Open Science in TU Dublin:
An Institutional Perspective

Dr John Donovan, Head of Research, TU Dublin
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By 2021 your Research Funding and Research
Funding Opportunities will DISAPPEAR
if
you are not on the path to OPEN SCIENCE.

Outline

TU Dublin and Open Science (OS)

The EU and OS

Implementation: OA to OS

cOAlition-S and Plan-S

The Future

TU Dublin and Open Science

- 10 years Green OA
- 80% of outputs are OA
- 14k deposits & 8.25m downloads
- 2017 set up ARROW Data
- 2018 Established TUDORAG
- 2019 Adopted new National Guidelines
- 2019 - 2022 Open Science Pilot
- One of the most successful repositories in Europe
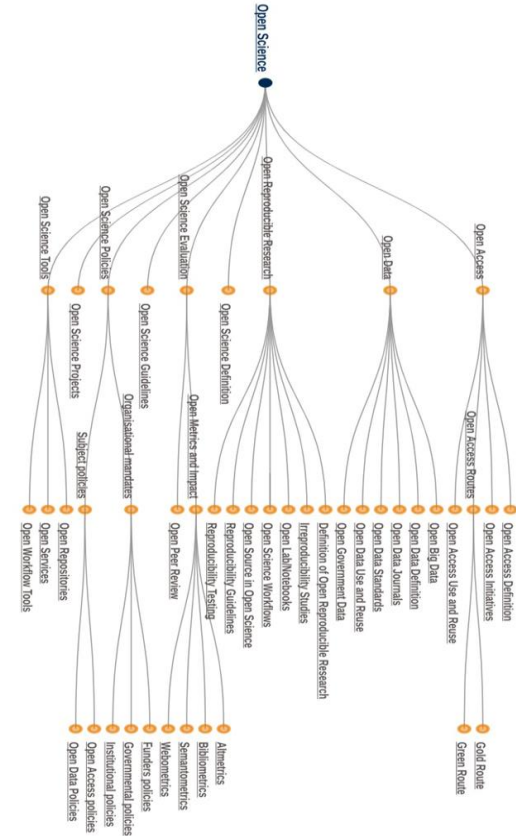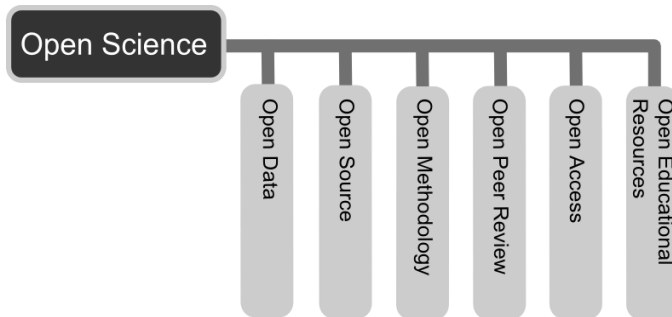
Open Science

The Government should take an active role in promoting the international flow of scientific information' (Bush, V 1945)

This recommendation set the trajectory for Open Science, culminating in 'The National Guidelines for the Transition to Open Research'.

...but Open Science is many things
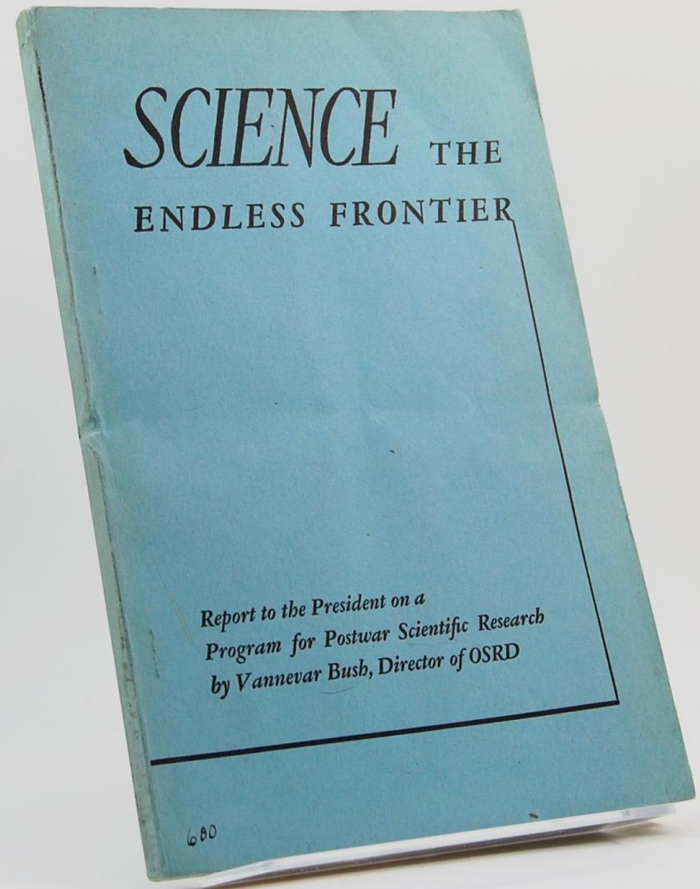
Numerous models of 'Open Science'
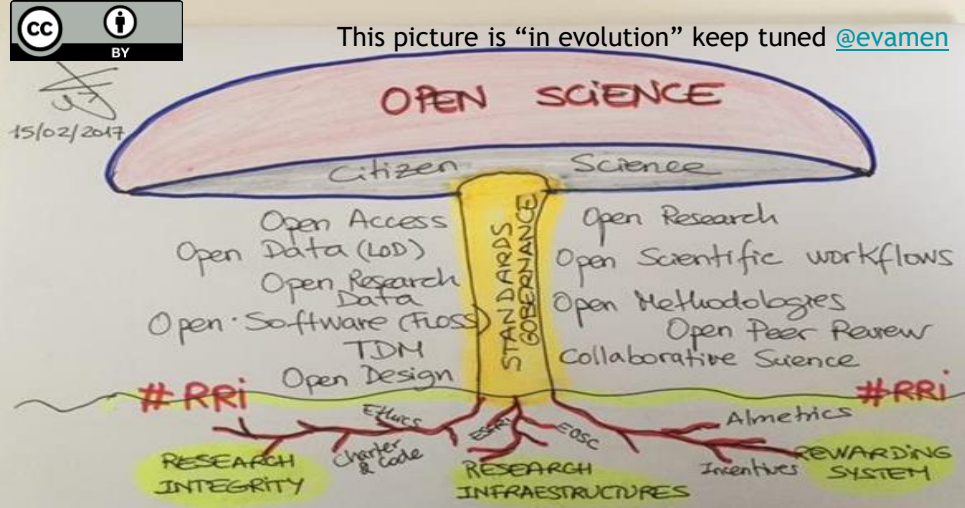
...but few ideas for implementation

What does Open Science mean on the ground?

Open Science and Career Paths?

Open Science and '1st over the Cliff'

TU Dublin's OS implementation starts with the EU definition of OS

The EU and Open Science

"Open Science aims at transforming science through digital tools and networks, to make research more open, global, collaborative, creative and closer to society."
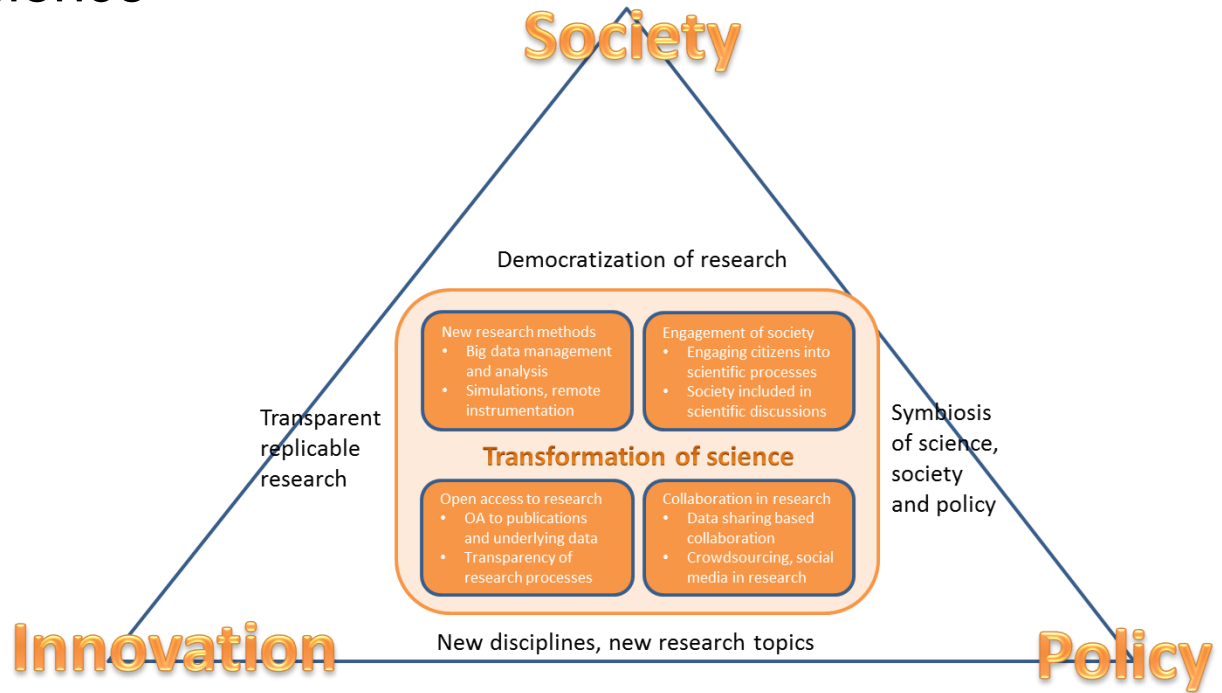
How does this translate into action?

Society

Democratization of research

Transparent replicable research

New research methods
- Big data management and analysis
- Simulations, remote instrumentation

Engagement of society
- Engaging citizens into scientific processes
- Society included in scientific discussions

Transformation of science

Open access to research
- OA to publications and underlying data
- Transparency of research processes

Collaboration in research
- Data sharing based collaboration
- Crowdsourcing, social media in research

Symbiosis of science, society and policy

Innovation

New disciplines, new research topics

Policy

JC Burgelman 2017 "Open Access and the Future of Scholarly Communication"

[Principles]

- Introducing requirements for beneficiaries to maintain enough rights to fulfil their open access obligations in FP9
- Crafting mandatory technical standards for the persistent identification of digital objects and publication repositories
- Launching a robust, formalised and automated monitoring system with sanctions to ensure compliance with FP9 mandate
- Promoting the early sharing of publications and other outputs in OA mode. The Commission will fully reimburse APCs for publication in DOAJ, whereas no reimbursement is foreseen vis-à-vis hybrid journals (the "transition period" invocated (sic) by a number of journals is expected to come to an end in the next few years)
- Supporting activities that promote a sustainable and innovative scholarly communications ecosystem

JC Burgelman EARMA Leadership Event Brussels 2018

TU Dublin Key External OS Drivers

Public Policy

- Accelerate and diversify research activity

Public Research Funders

- Dissemination of 'their' outputs
- Tax payer VfM

Replicability and Reproducibility

- Nature survey 2016 70% of respondents say they cannot always reproduce the results of others or even their own

Integrity

- Not all irreproducibility is malpractice, the best estimate is that it about 2% but…
  - See recent BMJ article and editorial

TU Dublin's Internal OS Drivers

- New TU Dublin strategy will explicitly define 'Open Science' as an objective.

- Marketing our research activity by sharing on a global platform.

- Building on successful internal OA partnership (SLT, Researchers, Library, Research Services)

- Openness to the wider Open Data regime.
  - *'How does this affect my career?'*
  - Loss of '1st' mover advantage'

- 3 distinct populations of researchers
  - Younger (PhDs, early postdocs and new academics) Very Positive
  - Older (established academic PIs and researchers) Positive
  - The middle group (Academics and Researchers in transition) Less positive and remained to be convinced.

Bringing it all together: TU Open Science Charter

- To disseminate our outputs and raise our profile
    - Open Access (including a universal right to read (and mine))
- To support confidence and accelerate the pace of research
    - Open Data (issue around which data)
    - Open Methodology (including methods and analysis)
- To be fair and inclusive
    - Open Recruitment and Progression (Researchers' Charter)
    - Open Evaluation, Assessment and Recognition (DORAesque or Leidenesque)
- To be engaged
    - Citizen Science
- To be seen to be 'honest'
    - Open Ethics reviews
    - Open Integrity reviews

So, how will this work on the ground?

TU Dublin Open Science Pilot

Objective:

- Provide a University Framework for the transition to Open Science based on the 'National Guidelines for the transition to Open Science'.

Goals:

- In a limited testbed, to confirm the viability of Open Science in TU Dublin
- To Identify hurdles & challenges that need to be addressed in the transition to Open Science.
- To develop interventions that address the hurdles and challenges.
- To produce an informed policy on Open Science for the TU Dublin.

Methodology

- Practise based research project with three groups of researchers who have commited to explore this with the Library and Research Services
  - Arts and Humanities, Engineering/ICT and Biosciences)
- Duration is up to three years and funded (€250k) from own resources.

cOAlition S and Plan S

Plan S is the single biggest thing to happen to academic publishing in the last 200 years.

"With effect from 2021, all scholarly publications on the results from research funded by public or private grants provided by national, regional and international research councils and funding bodies, must be published in Open Access Journals, on Open Access Platforms, or made immediately available through Open Access Repositories without embargo."

"*There will be casualties*" Professor Michael Murphy, President EUA

Researchers do the work, researchers do the reviews, researchers are the editors for no pay, researchers pay for a subscription to read **their own work** and 30% of that subscription transfers, directly, to the publishers shareholders - what a fantastic business model

Plan S is not just Europe

200 + cOAlition S Members & Supporters

The number is growing all the time
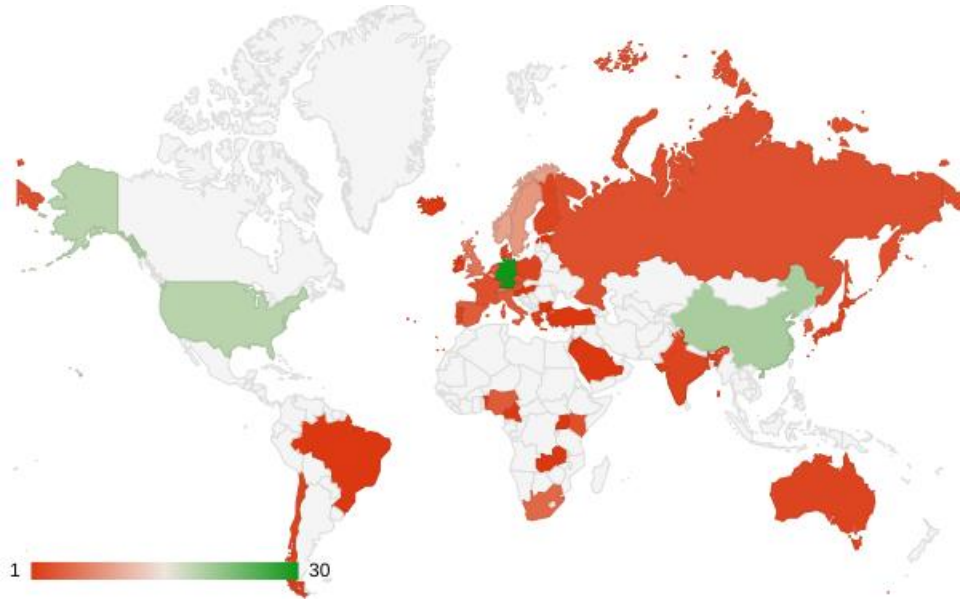
The Immediate Future of OS? (October 2020)

Open science will make science more efficient, reliable and responsive to societal challenges. The European Commission has sought to advance Open Science policy from its inception in a holistic and integrated way, covering all aspects of the research cycle from scientific discovery and review to sharing knowledge, publishing and outreach.

We present the steps taken with a forward-looking perspective of the challenges laying (sic) ahead, in particular , the necessary change of the rewards and incentives system for researchers (for which various actors are co-responsible and which goes beyond the mandate the European Commission).

Finally, we discuss the promising role of Artificial Intelligence within an Open Science perspective.

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Thank You