

Transition to Open Science

Rethinking Recognition and Rewards

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Transition to Open Science: why?

problems of the science system

- Competitive and non-cooperative practices
- Quality and Replication crisis
- Expensive commercial publication markets
- Privatization and problems of knowledge ownership / knowledge access
- Relationship with society



Open Science (1)

The overall aim of Open Science is to increase the quality, progress and scientific & societal impact of research and scholarship.



Open Science (2)

To achieve these goals in the practice of Open Science

- Engage -when appropriate- with relevant and representative stakeholders from society to:
- Define problems to be investigated; discuss ongoing research
- Actively promote that the results of any kind provide guidance for implementation and action(s) in the specific contexts.



Open Science (3)

To achieve these goals in the practice of Open Science

- Share research results, if possible, in several stages of the work and publishing these papers Open Access
- and if possible FAIR Data and Code (Software) Open Access

Last but not least:

- Change research evaluation (Incentive and Rewards) accordingly





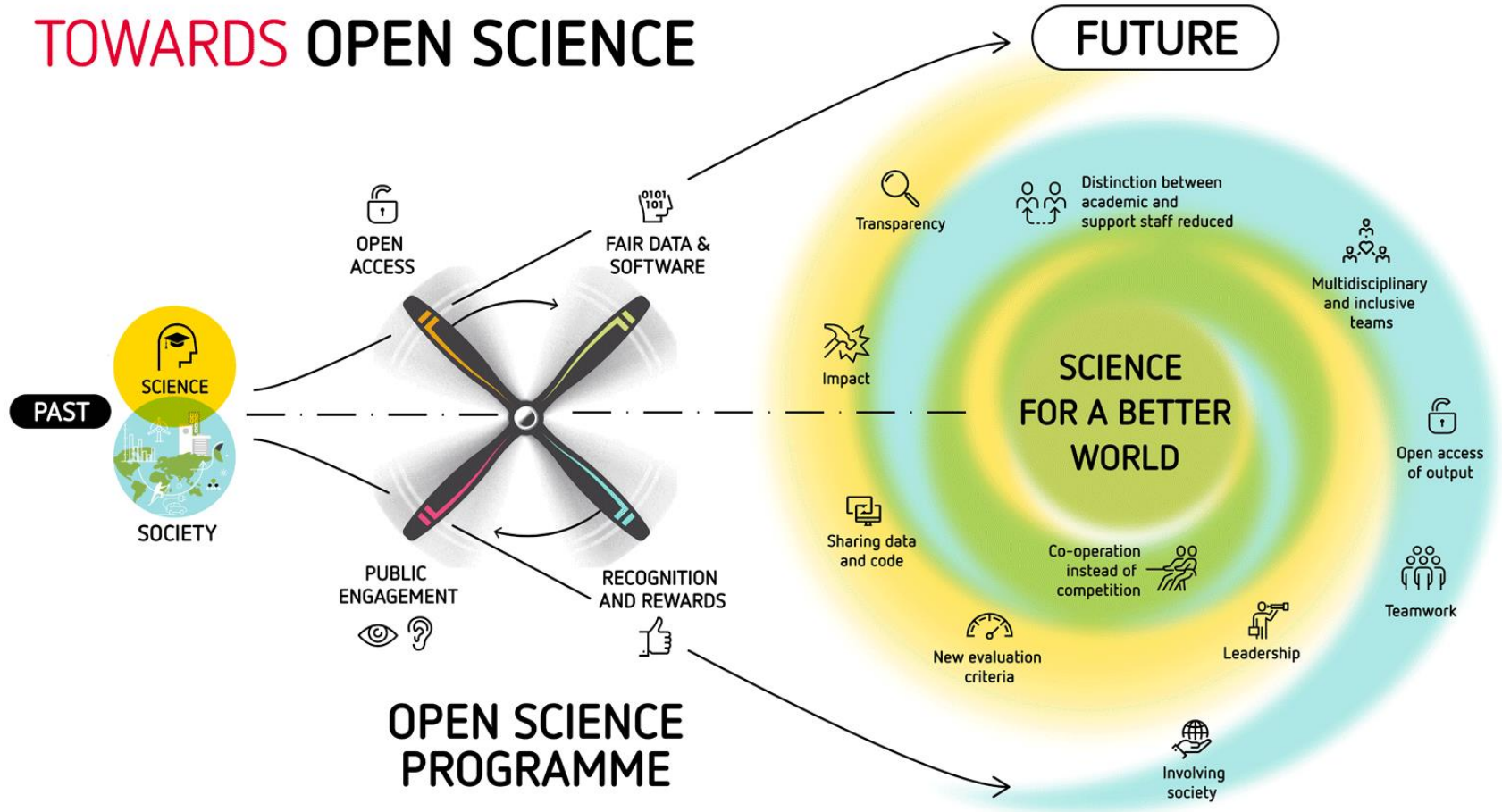
European Open Science Agenda 2016

- Rewards and Incentives
- Research Indicators and Next-Generation Metric
- OA and the Future of Scholarly Communication
- European Open Science Cloud
- FAIR Data
- Research Integrity
- Skills and Education
- Citizen Science/Public Engagement

<https://www.openscience.eu/open-science-policy-platform-final-report/>



TOWARDS OPEN SCIENCE





Open access

The goal of the open access project is to make substantial progress in order to make open access a natural part of the academic workflow.



FAIR data and software

Making relevant data fully FAIR (Findable, Accessible, Interoperable and Reusable) and also open wherever viable has many advantages.



Public engagement

Increasing public engagement helps to make science and scholarship relate more closely to societal issues and any questions that people might have.



Recognition and rewards

The available system of recognition and rewards is seen as the most important in effecting the change towards open science.

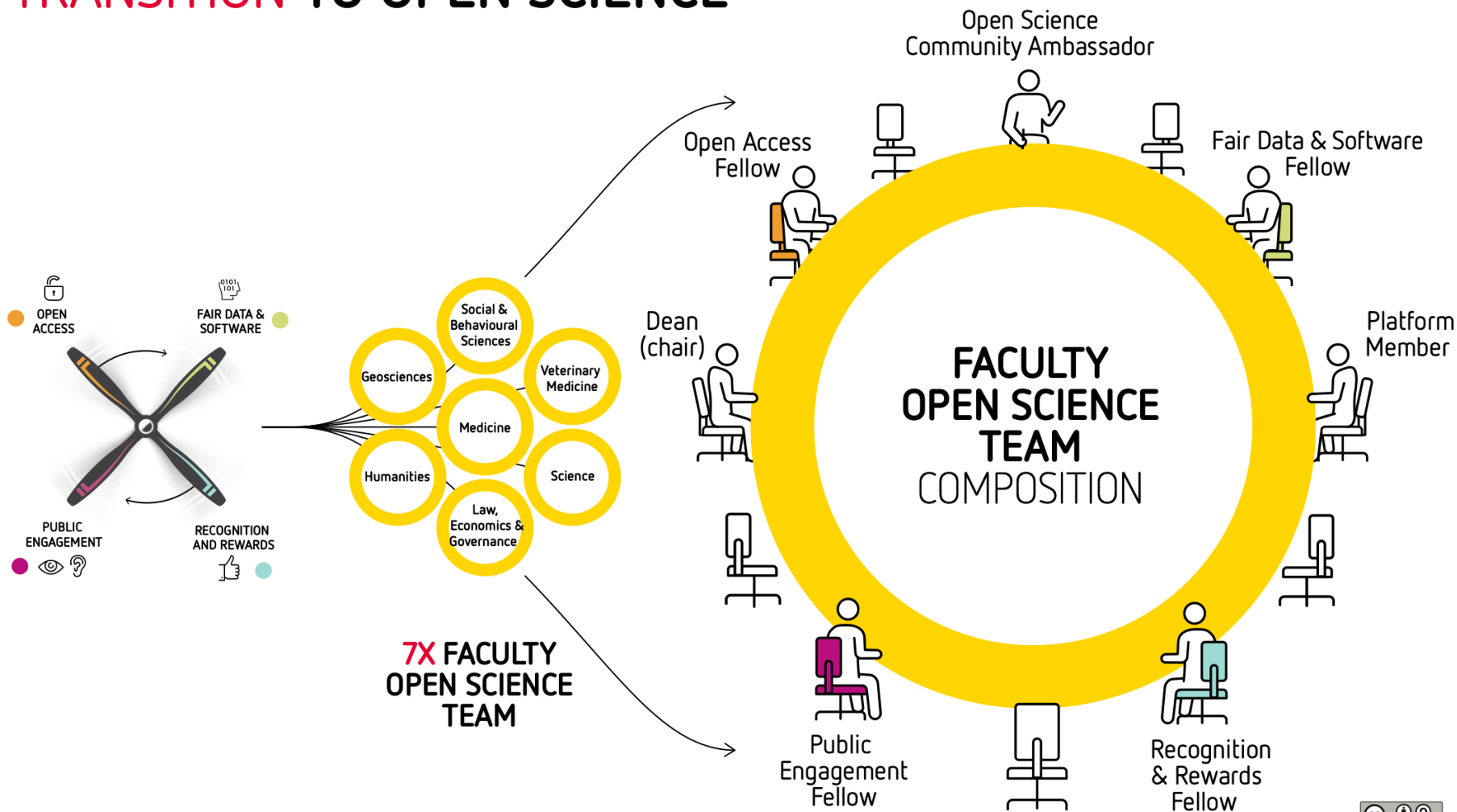


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TRANSITION TO OPEN SCIENCE



The Scientific Field: Professional Interests, Elites, Stratification, Power Struggle, and Economics

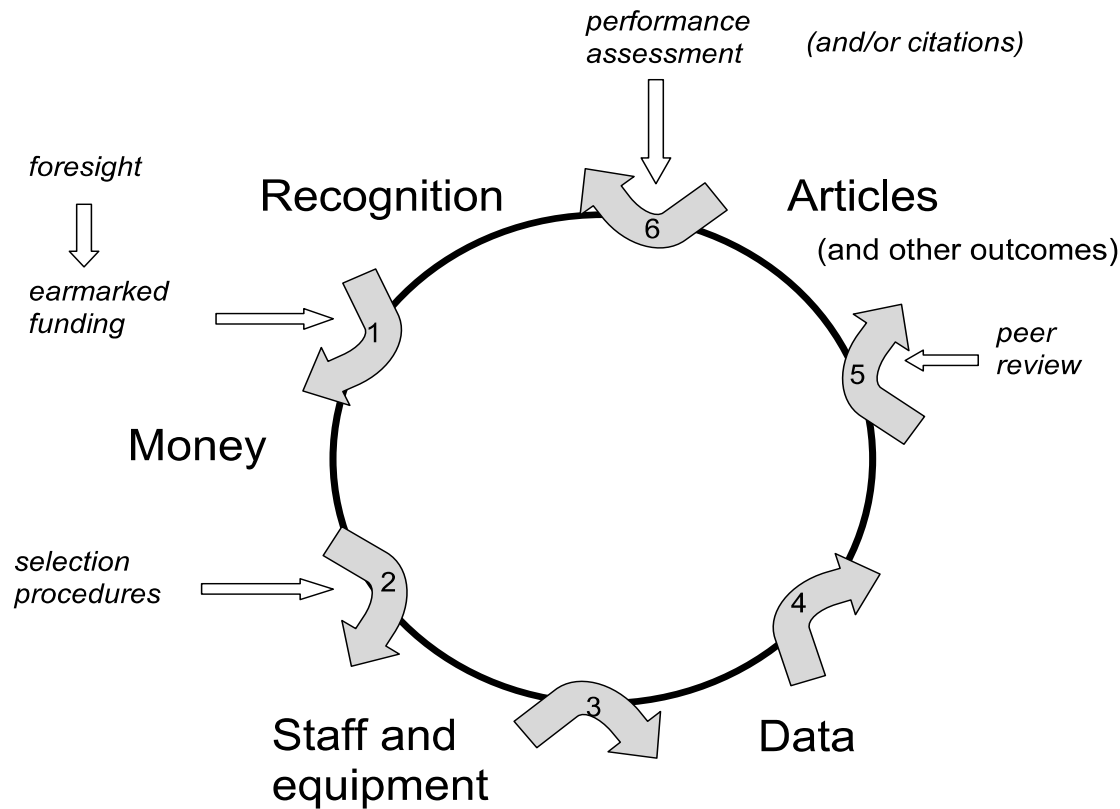


Figure 3. The credibility cycle, adapted from Latour and Woolgar (1986). Points at which organizational devices connect to the cycle are shown



Problems of the Current Reward System in Science

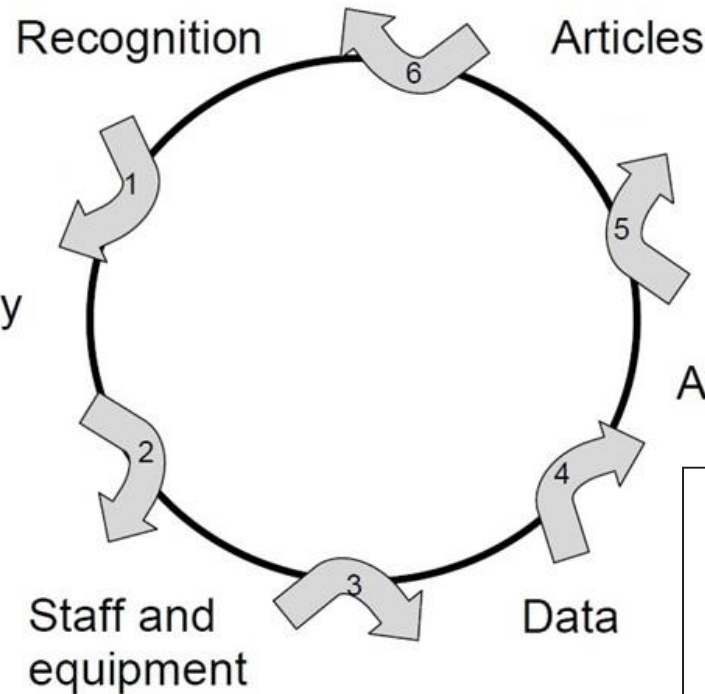
Society is largely absent from the *credibility cycle*

Quality in Quantitative terms:
- number of articles, journal impact factor, citations, H-index
- amount of funding obtained

Hypercompetition for limited funds

Too little room for Team-Science, Multidisciplinarity & Diversity

Money



- **Most papers still behind paywalls**
- **Data not shared**



Rethinking Research Evaluation: Metrics shapes Science

- *Novelty and quantity* are dominant over quality, replication, relevance and impact
- Short-termism and risk aversion because of 4-year funding cycles
- Fields with high societal impact, but low impact in the metrics system suffer (applied vs basic; SSH vs STEM)
- The national and institutional research agenda is thus not properly reflecting societal (clinical) needs (disease burden)



Open Science Evaluation: Incentives and Rewards

Pluriformity of quality indicators:

- No JIF, no H-index, no numbers of publications (DORA)
- Engage Non-academic Stakeholders
- Diversity and inclusiveness
- Peer review, narratives (supported by data)
- Open Science practices and efforts rewarded



@UMCUTRECHT: Inclusive set of generic indicators for research quality and impact (in use since 2016)

Structure	Leadership & culture
	Collaborations with stakeholders
	Continuity and infrastructure
Process	Setting research priorities
	Posing the right questions
	Incorporation of next steps
	Design, conduct, analysis
	Regulation and management (OA, FAIR data sharing)
Outcomes	Research products for peers
	Research products for societal groups
	Use of research products by peers
	Use of research products by societal groups
	Marks of recognition from peers
	Marks of recognition from societal groups



Utrecht University - TRIPLE model

TRIPLE: Team Spirit as the default approach to working in academia

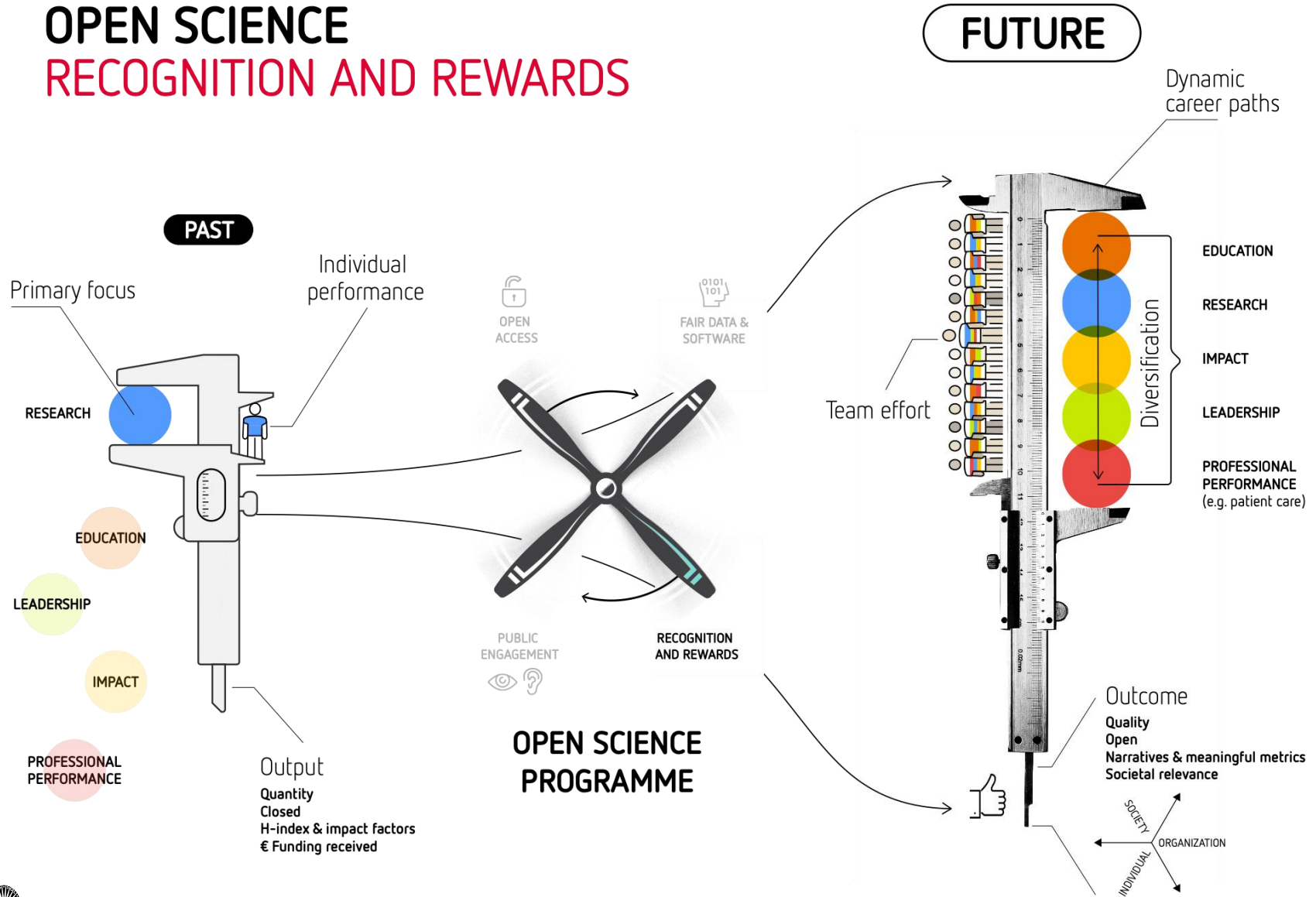


- TEAM
- RESEARCH
- IMPACT
- PROFESSIONAL PERFORMANCE
- LEADERSHIP
- EDUCATION

TRIPLE MODEL



OPEN SCIENCE RECOGNITION AND REWARDS



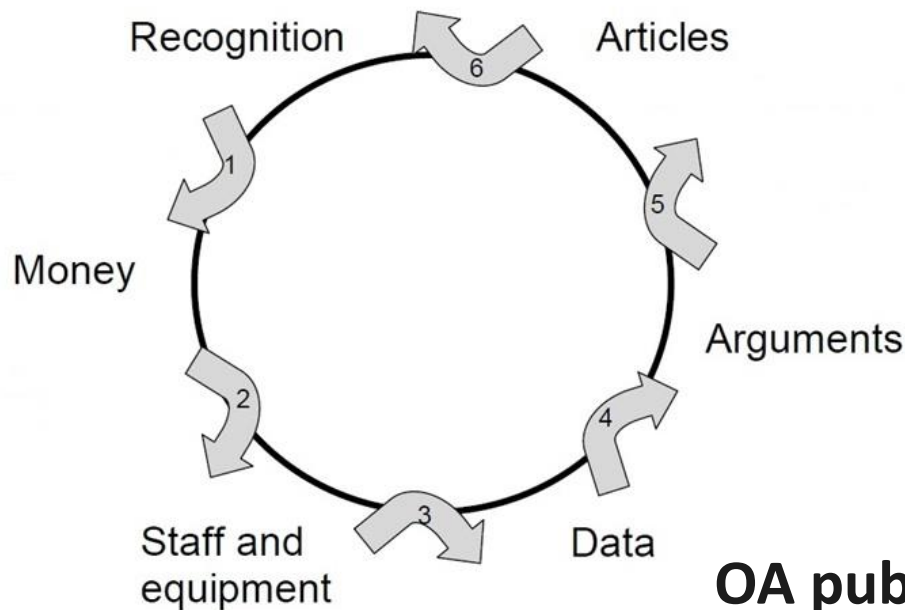
Systemic Interventions to improve quality, impact and integrity at all levels

Engagement of societal stakeholders in problem choice, research and evaluation

Inclusive indicators

Quality (DORA)
Societal Impact & PE
Academic Leadership and Culture
EDI

OPEN PEER REVIEW
POST PUB PEER REVIEW



OA publishing
FAIR data sharing

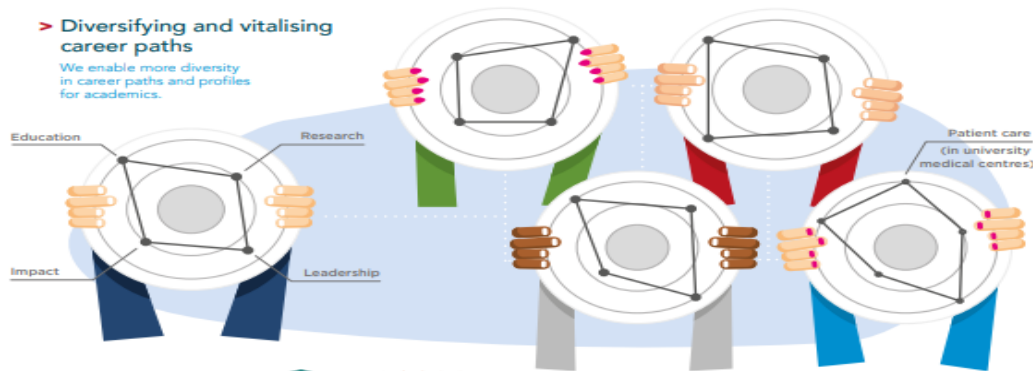


Room for everyone's talent

towards a new balance in the recognition and rewards of academics

> Diversifying and vitalising career paths

We enable more diversity in career paths and profiles for academics.



> Achieving balance between individuals and the collective

We assess academics based on both their individual and their team performance.



> Focusing on quality

In our assessments of academic performance, we increasingly focus on quality, content and creativity.

> Stimulating open science

We encourage academics to share their research outcomes with society.



> Stimulating academic leadership

We stimulate good academic leadership at all levels.



National funders (NWO, ZonMW)

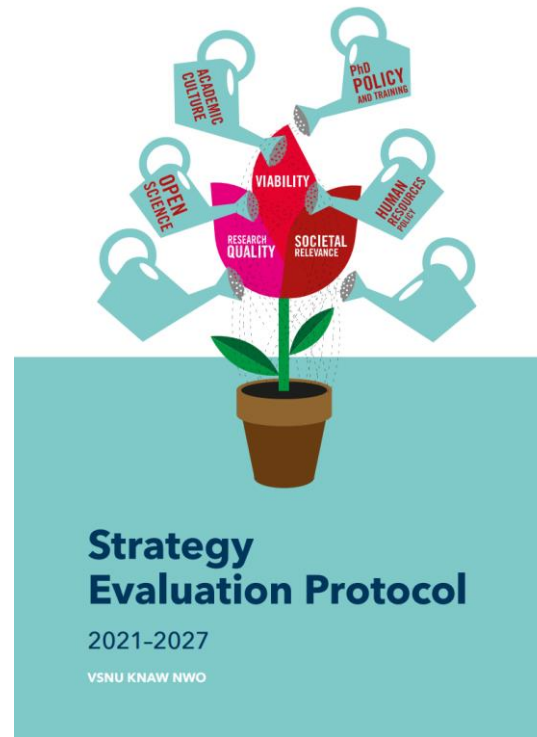


- Narrative CV:
 - Academic profile
 - Key outputs (not limited to publications)
- Indicate the importance of each output, how it is related to the project, and/or how it shows the applicant's abilities
- No aggregate indicators; provide context for indicators used: why is it a good measure? What does it imply?

<https://sfdora.org/2019/11/14/quality-over-quantity-how-the-dutch-research-council-is-giving-researchers-the-opportunity-to-showcase-diverse-types-of-talent/>



National Strategic Evaluation Protocol The Netherlands 2021-2027



National Strategic Evaluation Protocol

The Netherlands 2021-2027

The research unit:

- **Vision, strategy and aims of the research are outlined**
- **Narratives (supported by data)***
- **Free choice of indicators**

*Compatible with DORA

https://www.vsnu.nl/files/documenten/Domeinen/Onderzoek/SEP_2021-2027.pdf



National Strategic Evaluation Protocol The Netherlands 2021-2027

Evaluation is in relation to the unit's strategy

Three criteria:

Research Quality, Societal Impact and Viability

Four Aspects:

- **Open Science practices and efforts**
- **PhD policy and Training**
- **Academic Culture (Openness, Safety, Inclusiveness, Research Integrity)**
- **Human Resources Policy (Diversity, Talent Management)**

https://www.vsnu.nl/files/documenten/Domeinen/Onderzoek/SEP_2021-2027.pdf



The many Initiatives and Actions

- <https://sfdora.org> **The San Francisco Declaration on Research Assessment**
- **2016 EU adopts Open Science as the standard for Horizon Europe 2021**
- <http://ec.europa.eu/research/openscience/index.cfm?pg=open-science-policy-platform> Including Open Science Career Advancement Matrix
- **Coalition S and Plan S**
- **UNESCO** <https://en.unesco.org/science-sustainable-future/open-science>
- <http://www.leidenmanifesto.org>
- <http://responsiblemetrics.org>
- VSNU, NWO, NFU: www.vsnu.nl/Room for Everyone's Talent;
- https://www.vsnu.nl/files/documenten/Domeinen/Onderzoek/SEP_2021-2027.pdf

