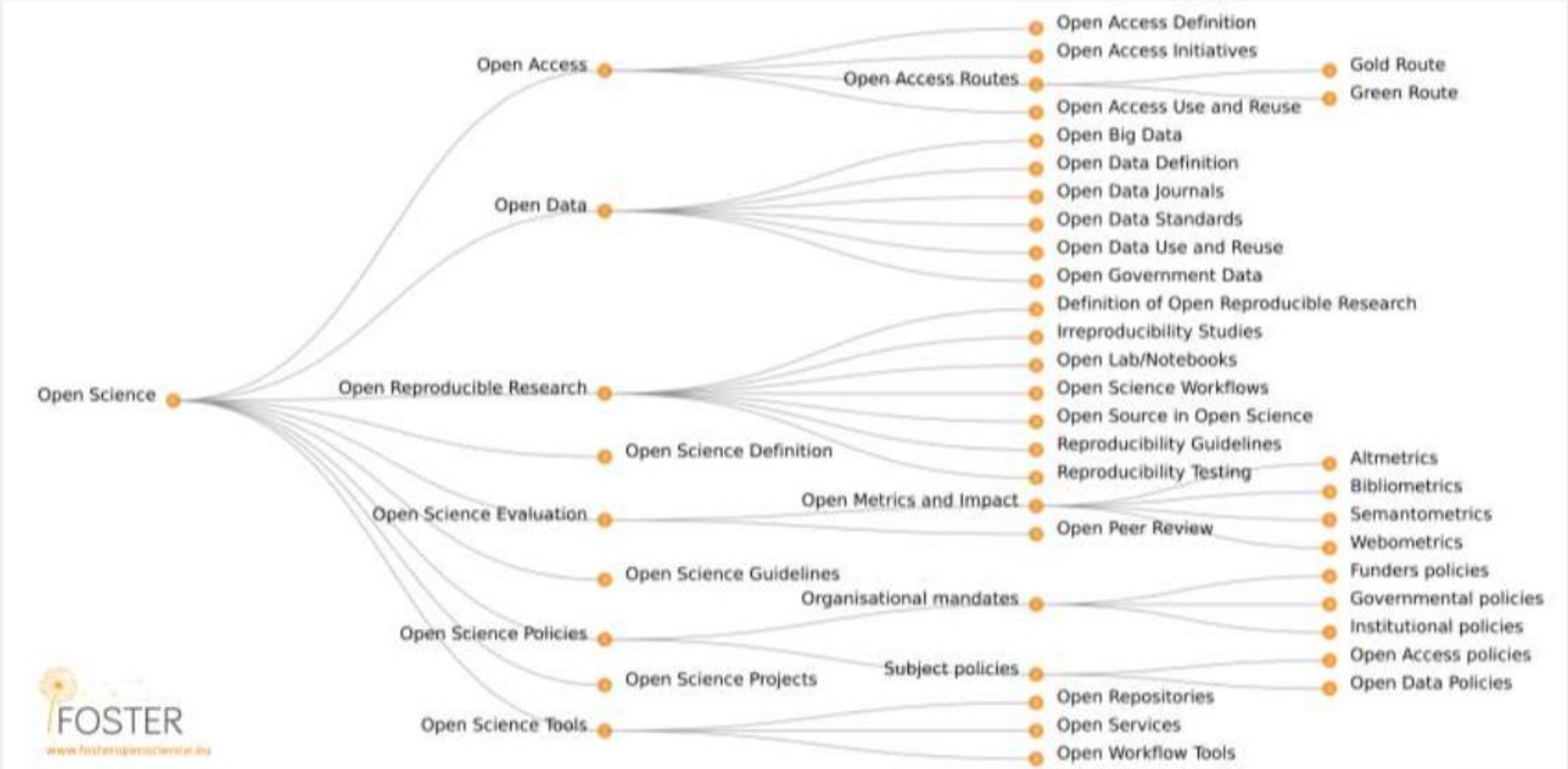
http://opencontent.org/definition/

Arranged in 31 categories in 7 phases:

research phase number	research phases (30)	research phases (7)
0	project management	preparation
1	crowdsource/define research priorities/ideas/collaborations	
2	fund / get contract	
3	search (lit/data/patents/code)	discovery
4	get access	
5	get alerts / get (reading) recommendations	
6	reference management	
7	read / view	
8	annotate/tag (during/after reading)	
9	experiment & collect/mine/extract data	analysis
10	share notebooks / protocols / workflows	
11	analyze	
12	visualize	writing
13	write (+ code)	
14	cite	
15	translate	
16	archive/share code	publication
17	archive/share data / video	
18	archive/share publications	
19	archive/share posters	
20	archive/share presentations	
21	present research findings	
22	peer review and comment/recommend (pre-pub)	
23	select journal to submit to	
24	publish	
25	outreach/valorization	outreach
26	researcher profiling (& social network)	
27	comment	assessment
28	peer review (post-pub)	
29	measure impact (of output, e.g. article)	
30	assessment (of researcher/research group)	

Bianca Kramer & Jeroen Bosman

Open Science taxonomy



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Nancy Pontika

Paper available at http://oro.open.ac.uk/44719/. Image available at http://oro.open.ac.uk/47806/

Areas of interest of EUA

Open Science 2.0
Research Data
Research assessment
Text and Data Mining
Quality Assessment
Ethics
Citation policy
Copyright, Data Protection
Scholarly communication
Scholarly publishing
Big Deals – Open Access
EOSC (European Open Science Cloud)
FAIR (Findability Accessibility Interoperability Reusability)
OSPP (Open Science Policy Platform)
Surveys

European Open Science Cloud

https://ec.europa.eu/research/openscience/index.cfm?pg=open-science-cloud

FAIRsFAIR (Findability Accessibility Interoperability Reusability)

https://www.fairsfair.eu/

FOSTER (e-learning platform about OS)

https://www.fosteropenscience.eu/

Creative Commons

https://creativecommons.org/

Thank you for your attention

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