# PRIORITIES IN R&D DURING DUTCH PRESIDENCY AND ACHIEVEMENTS

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opinions are my own

**nl EU 2016**

**Steering Platform on Research for Western Balkan Countries**

European Commission

RegionalCooperationCouncil

# Contents

- Open Science:
  - Background info
- Dutch Presidency: priorities
  - Infrastructures and KP7
  - Framework conditions
  - Open Science
- Open Science: From Vision to Action
  - ERAC Taskforce
  - Presidency Conference: Call for Action
  - Council Conclusions:
    - set targets, establish OS Policy Platform
- Lessons learned

# 1. Open Science

Background information

# Let's Make Science Open

- Neelie Kroes (2012)

    "**We start the era of open science**"

    *11 April 2012 ALLEA conference Rome*

- EC Communication  **17.7.2012**

    **Towards better access to scientific information**
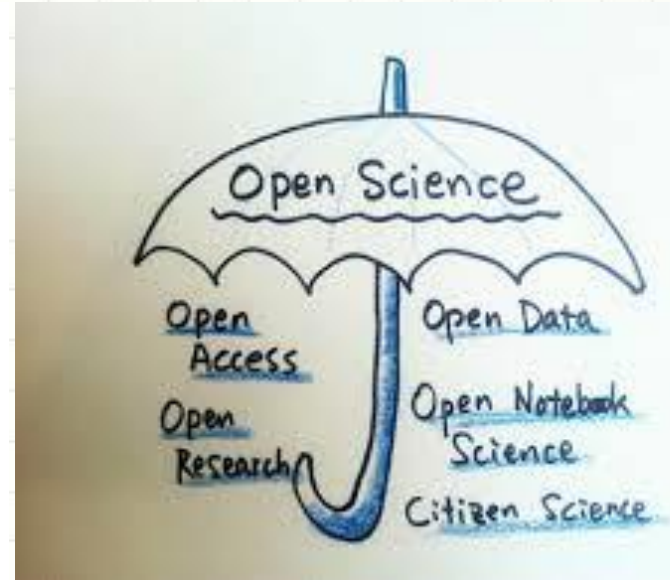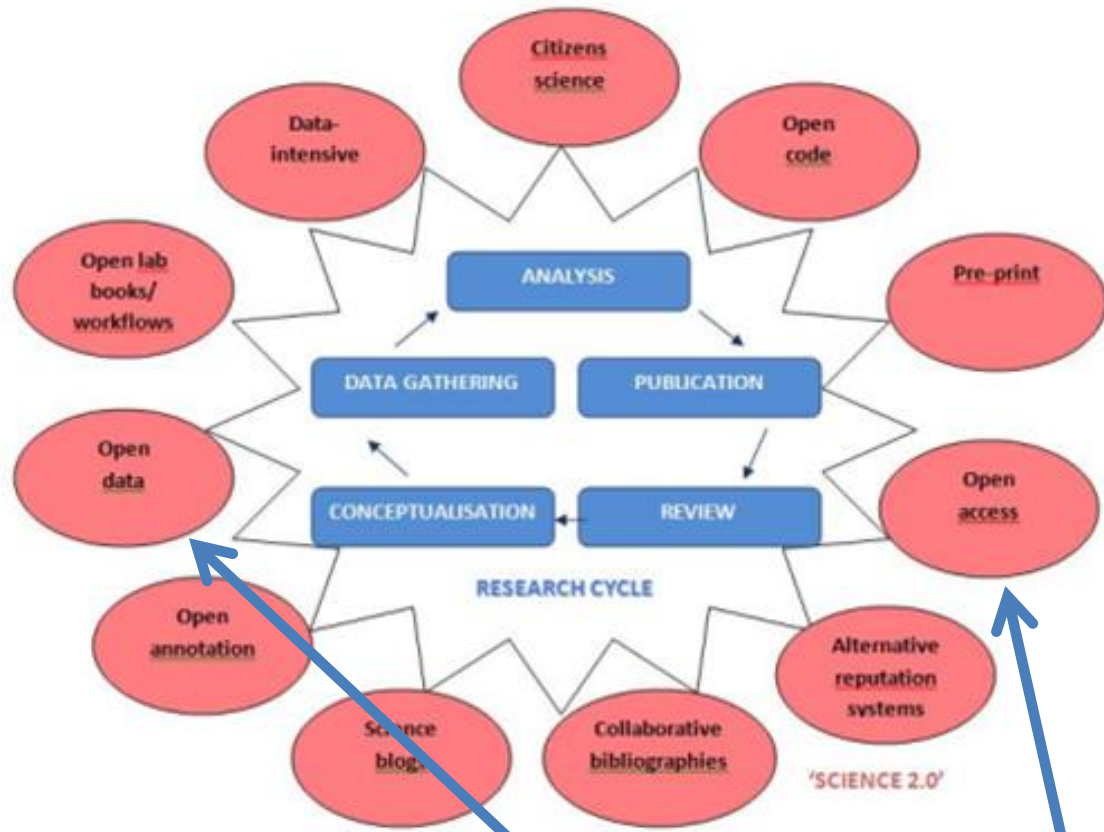
- European Open Science Agenda 2015

    **Remove Barriers, Foster OS, Align Policies,**

    **Develop Infrastructures, Embed OS in Society**

- Council Conclusions on Open Science 2016
    – Amsterdam Call for Action on Open Science
    – EC Open Science Policy Platform

# Open Science



- Focus on Data and Publications

# Why Open Science

- ## As a Principle
  - Results of publicly funded research should be available
- ## Science and innovation are foundations for economic recovery, sustainable growth and jobs
  - Open science is a means to **improve connectivity** so as to be able to exchange knowledge more rapidly
    - For the benefit of science
    - Better interaction with Society & Economy
    - Improve on Integrity and Trust (and reproducablity)
- ## Technically possible (IT/Internet)

*Just suppose we could create a level-playing field for science and scientists where sharing instead of owning would be the basic principle*

# Barriers for Re-use of Research Data

- Lack of
  - Organisation
  - Clarity of responsibilities
  - Clarity on ownership
  - Sustainable business models for Data Services
  - Interoperability among countries and disciplines
- Different cultures for sharing data by disciplines
  - Absence of systematic reward and recognition mechanisms
- Complexity of data
  - Living/Dynamic Data
  - Analysing Data requires knowledge and software

# What is Open Access?

- Readers have access to publications free of financial and legal barriers
- Different Models
  - Gold: author (or institution) pay Article Processing Charges (APC's), the article is freely available
  - Green: deposit a version of the article in a repository
    There can be time lag on the publisher version
  - Institutional models
    - institutions/libraries pay the cost of running a journal, e.g. Scielo in South America, or eLIFE journal
    - overlay journals: select papers from ARCHIV, BIO-ARCHIV, …
- Major challenge: fair pricing and switch the system without double dipping, i.e. NOT
  - pay for access to subscriptions AND
  - pay APC's for making articles free to read

# Barriers for Open Access to Publications

- Multiple Stakeholder Problem
  - Researchers, universities & libraries, funders, publishers, governments, and new users (!)
  - First mover disadvantages
- Vendor lock-in
  - Big deals *(1 price for all journals of a publisher)* puts high marginal costs on quitting one journal
  - Role of Journal Impact Factor in rankings and scientific careers → adapt the assessment & reward systems
- Lack of information on current costs → monitor
- Misunderstanding
  - What Open Access is about      (Peter Suber @ Harvard)
  - Change implies double costs, lower quality, hampers careers, etc.

# Why is the Toll Access model not sustainable?

- Pricing
- Time lag (& growing importance of pre-publications)
- Selection mechanisms that induce 'publication bias'
- Need for new analysing tools (text & data mining)
- Trend that people won't pay for content anymore
- Repositories
- Sci-Hub: 5 Million downloads per month
  Not legal → not sustainable, but a pathfinder?

# R&I in a digital world

- Information becomes its own production factor

  (Yochai Benkler, the wealth of information)

- Info can be shared & re-used endlessly

  Digital copy and distribution at almost zero costs

- It's not about the content, it's about finding the relevant information

- Time to develop and innovate will become shorter and shorter

# 2. Dutch Presidency of the European Council

## Priorities

– Infrastructures and KP7

– Research and Innovation friendly regulation

– Open Science

Relate to European Research Area, Innovation Union and Digital Single Market

# Evaluation KP7 & ESRFI Road Map

- New Road Map ESFRI (March 2016)
  - Combined with EGI (European Grid Initiative)
- Council Conclusions
  - Recommendations for future EU Framework Programmes
  - Importance of Research Infrastructures

# Evaluation KP7 & ESRFI Road Map

- Recommendations for future EU RDI Framework Programmes
  - **cooperation, excellence and impact** are fundamental principles
  - **connect science and society**
  - **balance between curiosity-driven and mission-oriented R&I**

  - **simplification** (of procedures)
  - **measure, monitor and report effectiveness of investments in R&I**
  - **synergies and alignment** between different EU policies, programmes and funding mechanisms
  - **increase the leverage effect of public R&D spending**

  - further speed up the support to processes of bringing innovations to market and society
  - Europe could benefit from networks being open to other participants (including newcomers)

# R&I friendly regulation

- Informal meeting of R&I ministers
  - Key notes by Bill Gates, industry, innovators
- Council Conclusions
  - Remove barriers
  - Apply the 'Innovation Principle'
  - Room for experimentation
  - Increase Europe's attractiveness for startup founders
  - European startup visa scheme
  - Innovation Deals

# Innovation deals

- Speed holds the key to an innovative society

- Innovation Deals will allow innovators to swiftly address legislative obstacles, shortening the time between moment of inspiration and market uptake.

- Innovation Deals take the form of voluntary cooperation between the EU, innovators, and national, regional and local authorities.

# R&I friendly regulation

- Council Conclusions
  - Unnecessary legal barriers, non-supportive, unclear or unpredictable regulatory frameworks, shortcomings in implementation and regulatory gaps are *inter alia* the bottlenecks hampering research and innovation within the EU
  - When considering, developing or updating EU policy or regulatory measures, the 'Innovation Principle' should be applied
  - in view of rapid technological developments, increasing digital possibilities and new business models, to explore room for experimentation under existing legislation in order to speed up scaling-up innovative solutions
  - Implement a pilot for the envisaged tool of 'Innovation Deals'
  - increase Europe's attractiveness for startup founders
  - explore how a European startup visa scheme would be of added value

# 3. Open Science: from Vision to Action

Milestones

- ERAC Taskforce on Research Data

- Presidency Conference: Call for Action

- Council Conclusions:
  - set targets
  - EC established OS Policy Platform

- Numerous side conferences
  - Associated events

# ERAC TF on Optimal Reuse of Research Data

**TRAINING OF STAKEHOLDERS AND AWARENESS RAISING**

1. Promote a better understanding of open research data through communication & awareness raising
2. Establish training and education programs on Open Science
3. Establish a reward system for data sharing activities
4. Ensure sound monitoring

**DATA QUALITY AND MANAGEMENT**

5. Make data identifiable and citable
6. Promote metadata standardisation and production of metadata
7. Promote innovative models for (open) peer-review and processes of quality assurance
8. Strongly promote the use of data management plans

**SUSTAINABILITY AND FUNDING**

9. Ensure the existence of FAIR open research data infrastructures
10. Ensure sufficient funding for open research data and for data sharing activities .

**LEGAL ISSUES**

11. Make IPR issues insightful

# Presidency Conference

- Preparation
  - National project team with all stakeholders
  - Seek international support, especially at political level
    - UK+NL non-paper to MS
    - Visiting like-minded (and non l-m) countries
  - Brainstorm & Preparatory Meetings with experts
- 1$^{st}$ day on policy
  - Bring in the high-levels – but structure the event (pitches)
- 2$^{nd}$ day: parallel working sessions
  - Concept of Amsterdam Call for Action on Open Science

"Countless initiatives have been developed during recent years, policies are not aligned, and expertise can be shared more and better.

There is a strong need for cooperation, common targets, real change, and stocktaking on a regular basis for a speedy transition towards open science."

# Call for Action: set goals

Two important pan-European goals

for 2020:

1. Full open access for all scientific publications

2. A fundamentally new approach towards optimal reuse of research data

Flanking policy

3. New assessment, reward and evaluation systems

4. Alignment of policies and exchange of best practices

**Amsterdam Call for Action on Open Science**

EU
2016

**Removing barriers to open science**
1. Change assessment, evaluation and reward systems in science
2. Facilitate text and data mining of content
3. Improve insight into IPR and issues such as privacy
4. Create transparency on the costs and conditions of academic communication

**Developing research infrastructures**
5. Introduce FAIR and secure data principles
6. Set up common e-infrastructures

**Fostering and creating incentives for open science**
7. Adopt open access principles
8. Stimulate new publishing models for knowledge transfer
9. Stimulate evidence-based research on innovations in open science

**Mainstreaming and further promoting open science policies**
10. Develop, implement, monitor and refine open access plans

**Stimulating and embedding open science in science and society**
11. Involve researchers and new users in open science
12. Encourage stakeholders to share expertise and information on open science

# 5. Introduce FAIR and secure data principles

## The problem

Research outputs generated with public funding should be accessible for reuse. In the scientific process, many different kinds of output are generated, depending on the scientific discipline, the sources of data and the type of analyses that researchers perform. For sharing and reusing data in the open science environment, it is important to provide clarity about the quality of the data offered and to have effective agreements in place for better reuse of data. If data is to be archived and made suitable for reuse, it must be clear to third parties how the data is structured and what information it contains.

## The solution

- Develop Principles & Guidelines for Data Management Plans and data stewardship.
- Create optimal conditions for sharing research output by introducing a quality hallmark for the FAIR principles, data, and data management requirements: research output should be Findable, Accessible, Interoperable and Reusable.

## Concrete actions

- **National authorities and the European Commission:** state that research output produced with public funding should, in principle, be accessible for reuse. Promote the FAIR principles. Provide for a bottom-up and discipline-based approach and elaboration.

- **National authorities and Research Performing Organisations:** put in place an institutional data policy which clarifies institutional roles and responsibilities for research data management and data stewardship.

- **Research funders:** implement Data Management Plans (DMPs) as an integral part of the research process, make them a precondition for funding, standardise them and make the costs incurred eligible for funding.

- **Research funders:** introduce positive incentives for FAIR data sharing by valuing data stewardship and efforts to make data available and by acknowledging and rewarding those who compile the data. Require data to be cited according to international standards. Encourage the sharing of expertise that enables disciplines/regions to learn from each other.

- **Research funders:** set the default in data sharing to open access, but allow a choice of access regimes: from open and free downloads to application and registration-based access. Conditions can be dependent on the nature of the data, common practice within a specific academic discipline, legal (privacy) frameworks, and legitimate interests of the parties involved.

- **National authorities and research funders:** educate data stewardship experts, recognise their profession and provide them with career opportunities. They will act as a bridge between IT and science.

## Expected positive effects

- Increased quality of research;
- Better adherence to the principles of good scientific research and conduct to foster research integrity;
- Increased impact of publicly funded research;
- Secure sharing and reuse of research outputs, which will foster science and innovation.

# What's next?

- **Common goals**
- **Inclusive approach**
- **Alignment and concerted actions**

- **Open Science Policy Platform**
  - Mandate to elaborate the European Open Science Agenda
  - Promote uptake of agreed best policy practices

  Stakeholder driven, but will connect with Member States

  (via ERA Working Groups, via Competiveness Councils, …)

# 4. Lessons learned

NEVER GIVE UP

- Seek support
  - Inclusive approach
    - all stakeholders
    - work on common language AND mutual trust
  - International: EU, Americas, Asian-Pacific, Africa
  - Join forces:
    - NL: coordination by politics, universities, funders was effective in realising new agreements with publishers

- Set goals – and be ambitious!
  - Stay focused

    Progress requires focus on long term goal and will consist of many small steps (and quite some dynamics)
  - Monitor progress

# THANK YOU

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Supporting the
Open Science Policy Platform