Industry as a user of Research Infrastructures Recommendations of ESFRI (Working Group on Innovation)

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ESFRI European Strategy Forum on Research Infrastructures

- Launched in 2002 by the Council of Min. of the EU
- Brings together representatives of the Ministers of Research of the 28 MS, 13 Assoc. States and the EC
- Additional mandates of the Council: 2004/2007/2012

ESFRI is a strategic instrument to develop the scientific integration of Europe and to strengthen its international outreach

Mission

- To support a coherent and strategy-led approach to policy making on Research Infrastructures (RIs) in Europe
- To facilitate multilateral initiatives leading to the better use and development of RIs, at EU and international level
- To establish a European Roadmap for RIs (new and major upgrades, pan-European interest) for the coming 10-20 years, stimulate the implementation of these facilities, update the Roadmap as the need arises
- To ensure the follow-up of implementation of already on-going ESFRI projects after a comprehensive assessment as well as the prioritisation of the projects listed in the ESFRI roadmap

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Innovation Working Group

- Set-up by ESFRI in 2013
- Final report completed in December 2015
- Recommendations adopted by the Forum in March 2016

http://www.esfri.eu/esfri-publications-0

Rationale / Policy context

- RIs are a key instrument in bringing together researchers, funding agencies, policy makers and industry to act together
- RIs contribute to making *Europe 2020 Strategy* and its *Innovation Union Flagship Initiative* a reality
- Moreover, RIs should:
  - contribute to realise the potential of the regions;
  - increase their international cooperation;
  - continue their opening to, and partnership with, industrial researchers and industry / services to help to address societal challenges and to support EU competitiveness.

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Mission: *contribute to the development of a strategy aimed to strengthen and improve the relations between RIs and Industry and to promote the potential for innovation of RIs in all its aspects*

Objectives

- To identify and promote the innovation and industrial capabilities of the RIs on the ESFRI Roadmap
- To strengthen the cooperation of pan-European RIs with industry
- ***To promote the access of industrial users to the RIs***

Specific tasks

- To propose solutions to the problems of dissatisfying RI-industry interactions (especially with industrial suppliers)
- ***To explore the major obstacles for enterprises to use publicly owned RIs, and identify the specific requirements for hosting industry users***

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Report of the Innovation Working Group (2016)

Introduction | RIs in the innovation chain | Industry as a supplier | *Industry as a user* | *Improving awareness raising, mutual understanding & collaborative schemes to promote a new innovation culture* | Socio-economic impact of RIs | *Conclusions and recommendations*

Industry as a user (downstream business model)

- Various types of access to RIs
- Quality chart on access
- Remote control access and virtual use of the facility
- Knowledge Transfer
- Open innovation & co-creation
- Specific services tailored for industry and training
- Protection of the innovation results
- Data policies and infrastructures

Improving awareness raising, mutual understanding and collaborative schemes to promote a new innovation culture

- Improving mutual knowledge and cooperation: the role of intermediaries
- Industrial Liaison Officers
- The example of the analytical facilities
- New collaborative networks for co-innovation
- Could the ERIC framework be a barrier to RI-Industry cooperation?

+ Current practices of the ESFRI Landmarks

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Innovation Working Group (2016)

Main conclusions related to "Industry as a user"

"Improving the relations between RIs and Industry and promoting the potential for innovation of RIs in all its aspects"

- A change of culture is needed
- Raising awareness on RI opportunities and services
- Crucial role of intermediaries
- Developing partnerships and ecosystems of innovation
- Training and mobility
- Data: access, use and re-use are key to innovation
- Social, societal, environmental and public sector dimensions of innovation

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CONCLUSIONS of the Innovation Working Group (2016)

A change of culture *is needed in both RIs and industry. All stakeholders should be better informed on, and more aware of, the existing potential for cooperation. Industry should become more RI oriented and RIs more business oriented*

- Raising awareness ***on RI opportunities and services*** and on RIs' socio-economic impact is needed in all directions. New initiatives should be taken to increase the attractiveness of RIs for industry
- The role of ***professional intermediaries (e.g. ILOs),*** of ***independent Industry Advisory Boards*** and of specifically ***dedicated cooperation mechanisms and tools*** is absolutely essential
- ***Dissemination and stimulation actions*** should be carried out in close connection with sectorial industrial organisations and RTOs/IReCs, with the support of the EU

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CONCLUSIONS of the Innovation Working Group (2016)

The concept of industry as a full partner (both as a supplier and as a user) should be proactively put in practice

- In order to move from the paradigm of technology transfer (TT) to the paradigm of knowledge transfer (KT), ***training of a new generation of engineers in industry*** more aware of science and RIs, as well as ***training of a new generation of researchers, more receptive to IPR issues and of industry needs***, including ***mobility from academia to industry***, are two essential blocks
- This implies also to promote more extensive partnerships on ***joint R&D projects and cooperative programmes***

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CONCLUSIONS of the Innovation Working Group (2016)

Developing new ecosystems of innovation around RIs

- RIs can offer industrial companies to be immersed in active ecosystems of innovation based on their complementary broad range of competences and skills
- Such an environment makes more likely to ***grow a unique ecosystem around RIs well suited for innovation*** where research teams, small high-tech enterprises, spin-off and start-up companies, detached labs of big companies, TTOs and ILOs staffs all together exploit the "***business at walking distance***" advantage in working together on common issues in the same place

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CONCLUSIONS of the Innovation Working Group (2016)

Access to, use and re-use of data

- Research data represents ***significant financial assets and business opportunities***. It is too often still unclear how and on what conditions actors outside academia, especially commercial actors, can use such data due to IP and privacy issues
- Re-use of data, away from its initial purpose, demonstrates the innovative opportunities that access / curation of data can achieve
- Raising awareness of this opportunity with industry and developing ***transparent data management policies, including pricing policies*** if appropriate, should be considered as a key focus that can reap rewards for all involved

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CONCLUSIONS of the Innovation Working Group (2016)

Social, societal, environmental and public sector dimensions of innovation

- RIs serve S&T but also policy-making and society. Most of them were built for their mixed scientific and societal impact, providing new knowledge, data and services to increase the security, well-being and prosperity of a society faced with a series of Grand Challenges
- The social, societal, ecological and public sector dimensions of innovation are particularly important in the Environmental, Health and Food and Social Sciences and Humanities sectors (and also for Analytical facilities)
- Increasing the RI industrial cooperation is also important in this context, for both society and the economy

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Innovation Working Group (2016)

Main recommendations related to "Industry as a user"

"Improving the relations between RIs and Industry and promoting the potential for innovation of RIs in all its aspects"

- Industrial Liaison Officers / Industry Advisory Boards
- Quality Chart on access / Remote control access and virtual use / Programme-based access
- Specific support and services dedicated to industry
- Dedicated funding streams for KT and TT, training and mobility
- Promotion of innovation ecosystems
- Industry- and innovation-friendly data policies
- Efficient IPR policies / Appropriate managerial tools

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RECOMMENDATIONS of the Innovation Working Group (2016)

RIs and Funding Agencies (incl. the EU) to raise awareness and improve information dissemination

- Support the installation of ***Industrial Liaison Officers*** in RIs and RI funding agencies and promote their cooperation at European level. Their tasks and position in the RIs should be clearly specified
- Promote the creation of ***Industry Advisory Boards*** (as independent bodies or linked to the science advisory bodies whenever appropriate); composed of external experts from the various relevant industry and commercial sectors they should provide high level strategic advice in order to improve added value to industrial users-suppliers-partners
- Raise ***awareness on RI access and services for industry*** with a European portal where the full range of access modes and collaborative regimes for industry would be highlighted, including information on prices and IPR conditions

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RECOMMENDATIONS of the Innovation Working Group (2016)

Improving industrial access

- RIs to establish a ***Quality Chart on access*** which would ensure a standard of quality and meet the expectations of the users
- RIs to develop ***remote control access and virtual use*** of the facilities
- Promote ***programme-based access open to long-term projects*** funded by research agencies, regional competitiveness clusters and/or private companies as an intermediate access mode between the strict scientific merit-based access and proprietary access

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RECOMMENDATIONS of the Innovation Working Group (2016)

RIs to develop business-oriented activities and services

- Develop more business-oriented activities, including ***specific support and services dedicated to industry***, promote the skills of assessing, protecting and commercialisation of inventions, and, where appropriate, the installation of a TTO
- Provide companies (including SMEs) with new or more extended ***room near RIs dedicated to pre-competitive research*** programmes, where the possibility to exploit the RIs technological resources is more effective and where scientists and engineers work together in the same place on common objectives (open innovation and co-creation)

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RECOMMENDATIONS of the Innovation Working Group (2016)

RIs and the relevant Authorities to develop industry- and innovation-oriented funding streams, programmes and structures

- Develop ***dedicated funding stream for KT and TT*** at the most appropriate level (regional, national or even European)
- Develop more specifically addressed ***training and mobility*** policies and schemes
- Promote the development of ***local or regional ecosystems*** integrating RIs, T-Infrastructures, Technology and Service Providers, Incubation Facilities and Industrial Users, namely an environment:
  - opening new opportunities for hosting projects with industry;
  - where the added value offered by RIs and their complementarity with industry can be optimized (in scientific campuses, technology parks, etc.)
- Extend the perimeter of the innovation ecosystems to new industrial partnerships, other than spin-offs and start-ups

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RECOMMENDATIONS of the Innovation Working Group (2016)

RIs to implement industry- and innovation-friendly data policies

- In order to fully exploit open science and to optimise interaction with private stakeholders, develop a ***transparent data management policy*** including effective solutions for data traceability, user accountability, provision of metadata, curation, long-term preservation and, ***if appropriate, pricing*** for different services and (commercial) re-use of data
- Develop efforts to ensure research data availability across borders and disciplinary domains, and ***data handling and portability of results*** (which is becoming more and more important in many industrial sectors and needs to be considered in cooperation)

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RECOMMENDATIONS of the Innovation Working Group (2016)

RIs and the relevant Authorities to enhance the regulatory environment and improve the managerial tools

- Improve the ***efficiency of IPR policies*** (develop methodologies rather than models). For example RIs making use on a case by case basis of confidentiality-driven tools such as Non-Disclosure Agreements (NDAs) would definitely improve the efficiency of the RI-Industry collaborations
- Encourage the adoption of ***analytical accountability practices*** for the facility management in order to clarify and facilitate the elaboration of realistic and reliable operation costs. Moreover this would also participate to the identification of hidden costs supported by the researchers' hosting institutes

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Ad hoc WG on Long-Term Sustainability of RIs

Main recommendation 4: "Fully exploit the

See: report adopted in June 2017 and published in October 2017
[http://www.esfri.eu/sites/default/files/u4/ESFRI_SCRIPTA_VOL2_web.pdf]

4.1. European and National Authorities should encourage the development of innovation ecosystems around RIs and stimulate innovation-oriented activities within RIs

4.2. National Authorities, RIs, RPOs and Business & Industry should facilitate procedures for RIs to become partners in the development and commercialization of innovations (…)

4.3. National Authorities should work with RIs, Business & Industry, Public Services and RPOs to develop and co-fund exchange programmes for staff and PhD students to raise mutual awareness by the RIs, RPOs, Public Services and Business & Industry of their needs, opportunities, operations and culture

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4.4. RIs should encourage and support Public Services and Business & Industry to engage with and exploit them more fully by identifying their needs and by tailoring user policies and practices to meet these needs

4.5. RIs and RPOs should establish structures and culture in which (open) innovation is most likely to thrive, including: recruitment of an officer to implement innovation policies (ILO) with dedicated resources, supported by an advisory body composed of representatives of appropriate industries or commercial activities; raising the awareness and incentivising of staff to engage in innovation activities

Thank you for your attention

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