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HUBIT POLICY NOTE

RESPONSIBLE RESEARCH AND
INNOVATION POLICIES: WHAT
TO KNOW





Research and innovation that is reflective and responsive to citizens' needs is at the core of European research and innovation funding philosophy. How is it different from other research and innovation practices? Why is it important? How does it relate to countries' economic competitiveness, and what can we foresee for responsible research and innovation in the future?

These are just some questions taken up by the Horizon 2020 funded HubIT project in the framework of analytical and practical activities. In this brief we would like to present initial results of the policy research and feedback collection during the first events that have taken place so far, and pose some questions for discussion. But first let us take a look at the specific approach of the HubIT project.

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The HubIT approach

HubIT is a cooperation effort focused on making ICT (information and communication technologies) research and innovation more ethical and responsible through strategic collaboration with social sciences and humanities (SSH). The project unites the efforts of 14 partners from 11 countries to advance the application of responsible research and innovation (RRI) actions to better follow the expectations, needs and values of society. The HubIT activities have two dimensions:

tools-development (all tools, including Good Practices Repository, Self-Assessment Tool, Guidelines on Responsible ICT, and many more are available on the project Platform <https://www.hubit-project.eu/>) and **community experimentation** (events).

Based on both these streams of activities, the **HubIT RRI-in-ICT concept** was born (you can get acquainted with it in more detail on our Platform):

“An interdisciplinary approach which aims at aligning both the process and outcomes of ICT research and innovation with the values, needs and expectations of society”

The HubIT project is a result of the European Commission’s strategy to mainstream RRI and SSH in the ICT-related topics of the Horizon 2020 Work Programme 2016-17. Horizon 2020 is the current Framework Programme for

Research and Innovation of the European Commission. **But what is RRI and SSH?**

RRI stands for Responsible Research and Innovation. In brief, it can be understood as an approach which ensures that research and innovation activities are being carried out in a reflective and inclusive way. The aim of RRI is to ensure that research and innovation are undertaken in the public interest. The European Commission has formulated RRI in terms of six policy key areas: Public engagement, open access, gender equality, science education, ethics, and governance.

SSH stands for Social Sciences and Humanities which comprises disciplines like sociology, anthropology, philosophy and linguistics. The European Commission views RRI and SSH as intertwined cross-cutting issues in Horizon 2020. However, according to the Commission, the role of SSH should not be confined to ensuring that RRI is implemented in ICT; SSH should also be recognized as sources and contributors to innovation. But what has our research and interaction with the community showed so far?



Policy Results So Far

How is RRI reflected in EU research and innovation funding rules? Is it mentioned in future framework negotiations (Horizon Europe)?

Already in the introduction to Horizon 2020, Responsible Research and Innovation is conceptualized as a cross-cutting issue; it is mainly linked to SSH and is something that is expected to be present in all work programs (WP). Open research and innovation (R&I) is one part of the strategy of the 3Os (Open innovation, Open science, Open to the world) practiced by the EU; at the same time, it is a much larger concept that calls for radical democratization of science and innovation and active engagement of the public.

The same direction is expected to be present in the next framework program, however, with somewhat different focus. The general foundation of the future program states that it will be based on:

*"... the premise that research and innovation (R&I) delivers on **citizens' priorities**, boosts the Union's **productivity and competitiveness**, and is crucial for **sustaining our socio-economic model and values**, and*

enabling solutions that address challenges in a more systemic way."

It is expected that the program will be built around three pillars:

- Open Science (frontier research initiated by scientists themselves);
- Global Challenges and Industrial Competitiveness (research for societal impact through co-designed missions)
- Open Innovation (market-value generating frontier research)²

When taken as a whole, the current vision of Horizon Europe suggests a marked focus on **building societal support for EU research and innovation through engagement and impact-communication**³. At the same time, substantial emphasis is put on further simplification of the funding rules. In other words, there is a marked dual emphasis on the engagement of society – and encouragement of cutting-edge scientific research. The latter is promoted through the proposed creation of the European Innovation Council (EIC) which will "focus on breakthrough and disruptive innovation, autonomy, ability to take risk, efficiency, effectiveness, transparency and accountability"⁴.

1. Proposal for a DECISION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on establishing the specific programme implementing Horizon Europe – the Framework Programme for Research and Innovation, European Commission, 7.6.2018

2. Summary Budget Proposal for the Next Framework Program from the European Commission (May 2018). Available at: https://ec.europa.eu/commission/sites/beta-political/files/budget-may2018-research-innovation_en.pdf

3. Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, European Commission, 7.6.2018.

4. Ibid



Thus, there is a tension between the need for the EU to remain competitive globally, while also avoiding disconnection of science (research and innovation) from the wider public. The key instruments to achieve that are co-design and co-creation of research agendas with citizens. Only some aspects of RRI (mostly open access and public engagement) are incorporated into the next framework discussions at the moment.

How well is RRI implemented?

The Interim evaluation of Horizon 2020 and consultations with stakeholders gives us the following overview of the RRI acceptance on an EU level.

Firstly, **civil society is not involved in R&I governance** at a satisfactory level⁵¹⁶.

Secondly (and consequently), the **stakeholders and the general public are not convinced that European R&I activities contribute to the resolution of societal challenges** identified in the strategic documents of the EU⁷. Rather, the general opinion is that R&I activities help build

the European knowledge base. The **most positive views of Horizon 2020 R&I are held by businesses and research organizations, while the least positive – by NGOs and public authorities**⁸. Even though there is strong support for the involvement of civil society in Horizon 2020, the vast majority of representatives of Civil Society Organisations (CSO) surveyed by The European Economic and Social Committee (EESC) (83 %) either agree or strongly agree that there is **a lack of knowledge exchange between the scientific community and civil society**⁹.

Thirdly, **SSH integration, as an integral part of the RRI approach, is not across all disciplines**: economics, sociology, political science and public administration are well integrated, while many other SSH disciplines are under-represented, especially geography/demography and philosophy/anthropology. The low participation of the humanities and the arts remains a challenge¹⁰.

SSH partners receive about 22% (433 MLN EUR) of the total budget for SSH-flagged topics; moreover, the majority of partners come from a

5. Interim Evaluation of Horizon 2020 // DG Research and Innovation, European Commission, 2017

6. Horizon Europe Stakeholder Consultation Synopsis Report, European Commission, 7.6.2018.

7. Ibid

8. Interim Evaluation of Horizon 2020 // DG Research and Innovation, European Commission, 2017

9. Ibid

10. Policy Briefing: Science with and for Society (SwafS) Introduction to the 2018 call for proposals



group of five-six Member States¹¹.

Thus, overall, on the basis of the Evaluation report, we can conclude that there is a need for greater outreach to civil society to better explain results and impacts and the contribution that research and innovation can make to tackling societal challenges, and to involve them better in the **programme co-design** (agenda-setting) and its **implementation** (co-creation).

What is the role of SSH in EU research and innovation?

As already mentioned above, SSH is faced with several challenges in the EU research and innovation funding framework: on the one hand, limited financial resources and tight competition; on the other hand, perception that SSH value only concerns responsibility and ethics, and does not produce economic/innovative value.

The HubIT project has identified four main dimensions through which the role of SSH is understood at the EU level:

- SSH for ensuring that R&I meet societal needs
- SSH for communicating R&I results through impact
- SSH for increasing competitiveness
- SSH for anticipating and driving change

Our general conclusion is that despite acknowledging the contribution of SSH, there still seems to be a lack of understanding of the concrete role SSH can play in making R&I more competitive – helping to understand the end-users of the product/prototype, the context of innovation, etc. SSH can help with matching R&I goals with societal needs by a) providing added value to technological solutions of complex problems; b) making sure that societal needs are articulated and c) keeping the public interested and engaged in research and innovation activities. The contribution of SSH to communicating R&I results is recognized on the level of policy documents ([see our first Policy brief](#) for more information), however no specific suggestions are offered as to how the ecosystem of engaged stakeholders can be formed (or can form naturally). A strong emphasis on impact and its assessment suggests a more quantitative and formal approach to understanding the importance of projects and/initiatives.

There is an effort to incorporate social sciences and humanities more deeply and organically into European R&I activities while also engaging more actively with the most pressing societal concerns that humanity in general and Europeans specifically are facing. It is important to understand that the added value of SSH is

¹¹. Interim Evaluation of Horizon 2020 // DG Research and Innovation, European Commission, 2017



multidimensional – from articulating new challenges and leading change to developing new ways of understanding whether an initiative was impactful. Whether the approach articulated in analysed documents will lead to development of new funding and/or ecosystem support instruments remains a question.

What is the future of RRI and SSH-ICT cooperation?

The EU sees the future of its research and innovation in a **mission-oriented approach**. The European Commission states that “...this is an approach to policy-making which means setting defined goals, with specific targets and working to achieve them in a set time”. The Mazzucato Report¹² on the mission-oriented approach stresses that each “mission” will be framed in strong societal terms – as something that has direct impact on individuals’ lives. Moreover, the need to combine understandings of sociology, politics and economics with technology is emphasized, as technology alone has not been successful in solving complex problems of modernity. Inclusion of the public in defining the challenges and implementing solutions is noted as something that could play a role in keeping society motivated and

invested in a mission, thus ensuring its sustainability.

On the one hand, RRI and SSH organically form a part of the mission-oriented approach with their emphasis on co-creation with citizens and societal impact generation. On the other hand, with no clearly defined space and function for RRI and SSH in the missions, there is a risk that problems brought forward in the Horizon 2020 evaluation (including weak involvement of civil society and NGOs in research) will not be addressed.

Moreover, missions do not solve a tension point between two directions of EU R&I:

competitiveness AND/OR responsibility. While one understanding of R&I governance presupposes that R&I should be focused on achieving economic benefits – and societal benefits will follow (e.g. the rationale of the European Innovation Council; overview of Icelandic research policies), **a second one calls for direct application of research to societal challenges, hoping that economic benefits will come later** (e.g. Science with and for Society program rationale).

What is cutting-edge in responsible research design?

12. Mazzucato report - Mission-Oriented Research & Innovation in the European Union. A problem-solving approach to fuel innovation-led growth (2018). Accessible at: https://ec.europa.eu/info/sites/info/files/mazzucato_report_2018.pdf

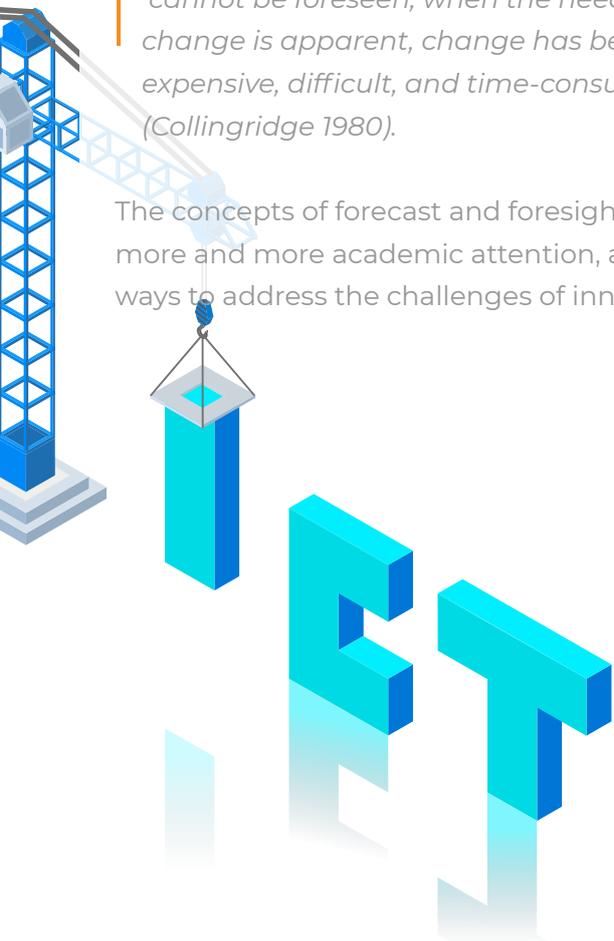
The academic debate seems to be moving in a different direction on the topic of innovation governance. There is a consensus that we need to **not only regulate – but also anticipate future developments in the field of ICT**

(anticipatory governance) (Stahl & Wright 2018). The rise of novel smart information systems (SIS) in ICT has raised concerns about numerous ethical issues (privacy, fairness, discrimination, agency, consent, etc.). What makes this even more complicated (this is known under the name of Collingridge dilemma) is that our ambition to govern and control innovation might not be that realistic:

"When change is easy, the need for it cannot be foreseen; when the need for change is apparent, change has become expensive, difficult, and time-consuming" (Collingridge 1980).

The concepts of forecast and foresight receive more and more academic attention, as possible ways to address the challenges of innovation

governance. One possibility is the SSH-ICT collaboration to develop big-data and deep-learning based forecasting methods (which would connect features of technology with specific risks and suggest ways to minimize these risks already during development – forecast). Another option is to develop an overview of larger social and technological trends and their interaction to have a general understanding of the changing tech-society landscape and relationships (Slowing down of Moore's law, effects of smartphones and sedentary jobs on health etc. - foresight). Some researchers are calling for *Value Sensitive Design* – embedding societal values at early stages of innovation (Umbrello 2018), while others look into Design for Values in ICT – turning away from focusing on user needs to citizen values (Huldtgren 2014). The list of values to lie at the foundation of future ICT innovations is long and non-exhaustive: *privacy, security, ownership, universal usability, (user) autonomy, accountability and responsibility, human welfare, etc.*, which can be defined in a collaborative way, and which consequently will not only ensure that current innovation under development is beneficial to society, but that it will also drive future innovation.



What do we want to discuss?

As you can see, there are many topics and future challenges that make it hard for us to predict what responsibility in research and innovation will look like in the future. But for now, let us focus on the following:

- Competitiveness vs responsibility:** do RRI/SSH perspectives make ICT research and innovation slower and less productive? Is there a threat of Europe losing its edge vis-à-vis China, Japan and the US? How can the EU sustainably implement RRI practices without making R&I processes too complex? How can SSH-ICT cooperation be incentivized and organized in such a way that they equally support innovation AND responsibility?
- Future of research and innovation governance:** is the EU on the right track with embedding RRI and SSH in ICT innovation? Do you think it is better to have formal requirements for responsibility in funding rules, or do they encourage “tick-boxing” and overburdening scientists? What values should be at the foundation of ICT research and innovation? How to market these values to researchers? How to make the link between innovation and policy-making closer.

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