



European Open Science STI Policy

The role of Research Infrastructures in translating open science to open innovation

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Open Science

Cooperative work and new ways of diffusing knowledge by using digital technologies and new collaborative tools.

Sharing and using all available knowledge at an earlier stage in the research process.

Open Innovation

.....the outcome of a complex co-creation process involving knowledge flows across the entire economic and social environment.



How EC supports the translation from open science to open innovation ?

Horizon 2020 Interim Evaluation Results

Key findings on the progress towards achieving innovation and economic impact

- Creation of **networks** between business, academia and research organizations
- **Access to risk finance** for industries and SMEs
- Innovative instruments (**procurement and prizes**)
- Creation of **patents** and **trademarks**
- Support for **proofs of concept** and **demonstrators** actions
- Creation of **innovation outputs** (new technologies, products, services)



What is the role of Research Infrastructures in translating open science to open innovation ?

Research infrastructures (RI)

promote excellence in highly-demanding fields and enable the greatest **discoveries** in science and technology.

RI fulfil their mission by offering **access** to extensive data and excellent resources which are not available elsewhere.

The access promotes **competitive research** at the international level and **research outputs** which can be exploitable in **industry** or for **social purposes**.

Translation of Open Science to Open Innovation

Policy

Research infrastructures provide a large amount of data on several domains (medicine, health, life-science, physics, SSH, energy, environment, etc.) Policy-makers, scientists and other stakeholders use them to **develop new strategies for the growth of a sustainable economy and society.**

Industry

Industrial partners in RI projects are maximum 10-15 %

Other forms of participation:

- **Industry as user**
 - access and use of world-class facilities
- **Industry as supplier**
 - provision of technological advances



The ESFRI Innovation Working Group

Objective:

Improve the **relations between Research Infrastructures and Industry** and promote the **RI potential for innovation**

Main recommendations [1]

- Support the **Industrial Liaison Officers**
- Develop a transparent **data management policy**
- Anticipate the foresight **of large equipment** in European RIs.
- Support the **pre-development of highly innovative components**
- Develop the **co-innovation** between RIs and industrial companies
- Promote the development of **local or regional ecosystems**

[1] Working Group on Innovation, Report to ESFRI - March 2016



Consultation on the Long-term sustainability of Research Infrastructures

Survey results on

"Unlocking the innovation potential of the RIs"

- Support the development of **innovation ecosystems** around RI
- Develop mechanisms to facilitate **knowledge and technology transfer** and to facilitate the use of RI services by Industry
- Increase **RIs engagement with industry**
- Stimulate **large scale initiatives** involving industry, RI and academia in a **co-creation process**;
- Develop **roadmaps in key technologies** for the construction and upgrades of the pan European RI in synergy with EIT, KICs, FETs and KETs

Source: Report on the Consultation on Long Term Sustainability of Research Infrastructures
http://www.test.ec.europa.eu/research/infrastructures/index_en.cfm?pg=sustainability

How the EC support the RI in translating Open Science to Open innovation?

Horizon 2020 RI *Specific Programme*

Developing research infrastructures for Open Science:

- ✓ to improve data storage, access and governance, develop a common framework for research data including a **European Open Science Cloud**

Stimulating innovation both in the RIs themselves and in their supplier and user industries:

- ✓ **R&D partnerships with industries** to develop Union capacities in high-tech areas such as scientific instrumentation
- ✓ **pre-commercial procurement** by RI actors
- ✓ stimulate the **use of RIs** by industry
- ✓ Encourage the **integration of RIs** into local, regional and global innovation ecosystems

Research Infrastructures in Horizon 2020

Mainstreaming of innovation in all actions

➤ **Integrating Activities**

- cooperation with Industry in every proposal
 - transfer of knowledge and other dissemination activities
 - use of research infrastructures by industrial researchers
 - involvement of industrial associations in consortia or in advisory bodies
- Support action for **procurement** (PCP/PPI scheme)
- Support to **Technological Infrastructures**
- Fostering **co-innovation** between RIs and industry



Research Infrastructures in Horizon 2020

One of the objectives of the Integrating Activities (INFRAIA) Call is to address ***innovation capacity*** → *technology transfer*
→ *participation of SMEs*
→ *instrumentation development*

Specific actions for innovation:

- INFRASUPP Call → innovation and R&D partnership between RIs and industry fostered through the **pre-commercial procurement scheme** (Ex: QUACO Project)
- INFRAINNOV Call
 - Support to **Technological Infrastructures** (Ex: AMICI Project)
 - **Fostering co-innovation** for future detection and imaging technologies (evaluation on going)

WHAT IS QUACO

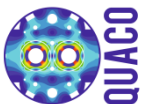
QUACO is a Pre-Commercial Procurement project for the purchase of a new generation of **magnets** to **upgrade the Large Hadron Collider**

The QUACO business opportunity was not attractive for large companies → **need to involve new players and especially SMEs**

The PCP instrument allows to **share the technical risk**, to **grade the financial commitment** and to **combine the strengths and expertise** from various countries and sector

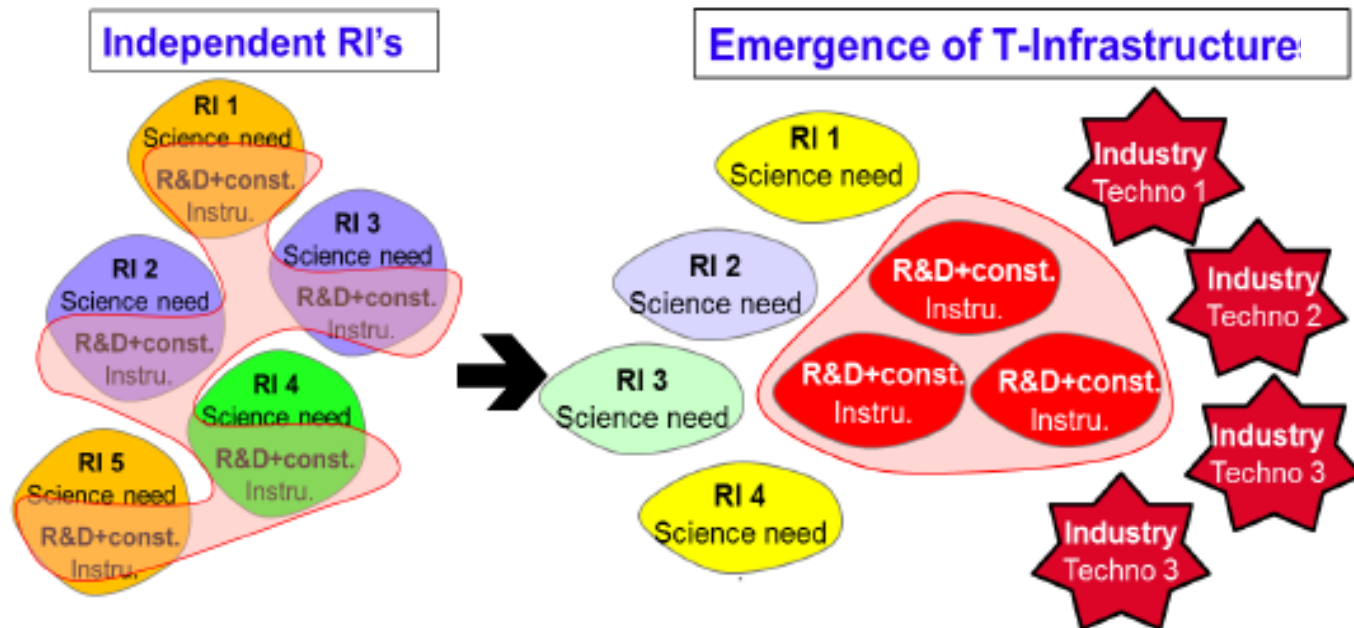
4.000 pageviews for the Horizon's article

Physicists accelerate plans for a new Large Hadron Collider three times as big
and much more from other worldwide media (Daily Mail, Daily Express, International Business Times, etc.)



Accelerator and Magnet Infrastructure

AMICI is a Technological Infrastructure of RI and industries for the design, construction and validation of **accelerators and large superconducting magnets**



AMICI enables the creation of new applications for the direct benefit of the society

Thank you for your attention

HORIZON 2020

