Military Sciences vs. Open Sciences

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Outline of the Presentation

The aim is to discuss the principles and goals of Open Science in the university setting (in Finland).

1. What is Open Science (principles)?
2. Why is Open Science important (goals)?
3. How will the Open Science goals be achieved? Open Science policies in Finland
4. Discussion
5. Time for questions

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What is Open Science?

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Open Science Principles & Practices

The aim of the Open Science movement is to make scientific research, data, and publications accessible to the scientific community and to the society

Principles:

Open Science is about increased transparency, re-use, participation, cooperation, accountability and reproducibility for research. It aims to improve the quality and reliability of research through principles like inclusion, fairness, equity, and sharing.

Practices:

Open Science includes changes to the way science is done - including opening access to research publications, data-sharing, open notebooks, transparency in research evaluation, ensuring the reproducibility of research (where possible), transparency in research methods, open source code, software and infrastructure, citizen science and open educational resources.

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Open Science is nothing new!

- Openness is nothing new in science
    - Verification of research results entails transparency

- New technologies (i.e. digitalization) create new possibilities for openness in science

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Why is Open Science Important?

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Stronger Researcher Profile & Academic Credit

Open research is associated with increases in citations, media attention, potential collaborators, job opportunities and funding opportunities (eLife 2016)

The open access advantage considering citation, article usage and social media attention (Wang, X., Liu, C., Mao, W. *et al. 2015*)

Research articles that have been made Open Access are cited more often than those that have not (Univ. of Southampton, 2010)

Sharing data can increase the citation rate of scientific papers by as much as 69% (PLOSOne, 2007)

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Improved Reputation for Universities

Publishing PhD dissertations on a university's website can help to improve its global reputation for research excellence. (Times Higher Education, 2015)

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Traditional Publishing Models Are Expencive

- The overall expenditure on subscriptions paid to all publishers **in 26 EU countries** in 2019 was **€597 million**. (European University Association 2019)

- **The Finnish universities and research organisations pay yearly ca. 35 million euros** for electronic resources of scientific publishers. The biggest publisher, Elsevier, collects over 10 million euros and five biggest publishers gather about 80 % of total publisher costs.

- There are **other business models** like the SCOAP3 Initiative, the LingOA project, or the Open Library of Humanities.

- **Transformative agreements:** contracts negotiated between institutions (libraries, national and regional consortia) and publishers that transform the business model underlying scholarly journal publishing, moving from one based on toll access (subscription) to one in which publishers are remunerated a fair price for their open access publishing services.

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Research Funders Require Openess

Plan S

- an initiative for open-access science publishing launched in 2018 by "cOAlition S", a consortium of national research agencies and funders from twelve European countries.
- The plan requires scientists and researchers who benefit from state-funded research organisations and institutions to publish their work in open repositories or in journals that are available to all by 2021.

	Open Access publishing venues (journals or platforms)	Subscription venues (repository route)	Transition of subscription venues (transformative arrangements)
Route	Authors publish in an Open Access journal or on an Open Access platform.	Authors publish in a subscription journal and make either the final published version (Version of Record (VoR)) or the Author's Accepted Manuscript (AAM) openly available in a repository.	Authors publish Open Access in a subscription journal under a transformative arrangement.
Funding	cOAlition S funders will financially support publication fees.	cOAlition S funders will not financially support 'hybrid' Open Access publication fees in subscription venues.	cOAlition S funders can contribute financially to Open Access publishing under transformative arrangements.

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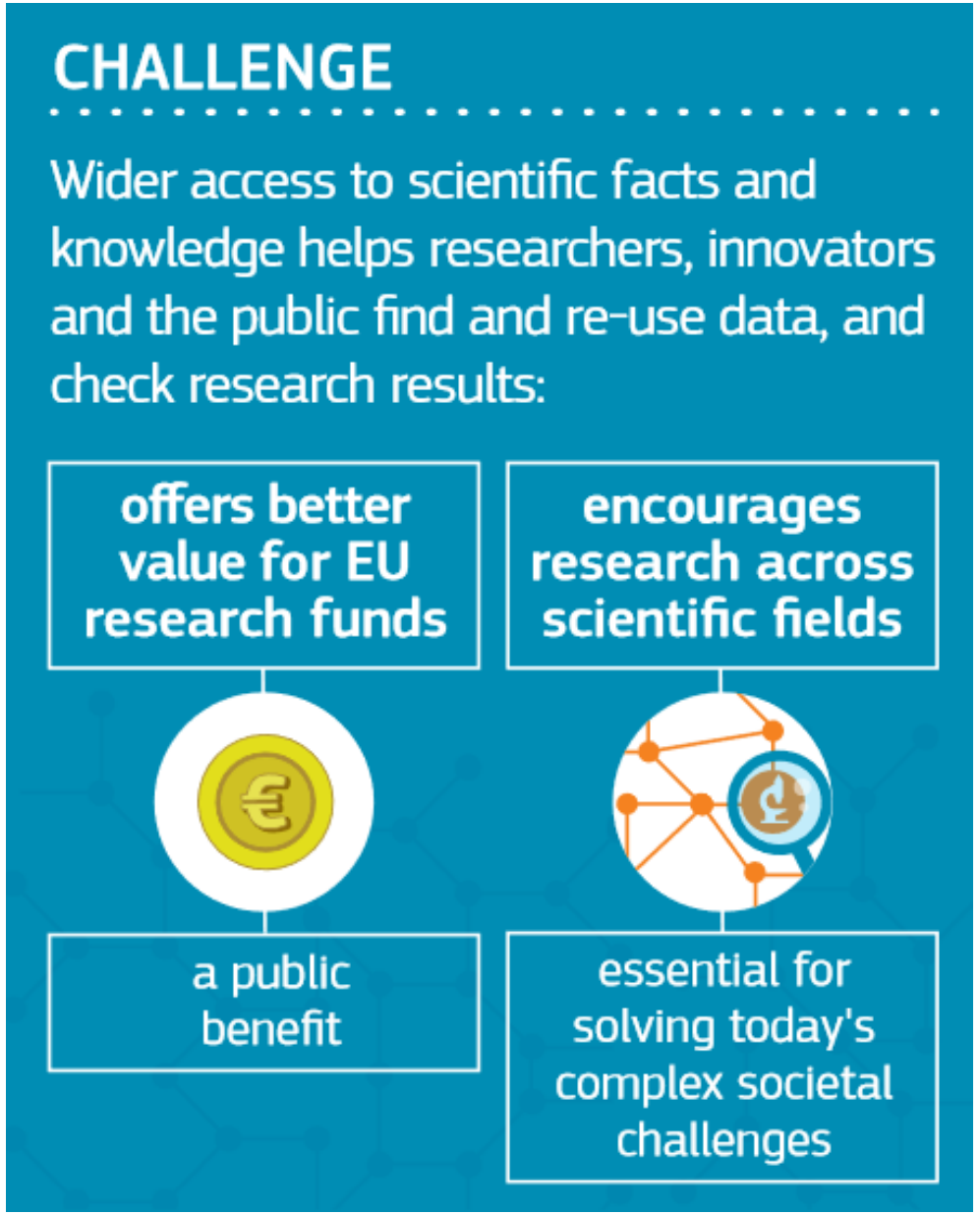
Open Science is Part of Good Scientific Practice

- Part of good scientific practice
  - Verification of research results
  - Research results for public good
  - Helps solving complex societal problems

- Unexpected results aka crazy stuff



https://ec.europa.eu/research/press/2016/pdf/opendata-infographic_072016.pdf

COVID-19

- Recognising open research data as a key component of pandemic preparedness and response (Wellcome Trust statement; the agreement by 30 leading publishers on immediate open access to COVID-19 publications and underlying data).
- The need for timely sharing of preliminary results and research data (WHO statement).
- Challenges in sharing precise data in a timely manner (RDA COVID-19 Recommendations and Guidelines on Data Sharing).

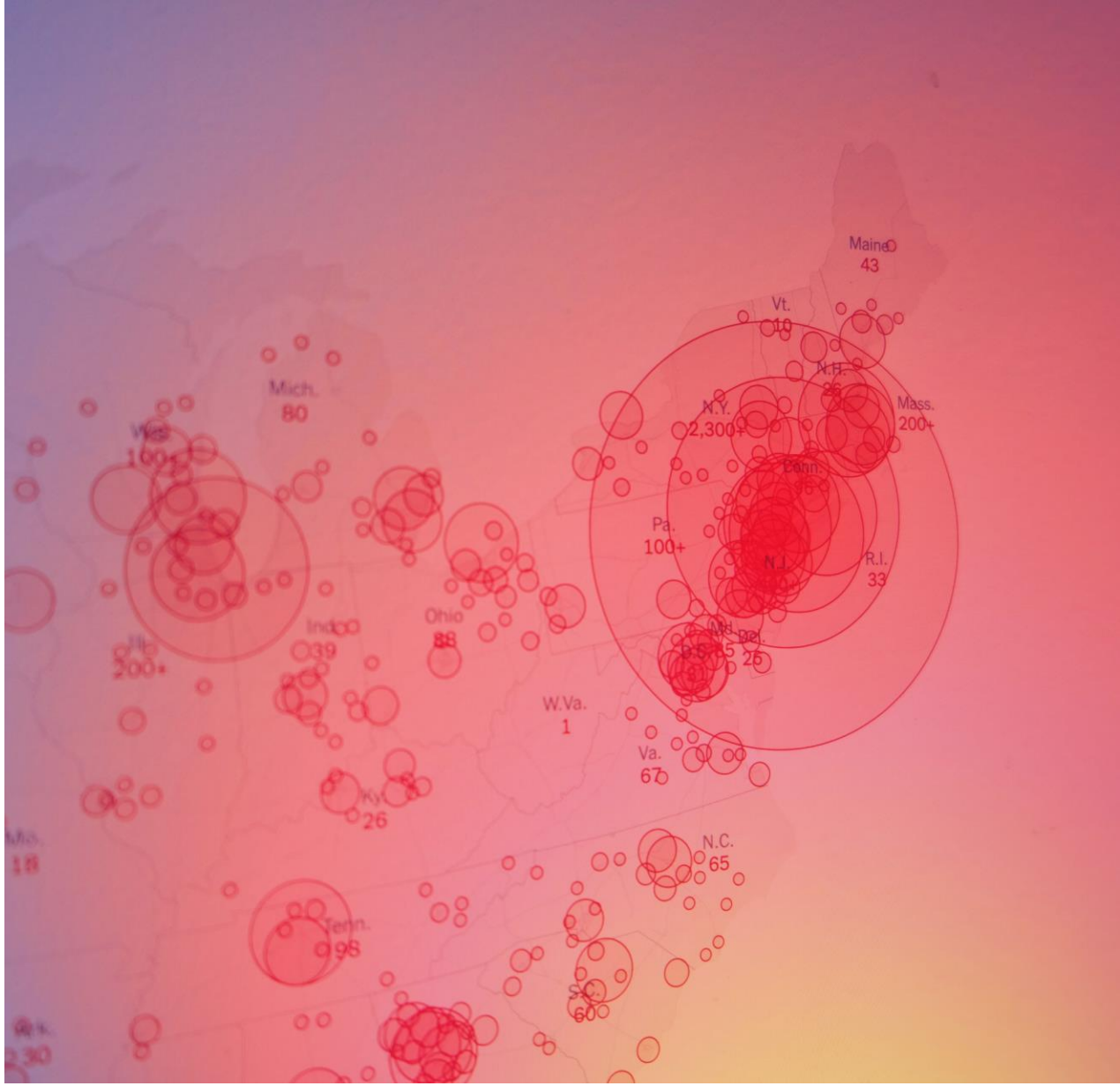


Photo by Brian McGowan on Unsplash

Climate Change

- Openness is particularly important for environmental research: the observation of climate change and similar phenomena requires sufficiently long, open time series.
- ICOS "responds to the international goal of establishing global standards for observations as well as open, accessible, and interoperable data in order to ensure optimal services for societies in their efforts to mitigate climate change." (ICOS strategy 2019)

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How is Open Science Promoted in Finland?

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Ministry of Education and Culture

Finland is one of the pioneers in the field

- Ministry of Education and Culture's Open Science and Research project in 2014–2017
- Data Management and Computing Development Program 2017-2021
- Vision for Higher Education and Research 2030
- Vision and road map of the Research and Innovation Council Finland 2030

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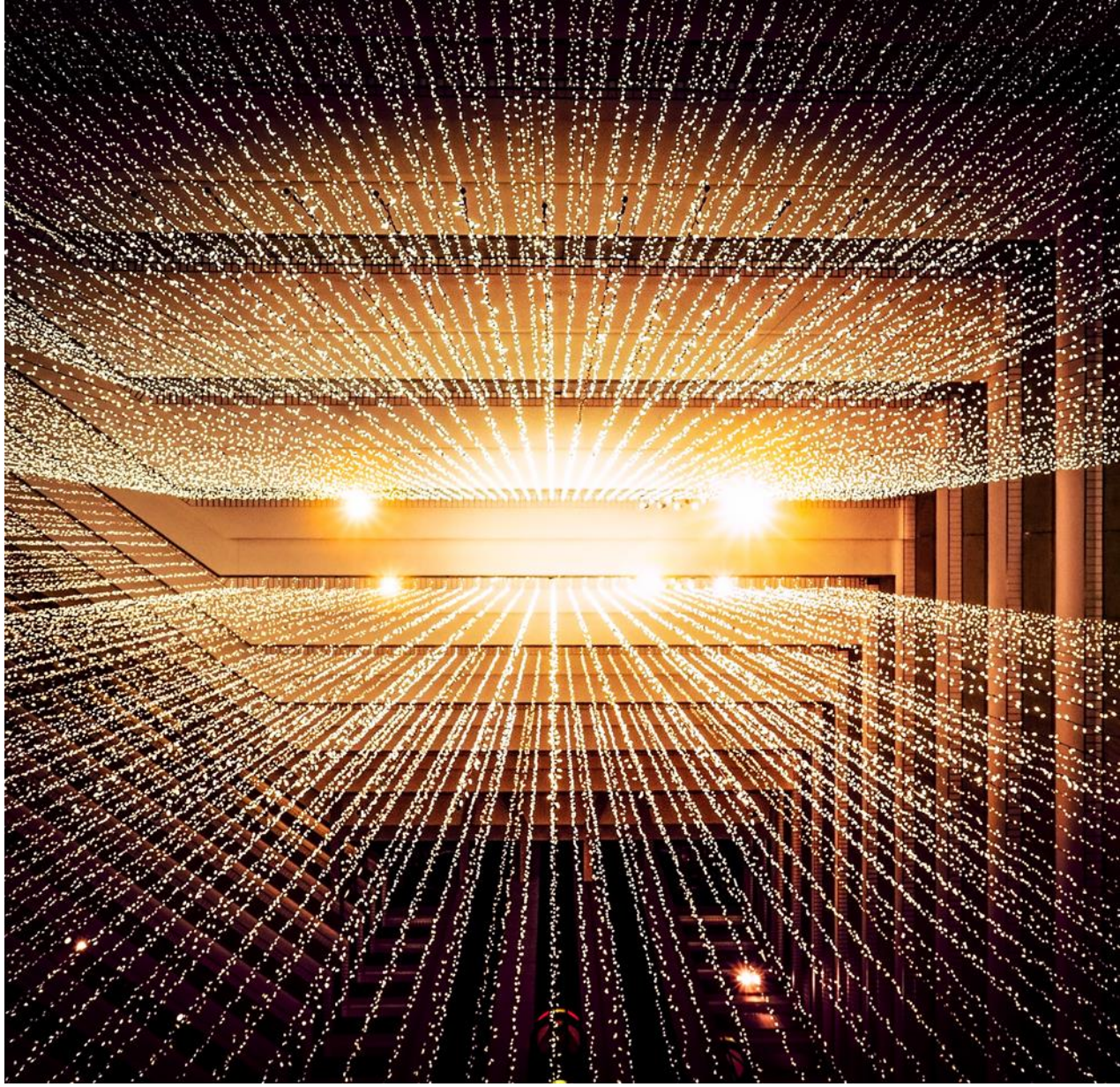
Research Community

The Open Science and Data Action Plan

- In 2017, Universities Finland (UNIFI) decided to produce an Open Science and Data Action Plan for the entire scholarly community
- The plan was published in May 2018



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National Coordination

- **Open Science coordination body**
  - The Federation of Finnish Learned Societies (TSV)
  - Identifies and deals with the current issues of Open Science

- **Aims**
  - To create a shared vision of an open research community that everyone can contribute to in their own work
  - To make sure that different tasks and projects support each other and that there are no overlaps or conflicting projects / goals
  - To support open discussion

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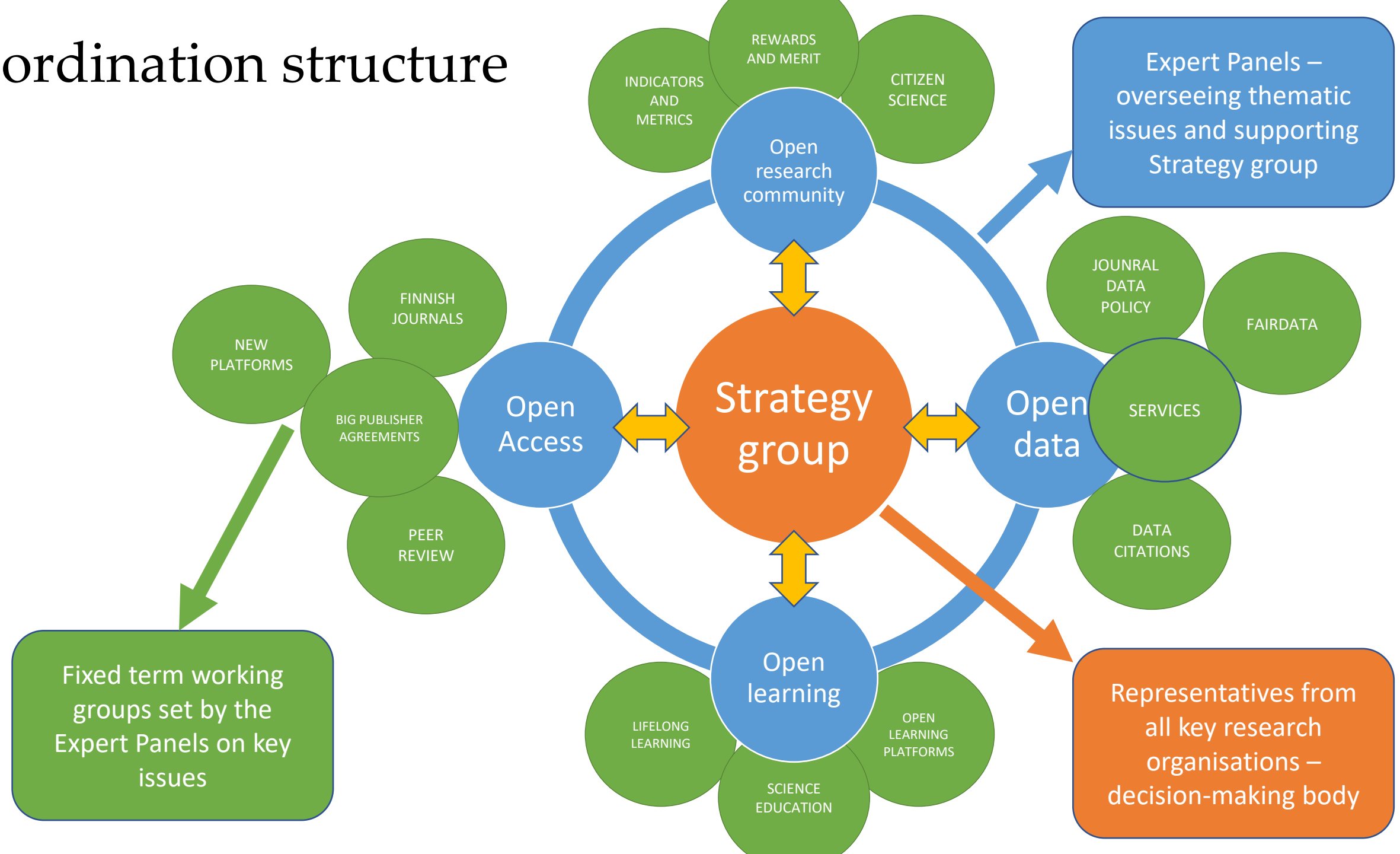
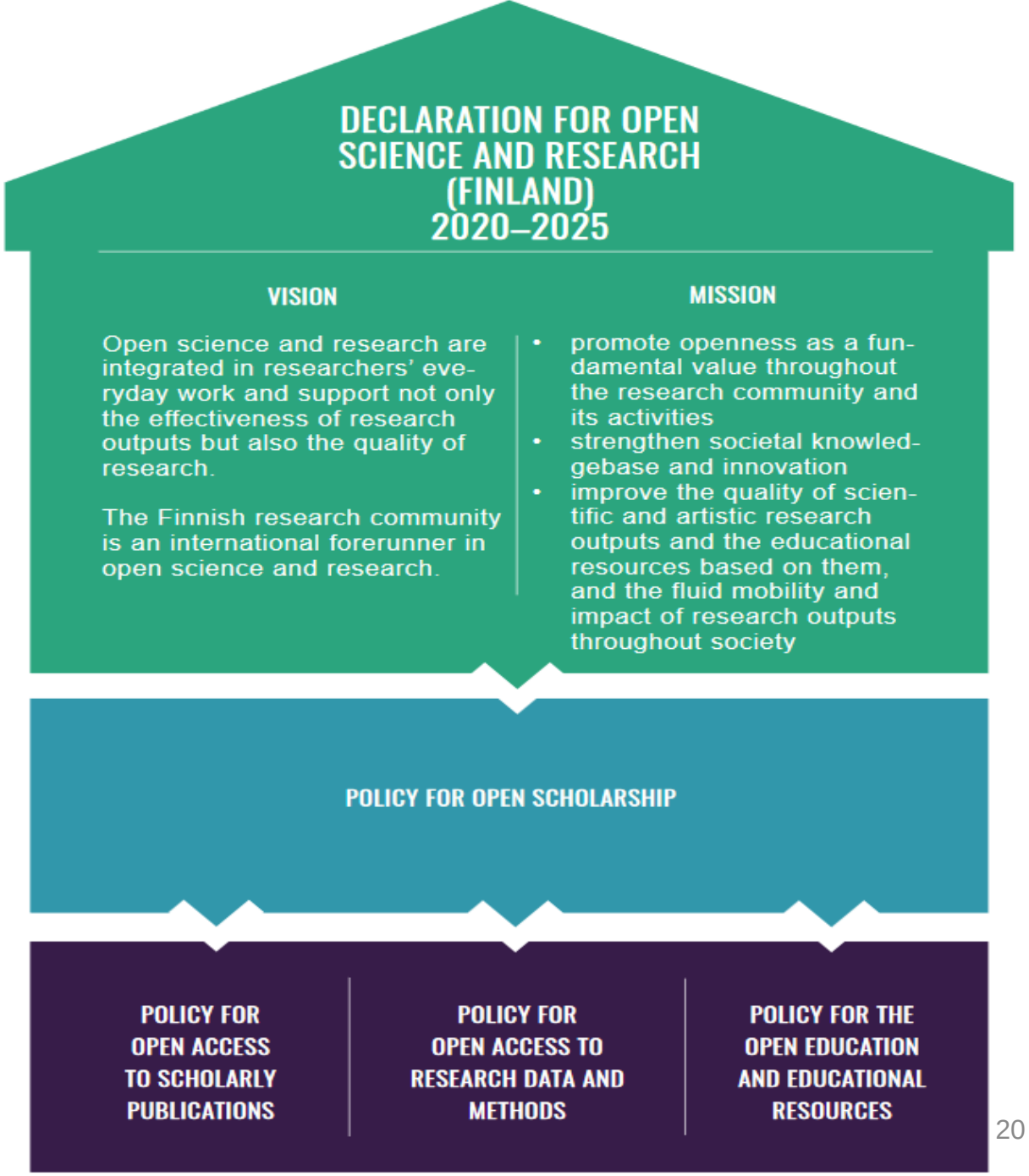
Coordination structure



Declaration for OS

- The Finnish research community has jointly created a Declaration for Open Science and Research (2019).
- The declaration provides a common direction for the development of the research community with a vision and mission.
- The declaration defines four strategic objectives that specify how openness will become part of the daily life of researchers and scientists:
  - research culture
  - open access to research publications,
  - open access to research data and methods; and
  - open education and educational resources as promoted by the research community.



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Universities Core Funding From 2021

42% Education

30% Bachelor's degrees and Master's degrees
- Master's degrees 19%, Bachelor's degrees 11%
- Coefficients: graduation times, multiple similar degrees, fields of education
- Funding up to the agreed target (Master's degrees)

5% Continuous learning
- ECTS based on cooperation 1%

4% Number of employed graduates and quality of employment
- Number of employed graduates 2%, graduate tracking 2%

3% Student feedback

34% Research

8% PhD degrees

14% Scientific publications
- Refereed scientific publications: Rating of publications Level 0 (coefficient 0,1), Level 1 (1), Level 2 (3) and Level 3 (4)
- Coefficient for open publications: 1,2

12% Competitive research funding
- International competitive research funding
- National competitive research funding and corporate funding

24% Other education and science policy considerations

15% Strategic development
- Part A. Strategecy of the University, implementation of the strategy, profiling, internationalisation
- Part B. National education and science policy aims
- Emphasis on part A

9% National duties
- Special national duties, tearcher training schools, National Library of Finland, University of Arts

The Cases Against Open Science

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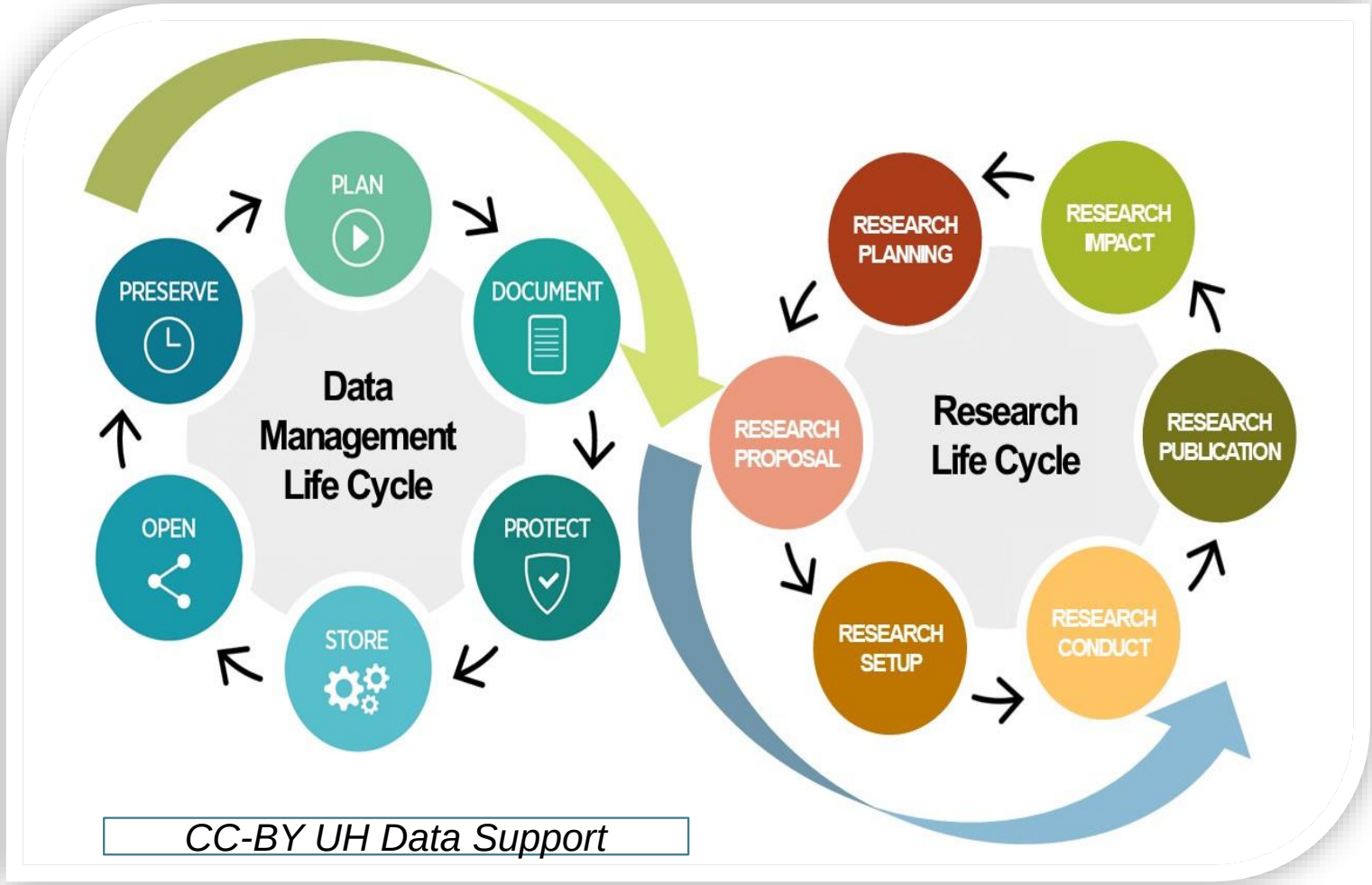
Open Science Requires (Extra) Work

Openess is not an accident!



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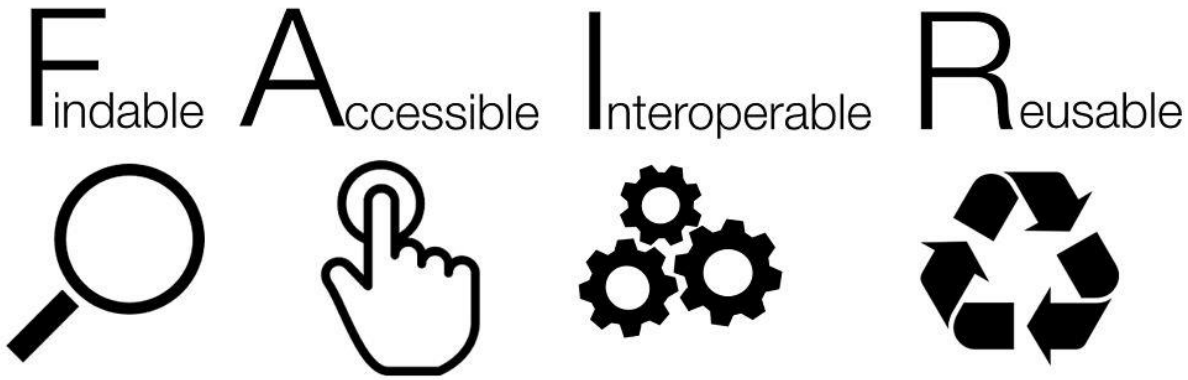
Plan your research

- Be the first to claim an idea – with a proper research proposal

- Make sure you manage your data – with a proper research data management plan (RDM)
- FAIR

- Make an impact by publishing your research publications openly



https://commons.wikimedia.org/wiki/File:FAIR_data_principles.jpg
Author: Sangya Pundir

Current Merit System does not Recognize Openess

- Openness can not be enhanced at the expense of quality - and vice versa
- Promoting a responsible researcher's assessment supports both openness and quality
- Recommendation for Responsible Evaluation of a Researcher in Finland (2020)

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Open Science is Not for all Fields of Science

- Medical research
- Research involving minors
- Business collaboration
- Product develpoment
- Military Sciences

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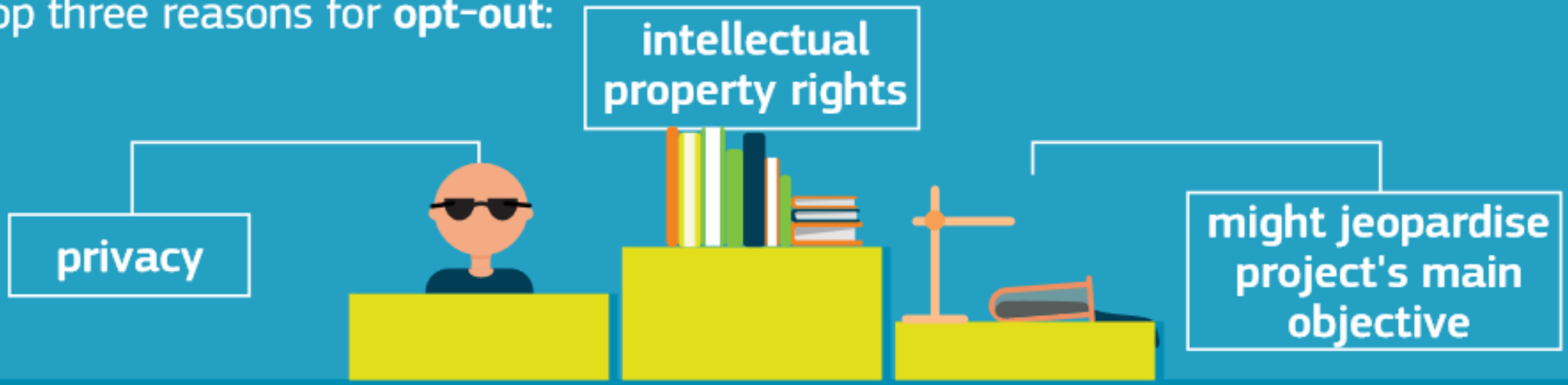
AS OPEN AS POSSIBLE, AS CLOSED AS NECESSARY

Grantees have the right to opt-out, but need to say why

Top three reasons for **opt-out**:



Kiitos
Thank you

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