Winning Horizon 2020 with Open Science

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Open Science

Open Access
Open Research
Open Data
Open Notebook Science
Citizen Science
IDEA
TEST
DATA
MODEL
CODE
PUBLISH
EDUCATE & TRAIN

RESEARCH LIFECYCLE

Peer-review
Impact Factor (IF)

“Research Cycle” adapted from Tenopir et al., (2011) doi:10.1371/journal.pone.0021101
http://www.plosone.org/article/info:doi/10.1371/journal.pone.0021101
"Focus on Impact (Factor) distorts what matters in science"

Dr. Alan Leshner,
CEO AAAS & Publisher of "Science" journal

#esof2014 pic.twitter.com/M9D0rVtggl
24/06/2014 16:53
Useful Research

Publishable

Accessible

Credibility?

Source: michaelnielsen.org
60% of UCL-published research was easily accessible

Source: Paul Ayres, Senior Manager, University College London, Library & Information Services (pers. comm.)

around 50% of scientific papers published in 2011 now available for free


... and the rest?
"If we wait 5 years for (Arctic) data to be released, the Arctic is going to be a very different place"

Bryn Nelson, Nature 10 Sept 2009

http://www.nature.com/nature/journal/v461/n7261/index.html
Open Science can Multiply Serendipity in research …
Jim Hansen’s collaborator at NASA GISS, Dr Ruedy says:

“I hope to switch to your version.”

Source: Grigorov 2011, ”Should Citizen Scientists play with Climate & Ecosystem Moldes?”,
European Geoscience Union Newsletter
Why Open Science?

- greater visibility and impact for authors & projects
- makes research networked & interconnected
- networked research generates serendipity by default
- Speeds up innovation & discovery, takes ideas to the market & solutions to societal challenges
- Directly contributes to ECONOMIC GROWTH !!!
What is the Horizon 2020 mandate?

Grant Agreement Article 29.1-6

Grant Agreement Article 29.1–6

“Each beneficiary must ensure open access to all peer-reviewed scientific publications”

“deposit research data … to make it possible for third parties to access, mine, exploit, reproduce and disseminate, free of charge”

Winning Horizon 2020 with Open Science?
Dealing with the proposal template

1. Excellence:
   - Objectives
   - Relevance to WorkProgram
   - Concept & Approach
   - Ambition
   min 3/5 POINTS

2. Impact:
   - Expected impact to WorkProgram
   - Maximise Impact (Open Access & Open Data)
   min 3/5 POINTS

3. Implementation:
   - Workplan & Management
   - Consortium & Resources
   min 3/5 POINTS

Winning Horizon 2020 with Open Science?

Dealing with the proposal template

2. IMPACT (min 3/5 points):
   2.1 Expected impact to WorkProgram
       - expected impacts set out in the work programme
       - delivering innovations to the markets
       - socially important impacts

2.2 Maximise Impact (Open Access & Open Data)
   - plan for results dissemination and exploitation
   - research data management for verification & re-use
   - knowledge strategy management & Open Access

How to “write” 
#OpenScience 
In your proposal ?

No need to re-invent the wheel.

The Project consortium acknowledges that the research and new knowledge generated is of societal benefit, and could potentially contribute towards solutions of societal challenges. As such, the foreground knowledge needs to be disseminated in an optimum way for impact and re-use of results, according to Responsible Research & Innovation (RRI) principles.

Currently only 50% of research is freely accessible to the public, resulting in a measurable loss to the knowledge-based SME sector and slowing down innovation. The Project consortium will thus optimize on the dissemination and impact of foreground along the full knowledge production chain, and integrate Open Science principles in its Dissemination & Communication Strategy.

In support of the EC Digital Agenda and the Economic Growth agenda of the Innovation Union (Green Action Plan), the consortium will ensure that Grant Agreements include a work plan at task level. Foreground data (state diversity of data generated) will be permanently archived at generation in STATE REPOSITORY, and then released and/or published (with the exception of third party data, national security data, medical/patient data) during the lifetime of the project.

Software code, tools and interfaces developed as part of the project will be open source code and full access provided via STATE REPOSITORY. Resulting research publications (refer to WP3/WP most likely to publish) will also be made openly available via e-Infrastructure OpenAIRE (DG CONNECT, request letters of support), predominantly relying on the Green Open Access strategy (self-archiving) for maximum return on investment for project and funder, and aided linked to underlying data objects, in support of the EC Open Data Pilot.

For longevity of knowledge transfer and best practice uptake beyond the project lifetime, The Project will cooperate with concurrent training initiatives within FP7 FOSTER (DG Research) and OpenAIRE-, and incorporate Open Science training in any summers schools and research training workshops, in order that the strategy is adopted by the next generation of young researchers (refer to WP4/Task dealing with this).

Focus will be placed on demonstrating that Open Science and RRI are not only for societal and community benefit, but also directly support the career needs for impact, visibility and multiplying collaborations for individual researchers. Allowing the societal and research impact of knowledge generation can in the long-term bridge the gap between science and society.

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4 EC Digital Agenda & Access to Knowledge http://ec.europa.eu/digital-agenda/en/access-access-scientific-knowledge
digital-agenda.pdf
6 Choose a discipline-specific personal Data Repository from http://www.re3data.org/
7 Choose a discipline-specific personal Data Repository from http://www.re3data.org/
8 Choose a Data Archive of relevance e.g. Nature Scientific Data, or reach http://data.gov.uk
9 No embargo can be placed to allow project to publish/eXtend first, but consortium should aim for full release by end of contract, or justify why access needs to be continued (publications may not be viewed favourably at review).
10 Choose a structured archive with minimum metadata requirements to allow maximum re-use e.g. Guare, trace-europe.eu.
11 EC FP7 and Horizon2020 Funded e-Infrastructure https://www.openaire.eu is support of EC Digital Agenda
13 FP7 FOSTER, Facilitating Open Science in European Research (www.fostereopen science.eu)

www.fostereopen science.eu www.openaire.eu

Bored yet
Does #OpenScience matter at proposal evaluation?

Based on: Winning Horizon 2020 with Open Science,
http://dx.doi.org/10.5281/zenodo.12247
“Weakness: Involvement of non-academic beneficiaries is limited”

Impact

“Weakness: highly focused on academic activities, and lacks an advanced communication strategy”

“data accessibility is unclear!”

Implementation

“Weakness: limited exposure to non-academic partners & infrastructures”

“data storage & access not considered”

Source: Horizon2020, Marie Curie ETN Evaluation Process, 2014
Impact:

“Strengths: extensive dissemination of data to the scientific community (open access, databases)”

“outreach activities to a broad audience”

“research software is freely available”

Source: Horizon2020, Marie Curie ETN Evaluation Process, Spring 2015
Does #OpenScience contribute to economic Growth?

More open data for more users …

40+
Number of countries with government open data platforms*

90,000+
Data sets on data.gov (US site)*

Open data: Unlocking innovation and performance with liquid information | McKinsey & Company.
... can lead to more value

$3 trillion

Approximate potential annual value enabled by open data in seven “domains”
Does #OpenScience contribute to Economic Growth?

19% of the processes developed would have been delayed or abandoned without access to research.

A 2.2 years delay would cost around EUR 5 million per firm in lost sales.

OS key part of concept

IDEA & PROPOSAL

TEST

DATA

MODEL

CODE

re3data, OpenAIRE

GitHub, DOI

Gold & Green OA

Impact Factor (IF)

Societal Impact

CO-CREATION

Open Notebook Science

EDUCATE & TRAIN

PUBLISH

Open Educational Resources

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http://www.plosone.org/article/info:doi/10.1371/journal.pone.0021101
Good Luck with Horizon 2020!

Join the Open Science experiment at www.fosteropenscience.eu

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#fosteropenscience

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slideshare.net/ivogrigorov/winning-proposals-with-open-science