Summary Report of the 7th Eu-SPRI Conference in Vienna, 7-9 June 2017

Furthering the Discussion on the State of the Field

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1. Main issues of debate and directions for future research agendas

The theme of the seventh Eu-SPRI Conference was „The Future of STI – The Future of STI Policy". With this heading, it was an effort to carry on the discussions of the two previous conferences, in particular those in Helsinki and Lund, and provide them with fresh energy and arguments.

Already in the two previous years it became obvious that there is a general uneasiness in the STI policy research community regarding our main subject matter. We wanted to cater to these discussions about STI policy and add fresh input from several academic disciplines, empirical as well as conceptual , and also practical and politically oriented research work. To this end, we had proposed, besides the different thematic tracks, also a number of other formats, including mutual learning sessions and policy roundtables.

Several of the topics intensely debated at the conference are directly connected to what we referred to as a growing uneasiness with several issues of STI policy, and which should help define new agendas. The subsequent overview may be selective, but it reflects important areas of debate, which point to emerging items for a future STI policy research agenda:

- **New forms and patterns of research and innovation**
  Over the past five decades innovation has predominantly been understood as research-led innovation (i.e. resulting from systematic knowledge- and science-based efforts), and innovation policy as an extension of research policy. This understanding has changed in recent years, with a growing recognition of innovation as driven by demand-side *as well as* the supply-side forces. The social dimension of innovation has evolved into an important topic of recent Eu-SPRI conferences already, pointing to both a broadening of the means and the goals that constitute innovation. At the same time, new configurations are enabled by digital technology and digital platforms, which may give rise quickly to the emergence of potentially disruptive business models. This diversification of the practice and organisation of research and innovation is reflected in the expansion of the types of actors regarded as relevant, and in the specificity of sectoral and spatial contexts to frame them. In order to handle this growing complexity, new approaches have been suggested, ranging from design thinking, bricolage and experimentation to RRI and Mode 3, which are attracting growing attention as promising governance framework for making research and innovation happen.

  Future agendas of the Eu-SPRI community need to provide a **more differentiated and at the same time systematic understanding of the broader scope of research and innovation activities**, of the actors involved, and the dynamics of change at play. **New data, methods and tools** are available now to address these differentiated patterns of STI, and they need to be used to capture the new terrain of research and innovation.

- **Reconfiguring institutional settings**
  These new forms of STI are associated with new institutional settings. When analysing research and innovation activities, it becomes transparent that there are new settings in which STI actors are working together. This would include the occurrence of new combinations of actors, such as the cooperation of firms, government agencies and civil society organisations. An example are government-sponsored platforms, in which these actors are coming together in order to exchange research and innovation results, expectations about future developments in their respective research fields and opinions on the usefulness of specific STI policy instruments.

  These institutional settings are reminiscent of the literature on changing relationships between governments and citizens, which over the last 20 years have been depicting a move from "government to governance". By now, they however transcend what most authors have been envisioning in these discussions and therefore, once again, reality has overtaken social science in blurring the differences between institutions making up state and society ever more.

  These developments raise questions with regard to our **conceptions of the categories "state", "society", and also "firm" and "civic society"** (other than in a strictly juridical sense), which all are involved in STI governance activities, taking on roles which previously had been clearly defined and ascribed to certain of these actors. Concomitant questions refer to the political implications of some of these developments, which two decades ago would have raised questions of **interest collusions between actors from state and society**, potentially endangering the separation of powers concept of democratic policy-making.

- **New rationales for policy intervention**
  The rationales for STI policy have been guided by market failure arguments since the 1960s, and in addition by system failure arguments since the 1990s. Yet there is a general feeling that this might not be enough, given the economic crisis of 2008, a growing social divide in most countries, the battles around democracy and populism, the unclear future of the EU, and even more global and societal challenges such as climate change, ageing, security and the like. The direction of innovation has thus emerged as an important issue of debate, and it has been taken up more quickly in policy practice (e.g. under the headline of "new missions") than in policy research. While some voices try to turn societal challenges into major ambitions of STI policy, others call for quicker upscaling of the innovation opportunities arising from new technology. Both call for policy action, but we need to be cautious in not over-stretching what government policy can and should justifiably do in relation to these developments.

  The agenda of the future needs to consolidate our understanding of **appropriate rationales for STI policy in relation to new forms of research and innovation,** and of the ambitious claims of what government should do, as a foundation for moving in an informed way towards next-generation STI policies. It also implies being clear about the **differences in rationales and instruments for furthering research (as a means to promote new solutions in a science-based fashion) on the one hand and innovation (as achievement that is driven by a multitude of supply- and demand-side forces) on the other.**

- **Addressing ambitious policy goals**

  The issue of rationales is associated to the question of the actual policy goals to pursue by means of STI policy. For many years, the goals behind STI were easy to mention (e.g. when successfully selling a policy approach to a policy-maker): competitiveness, growth and jobs. Yet we know that over the last 20 years even highly skilled R&D jobs have been travelling as result of globalisation, e.g. they have become target to outsourcing. Knowledge also travels with people who are today more mobile than in the past. So, even if it is true that STI still plays an important role for the upskilling of a given labour force and even of an innovation system, we cannot ignore that growth, wealth and job creation might not be a straightforward result from STI any more. And, perhaps even more importantly, against the backdrop of the other economic, social, political and ecological challenges we have been eluding to before, should sustainable development goals be the most important yardstick and overarching policy ambitions to pursue, within which new interpretations of "growth", "competitiveness" and "jobs" be addressed. Of course, sustainable development goals mean different things in different countries – emerging economies are facing other key challenges than industrial ones – but we all seem to be struggling with realising more transformative ambitions with the help of STI.

  With regard to the research agenda of Eu-SPRI, this suggests growing attention to the re-interpretation of the **(transformative) policy goals to pursue with the help of STI**, and to approaches for addressing such long-term agendas. This clearly raises normative issues, which can only be resolved by listening to the voices of **stakeholders, who are becoming more important** not only as partners in the implementation of R&I activities, but also for defining goals and agendas. It calls for **new framings for STI policy**, and the need to pay more attention to **downstream contexts and policies**, which determine whether STI will scale up and make a difference (or not) in practice. The alignment of STI with spatial and sectoral boundary conditions (which in turn are shaped by corresponding policies) will be decisive for the performance of innovation ecosystems. This shift in emphasis towards downstream contexts thus needs to evolve into a core interest for STI policy research.

- **The intervention logic of policies**

  In our work, we are used to the input-output-outcome-impact logic, which serves us well for conveying the results of, e.g. evaluation work, similar as the old pipeline model of innovation, from basic to applied science, development and engineering. Yet we also know that all these logics are oversimplifications. In complex systems, cause and effect relationships are not as clear as the pipeline model or the IOOI-logic would suggest. But how can we explain, what we think is going on, to our audiences and customers, to decision-makers, stakeholders and the broad public?

  The Eu-SPRI research agenda needs to address the difficult task of **devising transparent intervention logics**, as a basis for justifying policy action, and it needs to do this against the backdrop of a broader understanding of what innovation is all about and what it is for. In particular, it needs to address issues relating to the need for multiple and well-tuned policy impulses, forming a **policy mix in scope and in time**.

- **Policy instruments and policy mixes**
  Established policy instruments mainly can be divided into distributive and regulatory instruments, in other words, most instruments fall into the categories of providing money or regulating by law. Demand-side instruments have attracted growing attention of the past years, and public procurement in particular.

  Yet we know that technological, economic, social, political and ecological environments are changing very fast at the moment - think of digitisation and its wide-ranging expected consequences. Many of these changes have unclear effects and need flexible policy instruments. There has been a lot of talk on policy experimentation, living and policy labs, experimentation and innovation zones, the introduction of flexibility clauses etc., but in large parts of Europe they are not being implemented and there is not much research on these instruments. The idea of creating platform for bringing together different players has also evolved into an important instrument at European level, where next to linking research, innovation and policy actors from different realms, experimentation with inter-connecting different national policy contexts is an issue of major concern (e.g. in ERA-Nets, JPIs, KICs, and the like). This more ambitious instrumentation of STI (and other) policies requires also more demanding evaluation and impact assessments.

  More work is needed to improve our understanding of how **demand side instruments** (procurement, regulation, standards) can be implemented effectively, **and how they interact with supply-side instruments**. This is a non-trivial task, and we are far from being able to apply a deductive approach to their design. The creation of **learning spaces for new policy instruments and policy mixes** is an area of emerging research interest. It needs to be advanced alongside with **monitoring, ex-ante impact assessment and ex-post evaluation** concepts that allow capturing a wider spectrum of potential and actual impacts in line with the more ambitious goals of STI policy. These raise issues about the **balance and complementarity between (quantitative) measurement of impacts and (qualitative) narratives.**

These – and other - issues have been debated widely at the Eu-SPRI Conference in Vienna. They have been part of different keynotes, for example of Michael Keenan, speaking about the future directions for STI policy from the perspective of the OECD and by Stefan Kuhlmann, who was talking about addressing grand challenges as a challenge for STI policy. Some of the aforementioned issues were also debated at the final policy roundtable and the roundtable on national funding agencies in Europe, involving both practitioners and STI scholars, and drawing also on a mixed auditorium of people from different sectors and fields, which led to very lively debates. These topics have also been addressed in the different tracks, addressing, for instance, new framings for STI policy, policy mixes and new instruments for transforming innovation, innovation ecosystems, social innovation, and various governance aspects of STI policy.

2. Participation

The Eu-SPRI conference 2017 hosted 224 participants from 34 countries, thereof 19 European and 15 non-European. Table 1 shows the geographical distribution of participants. Overall, every seventh participants came from outside of Europe, with a surprisingly good representation from Asia (24 participants) and Latin America (6 participants), but a very weak representation from North America (only two participants!) and no-one attending from Africa.

The gender distribution was as follows: 70 women and 154 men attended the conference. Out of the 142 presentations, 53 were held by women, 89 were held by men. 15 of the sessions were chaired by women, 23 by men. Six men and two women participated in the Policy Round Table.

Europe	No. of participants	International	No. of participants
Austria	53	Brazil	1
Belgium	3	Canada	1
Czech Republic	1	Chile	1
Denmark	4	China	8
Estonia	2	Costa Rica	1
Finland	4	India	2
France	13	Iran	2
Germany	18	Israel	1
Hungary	1	Japan	3
Ireland	2	Kazakhstan	1
Italy	7	Mexico	3
Netherlands	20	South Korea	4
Norway	10	Taiwan	2
Poland	1	Turkey	1
Portugal	2	USA	1
Spain	10		
Sweden	8		
Switzerland	6		
United Kingdom	27		
Total European	**192**	**Total non-European**	**32**

Table 1: Geographical distribution of participants