Incentives and rewards for researchers in the transition to Open Science

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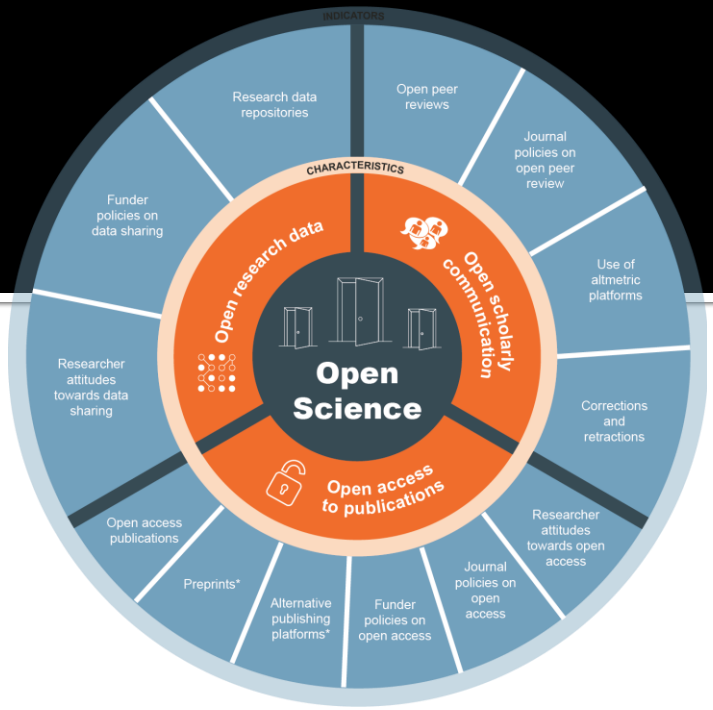
Open Science

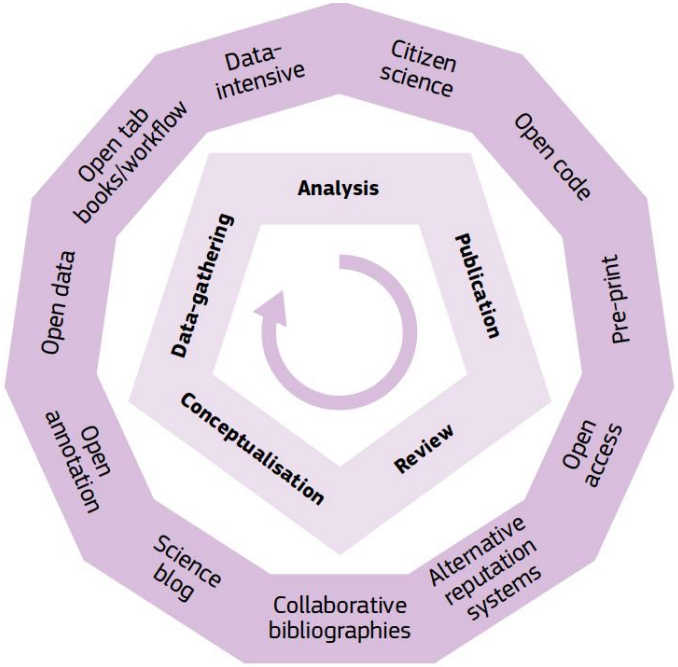
Variously defined by

- the use of new digital tools
- a specific set of values
- practices of collaboration and sharing
- a view of the research workflow and related governance

Platform to debate what counts as science, scientific infrastructures and scientific governance, and how results should be credited and disseminated

Global scope, systemic reach, local implementation





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MLE on Open Science


Frank Miedema
Chair


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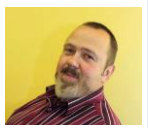
Kim Holmberg
Expert

PSF Knowledge Centre: https://ec.europa.eu/h2020-policy-support-facility

Three topics:

1. The potential of altmetrics – alternative (i.e. non-traditional) metrics that go beyond citations of articles – to foster Open Science
2. Incentives and rewards for researchers to engage in Open Science activities
3. Guidelines for developing and implementing national policies for Open Science

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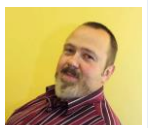
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2. **Incentives and rewards for researchers to engage in Open Science activities**
3. Guidelines for developing and implementing national policies for Open Science

Obstacles to Making Science Open

1. evaluation and credit systems
2. diversity in research cultures
3. costs and accountabilities
4. skills and training
5. intellectual property regimes
6. semantic ambiguity
7. ethical and social concerns
8. high resource bias

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MLE findings: Open Science incentives and rewards

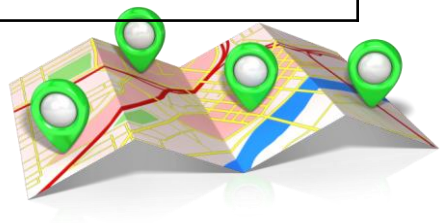
Career Assessment & Research Evaluation	Fairer assessment of research efforts that takes the complexity of scientific activities into account
OS Training & Education Resources	Better training and support for research dissemination, data curation and responsible collaboration, for both researchers and professional services
Citation, Authorship & Publication system	Shifts in publishing and citation cultures, and rewards for other activities, such as peer review
Sustainability	Reliable Open Science infrastructures and policies, that guarantee long term support
Role Models	Visible recognition of Open Science activities: prizes, honors
Legal security	Clarity on publication rights, data protection etc.
Transparency & Accountability	Transparency of research assessments, through for instance Open Peer Review. Clear, non-contradictory strategies. Monitoring of investments and swift identification of concerns
International Coordination & Science Diplomacy	Enhanced international and diplomatic relations, local visibility and reputation
Openness to innovation	Interplay of IPR and the creation of knowledge commons

Key to OS Implementation

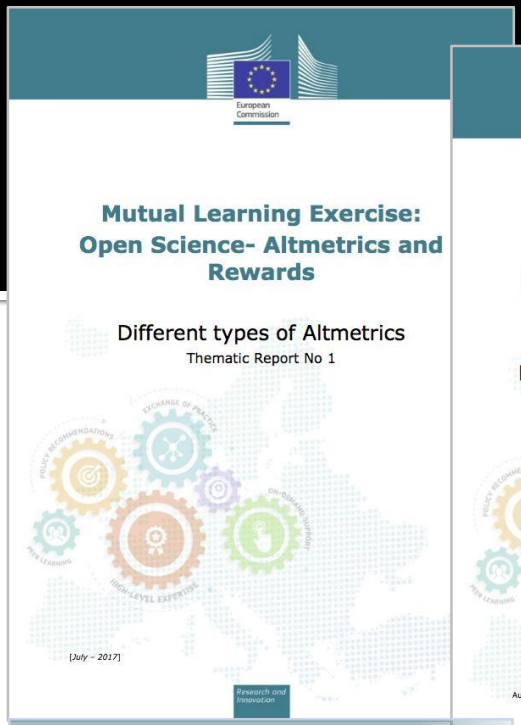
- **Target what can be improved, not what already works**
  - Do not throw the baby out with the bathwater: value of long-standing research traditions and reviewing methods
  - Provide infrastructures, resources and training to enable sustainable open science efforts
- **Target researchers through incentives and rewards – which largely depend on research institutions, funders and governing bodies**
  - OS is not something for researchers to sort out on their own
  - OS provides tools for efficient and productive research governance
  - Research institutions and funders are responsible for providing incentives and infrastructures, and need support

Roadmap for Open Science Implementation

Map	Identify key stakeholders and Open Science champions
Plan	Devise national strategy through consultation with stakeholders
Incentivize	Change reward system to incentivize all aspects of Open Science
Promote	Encourage critical and informed thinking
Support	Participate in international initiatives
Implement	Implement strategy, starting from Open Access
Monitor	Monitor and tackle emerging issues as they arise



Thematic Reports of the MLE

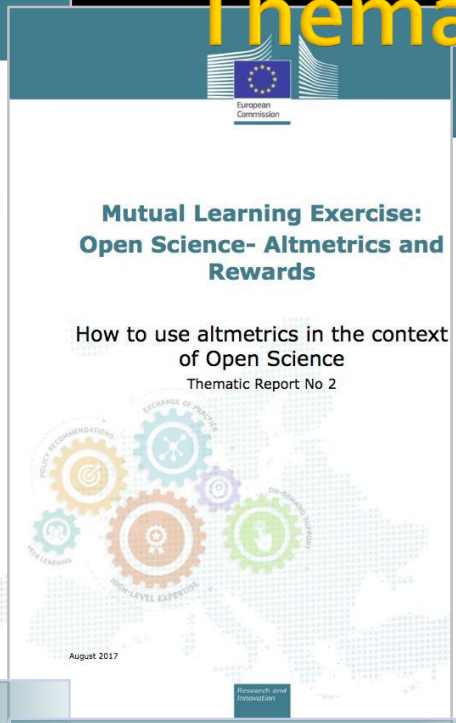


Overview of Altmetrics:

- in use & in development
- by type
- by [participating] country
- benefits and challenges

Conclusions:

- not yet used for research evaluation
- too early to use
- more research is needed



Altmetrics could:

- broaden our understanding of impact
  - Promote adoption of Open Science (**OS**)
- contribute to the academic reward system

Issues are:

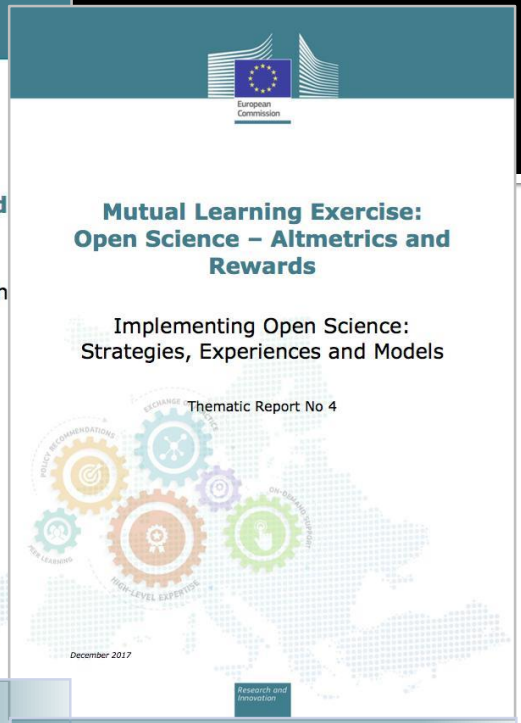
- insufficient evidence
- limitations of (proprietary) data sources
- methods are not yet open

Systematic overview of:

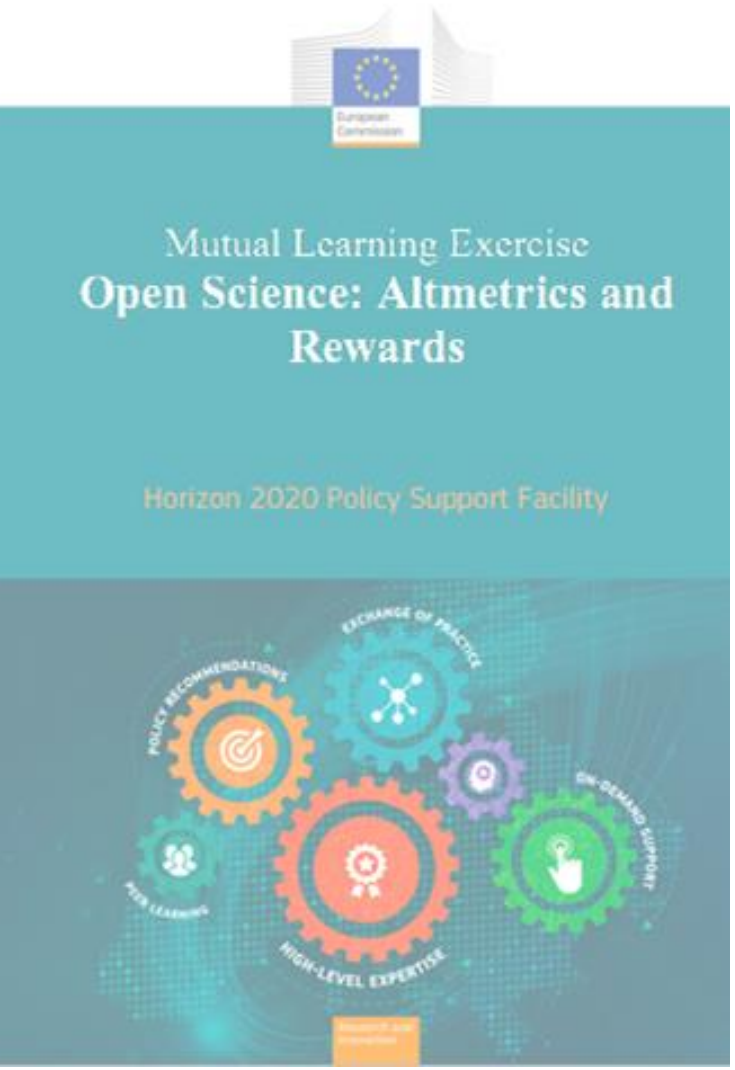
- advantages and challenges of supporting **OS** activities
- most effective incentives to encourage implementation of **OS** policies.
- (dis)advantages of each type of incentive

Conclusion: Key stakeholders should be incentivized:

1. researchers
2. institutions and funders
3. national governments.



- proposal for a National Roadmap for the Implementation of **OS**
- outline of priorities and principles underpinning the implementation of **OS** at the national level
- review of experiences in developing and supporting **OS** activities and related policies
- summary of strategies, lessons learnt, and models proposed



Final Report

1. INTRODUCTION
2. METHODOLOGY
3. BACKGROUND OPEN SCIENCE
    1. The status of Open Science in Europe – implementation and aspiration
    2. Altmetrics
    3. Incentives and rewards
    4. National initiatives for open science
4. POSITIONS AND PERSPECTIVES FROM MEMBER STATES AND PARTICIPATING COUNTRIES
5. LESSONS LEARNED
    1. Key concerns and best practices
    2. Priorities
    3. Roadmap for the implementation of Open Science
    4. Conclusions and Next Steps

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MLE Open Science

Altmetrics and Rewards

http://europa.eu/!bj48Xg

Incentives and Rewards for Researchers

Open Science Career Assessment Matrix (OS-CAM)	
Open Science activities	*Possible evaluation criteria*
RESEARCH OUTPUT	
Research activity	Pushing forward the boundaries of open science as a research topic
Publications	Publishing in open access journals Self-arch
Datasets and research results	Using th Adopting Making
Open source	Using o Developi
Funding	Securing
RESEARCH PROCESS	
Stakeholder engagement / citizen science	Actively Sharing platform Involving
Collaboration and Interdisciplinarity	Widening Engaging
Research integrity	Being a confiden activities Fully re including
Risk management	Taking a
SERVICE AND LEADERSHIP	
Leadership	Developi normal p Driving p Being a
Academic standing	Developi Contribu
Peer review	Contribu Examining or assessing open research
Networking	Participating in national and international networks relating to open science
RESEARCH IMPACT	
Communication and Dissemination	Participating in public engagement activities Sharing research results through non-academic dissemination channels Translating research into a language suitable for public understanding
IP (patents, licenses)	Being knowledgeable on the legal and ethical issues relating to IPR Transferring IP to the wider economy
Societal impact	Evidence of use of research by societal groups Recognition from societal groups or for societal activities
Knowledge exchange	Engaging in open innovation with partners beyond academia
TEACHING AND SUPERVISION	
Teaching	Training other researchers in open science principles and methods Developing curricula and programs in open science methods, including open science data management Raising awareness and understanding in open science in undergraduate and masters' programs
Mentoring	Mentoring and encouraging others in developing their open science capabilities
Supervision	Supporting early stage researchers to adopt an open science approach
PROFESSIONAL EXPERIENCE	
Continuing professional development	Investing in own professional development to build open science capabilities
Project management	Successfully delivering open science projects involving diverse research teams
Personal qualities	Demonstrating the personal qualities to engage society and research users with open science Showing the flexibility and perseverance to respond to the challenges of conducting open science

Conclusions: How Can Open Science Help With..

- Loss of research excellence and long-term reliability
- Increase of burden on (young) researchers
- Loss of access to publicly funded research outputs
- Disconnection between knowledge production and social role of research
- Disincentive to international and interdisciplinary collaboration
- Undermining of humanities and social sciences
- Increasing divide between high-resources and low-resourced environments (within and beyond research)
- Lack of transparency and credibility, public trust

Conclusions: A Bad Scenario

- Loss of research excellence and long-term reliability
- Increase of burden on researchers
- Loss of access to publicly funded research outputs
- Disconnection between knowledge production and social role of research
- Disincentive to international and interdisciplinary collaboration
- Undermining of humanities and social sciences
- Increasing divide between high-resourced and low-resourced environments (within and beyond research)
- Lack of transparency and credibility, public trust
- Loss of creativity and increased bureaucracy
- OS demands piled on top of existing reward& evaluation system
- Loss of freedom to publish
- Continuing disconnection between knowledge production and social role of research
- Diversity of OS measure act as disincentive to international and interdisciplinary collaboration
- Even worse undermining of humanities and social sciences
- Continuing to increase divide between high-resourced and low-resourced environments
- Lack of understanding, public trust; opinion vs evidence

Conclusions: A Good Scenario

- Loss of research excellence and long-term reliability
- Loss of access to publicly funded research outputs
- Disconnection between knowledge production and social role of research
- Disincentive to international and interdisciplinary collaboration
- Undermining of humanities and social sciences
- Increasing divide between high-resources and low-resourced environments (within and beyond research)
- Lack of transparency and credibility, public trust

- Increased excellent and creativity
- Sustainable free access with no charge to authors
- Stronger links between knowledge production and social role of research
- Strong incentives to international and interdisciplinary collaboration
- Refocusing on humanities and social sciences as crucial to OS
- Fostering research in low-resourced environments (within and beyond research)
- Increased engagement and public trust