From Moedas 3O's strategy to Horizon Europe: the growing attention towards open science

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The road to open science in EU

From Moedas 3O’s strategy to Horizon Europe
Results - 2015-2018

Project results published open access:
• 1231 articles
• 71 monographs
• 18 book chapters
• 2 conference proceedings

Total EU funding for open access: nearly 2MLN EUR


From Moedas 3O’s strategy to Horizon Europe
2015 - Carlos Moedas

‘A new start for Europe: Opening up to an ERA of Innovation’

With Horizon 2020, we are funding research on an unprecedented scale. But we must be honest about the challenges we face. I see three major challenges:

1. **We are too rarely succeeding in getting research results to market.** Technologies developed in Europe are most of the time commercialised elsewhere.

2. Although Europe generates more scientific output than any other region in the world, in some areas we fall behind on the very best science. At the same time, there is a revolution happening in the way science works. **Every part of the scientific method is becoming an open, collaborative and participative process.**

3. Europe punches below its weight in international science and science diplomacy. **Our collective scientific importance should be matched by a more active voice in global debates.**

So, **In order to overcome these three challenges I see three strategic priorities:**

**Open Innovation,**

**Open Science,** and

**Openness to the World.**
Open science in Horizon 2020

- **FAIR**: findable, accessible, interoperable and reusable

- Three strategic priorities:
  - Open Innovation
  - Open Science
  - Openness to the World

*(Carlos Moedas, former Commissioner for Research, Science and Innovation)*
Open science in Horizon 2020

- **Aim of Open Science policy:**
  - Build on previous research results
  - Greater efficiency (encourage collaboration)
  - Speed up innovation (faster progress to market means faster growth)
  - Involve citizens and society (improved transparency of the scientific process)

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Horizon 2020: Open access becomes mandatory

• Grant Agreement (art. 29.2):

“[Beneficiaries] ensure open access… as soon as possible and at the latest on publication, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications together with bibliographic metadata providing the name of the action, acronym & grant number”

From Moedas 30’s strategy to Horizon Europe
Personal experience: A “quantum case” of Open Science

- On November 30th, 2016, more than 100,000 people around the world contributed to a suite of first-of-a-kind quantum physics experiments known as The BIG Bell Test.
The BIG Bell Test

- Using smartphones and other internet-connected devices, participants contributed unpredictable bits, which determined how entangled atoms, photons, and superconducting devices were measured in twelve laboratories around the world.

- “Challenging local realism with human choices”

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The BIG Bell Test

15 Collaborating laboratories:
- Buenos Aires (Argentina)
- Brisbane (Queensland, Australia)
- Vienna (Austria)
- Natal (Brazil)
- Concepción (Chile)
- Beijing, Changsha, Nanjing and Shanghai (China)
- Nice (France)
- Garching and Munich (Germany),
- Roma (Italy)
- Barcelona and Seville (Spain),
- Linköping (Sweden)
- Zurich (Switzerland)
- Boulder (CO, USA)

From Moedas 3O’s strategy to Horizon Europe
The BIG Bell Test

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Horizon Europe fully embraced open science

“Open science” means an approach to the scientific process based on open cooperative work, tools and diffusing knowledge

(Horizon Europe Regulation and Model Grant Agreement)

The concepts of Open Science, Open Innovation, Open to the World should ensure excellence and impact of the Union’s investment in research and innovation, while safeguarding the Union’s interests

(Recital 7 Horizon Europe Regulation)

The work programme may provide for additional incentives or obligations for the purpose of adhering to open science practices

(Horizon Europe Regulation, article 39)
Horizon Europe Open Science practices

Based on FAIR principle

• early and open sharing of research (for example through preregistration, registered reports, pre-prints, or crowd-sourcing)

• research output management including research data management

• measures to ensure reproducibility of research outputs

• providing open access to research outputs (e.g. publications, data, software, models, algorithms, and workflows) through deposition in trusted repositories

• participation in open peer-review

• involving all relevant knowledge actors including citizens, civil society and end users in the co-creation of R&I agendas and contents (such as citizen science)
Thank you!

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