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NOTE

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To: Delegations
Subject: ERAC SWG OSI Opinion on Open Innovation

Delegations will find in annex to this Note the ERAC Standing Working Group on Open Science and Innovation Opinion on Open Innovation, as adopted by written procedure.

**ERAC STANDING WORKING GROUP ON OPEN SCIENCE AND INNOVATION
(ERAC SWG OSI)
OPINION ON OPEN INNOVATION**

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Executive Summary

Open Innovation will essentially facilitate to meet current demands, anticipate future needs and to generate an innovation dynamic that cannot be achieved with traditional methods. The ERAC Standing Working Group on Open Science and Innovation's (ERAC SWG OSI) Task Force on Open Innovation prepared a definition on Open Innovation for the ERAC SWG OSI. This definition states that:

Open Innovation is a heterogeneous approach which favours cutting across the boundaries between organizations, sectors, disciplines and communities to develop new products, services, processes and practices and to generate new knowledge, implying increased inclusion, empowerment and sustainability.¹

Analysing the results of the survey of Open Innovation based on the answers of 20 countries, taking into consideration the work carried out in the Task Force on Open Innovation itself and on the feedback of the ERAC SWG on Gender in R&I, the Task Force on Open Innovation developed the following recommendations². The order of the recommendations does not rank their importance:

- 1. Create innovation maps for the purpose of matchmaking between actors or incentive mechanisms for partnerships with non-traditional partners in research**
- 2. Invest in people by providing training programmes and curricula to enable the acquisition of research competences particular to Open Innovation processes in science.**
- 3. Foster participation of SME's by offering methods and instruments applicable in Open Innovation.**

¹ For full definition, see chapter "Definition of Open Innovation".

² For full recommendations, see chapter "Action areas".

- 4. Develop national strategies or guidelines on Open Innovation, addressing especially the interaction between Open Innovation and other forms of innovation.**
- 5. Develop fair sharing and compensation models for crowd work and make them available to the public, for example in the form of guidance for fair sharing, collections of cooperation models and specimen contracts.**
- 6. Encourage and put in place policies which increase the opportunities of participation by investing in competence building activities by including different communities early on as pilot users and by promoting specific activities to disadvantaged minorities.**
- 7. Foster accessibility focused policies by continuing efforts to promote the public availability of research results and data archives.**
- 8. Target engagement focused policies to properly involve the “unusual suspects” by explicitly promoting a human-centred design that engages disadvantaged communities, by promoting a greater level of participation of non-profit entities and by supporting investments in social infrastructures to facilitate higher levels of participation.**
- 9. Ensure access, participation and agency to various groups of actors (age, gender, ethnicity, health, social status etc.) in order to increase the inclusion, empowerment and sustainability of and by Open Innovation.**
- 10. In order to meet the needs of society, create policy measures that not only consist of representatives of policy, industry and research, but also regularly consult citizens and the civil society.**
- 11. Create sustainable Open Innovation platforms with proper incentives in order to ensure active participation.**
- 12. Revisit the 2008 “Recommendation on the management of intellectual property in knowledge transfer activities” in the light of new developments like Open Innovation in the field of knowledge transfer.**

- 13. Keep the new proposed name of the third pillar in Horizon Europe now called “Innovative Europe” instead previously “Open Innovation”.**
- 14. Implement analyses of the uncertainties embedded in global value chains and start a common European foresight process to better equip both policy builders and other stakeholders to face those uncertainties.**

Introduction

The ERAC SWG OSI mandate states that, “The overall objective of the Working Group on Open Science and Innovation is to advise, in the context of open science and Open Innovation, on the development and implementation of policies and initiatives to enhance access to scientific information, and on the circulation and use of knowledge for research and innovation for the benefit of scientists, research institutions, education, businesses, citizens and society at large, with the issues being considered primarily from the perspective of these end-users.”

For this reason, the ERAC SWG OSI decided to install a temporary Task Force on Open Innovation that should work on the topic Open Innovation with the mandate to develop an opinion paper on Open Innovation to ensure an informed and coherent position of the ERAC SWG OSI . Austria, Bulgaria, Finland, Hungary, Italy, the Netherlands, Sweden and the associated countries Norway and Switzerland volunteered to work together in this Task Force and to prepare this opinion paper.

All national delegations of the ERAC SWG OSI were asked to deliver their input by responding to a targeted survey on the status on Open Innovation in their respective countries. Above this, the Task Force on Open Innovation interacted with the ERAC SWG on Gender in R&I to get their appreciated and important feedback on the Task Forces work, which influenced the present opinion paper.

Other concepts like Open Science, Open Access or Open Data have been or will be tackled by the standing working group separately and are not the subject of this Opinion. Nevertheless, as these concepts are often interwoven, the Task Force refers to them when appropriate.

Moving towards an improved innovation ecosystem

Globalization, digitalization and competition are the main drivers behind the dynamic pace of change in today's world. This constant state of flux does not leave the discipline of innovation unaffected. The idea of Open Innovation has long challenged the idea of the scientist working in isolation, collaboration and sustainability being the main drivers of this transformation.

Collaborative research not only accelerates the innovation process, it is essential to the quality and sustainability of its outcomes. The network constellation of academia, industry and government³ became the symbol of knowledge-based economies in the 1990s: Academia as the source of new knowledge and technologies, industry as the transformer and executor, and government as the source of contractual relationships offering optimal framework conditions for stable interactions and exchange. This principle of trilateral Open Innovation has recently been taken to a new level by involving and activating a much broader group of stakeholders. Above all, this has meant integrating civil society players (e.g. citizens, user crowds, user communities etc.) into innovation processes, thus creating an ecosystem-centric view of innovation. By working together, industry, academia, government and citizens build active, barrier-free networks that drive structural change and shape the future, far beyond the scope of what any entity could achieve on its own. Crossing institutional boundaries enables us to tackle the complex challenges we face in our societies. Breaking down the traditional silos between academia, industry, government and citizens leads to multi- and interdisciplinary viewpoints that create new shared values for the benefit of all participants in this innovation ecosystem. Such an Open Innovation ecosystem is most effective when its interplay is explicitly orchestrated and managed. Nevertheless, in contrast to the linear innovation process (research-development-commercialization), the entire value creation process in an Open Innovation ecosystem takes a cyclic approach: repeatedly going back and forth between the stages of idea generation, research, development, and testing phases by considering new results, adding new knowledge and experience value from the entire ecosystem.

³ In this text the term government refers to both the governmental and public administration levels.

Open Innovation was originally a concept developed as a reaction to what a few years back was considered to be “Closed Innovation” (Chesbrough, 2003; Chesbrough et. al. 2006). Contemporary Open Innovation-concepts, however, move beyond the Chesbrough version of Open Innovation and identify as Open Innovation 2.0 or Open Innovation Ecosystems in which the weight of stakeholder and user involvement has reached a new level.

An inherent characteristic of these discussions around different innovation policy approaches is the tendency to present conceptual changes as paradigms that change through time, a kind of diagnosis derived from (innovation) era logic. In many respects Open Innovation 2.0 and the idea of a Quadruple Helix model follow such a scheme. There are several reasons why this might constitute a valuable rhetorical approach and a necessity when seeking to communicate new ideas to political administrative systems. On the other hand, it can also blur the need to open up different parallel approaches to innovation strategies, and obscure the fact that in the future conventional closed innovation practices might be both appropriate and important in certain areas/sectors (for example within the life sciences and among business actors with long time distances between ideas/research and market realization and heavy investments in the post-research period). It is important to be aware of this fallacy and conscious of the ongoing heterogeneity of innovation strategy approaches.

Definition of Open Innovation

The ERAC SWG OSI tried to identify the most important action areas and to provide recommendations for appropriate policy-actions. As a common starting point, the ERAC SWG OSI elaborated a common definition of Open Innovation. This definition reflects the ERAC SWG OSI's view on Open Innovation and goes beyond the primary definition of Open Innovation by Henry Chesbrough⁴:

⁴ „Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. [This paradigm] assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology.“ (Chesbrough 2006)

Open Innovation is a heterogeneous approach which favours cutting across the boundaries between organizations, sectors, disciplines and communities to develop new products, services, processes and practices and to generate new knowledge. In addition, Open Innovation implies increased inclusion, empowerment and sustainability. It can be pursued with or without a profit intention to fill gaps in supply, to leverage external knowledge, to aggregate fragmented needs, to mobilize communities or for any combination of these different reasons. Open Innovation means that civil society, science, industry and government work together in dynamic, diverse innovation ecosystems.

It benefits from the evolution of different technologies, especially online technologies, and from the easiness of accessing them. Users, creative consumers as well as communities of user innovators play an increasingly important role, thus increasing the success rate of innovations.

Open Innovation and the protection of intellectual property are not mutually exclusive concepts. The application of Open Innovation strategies requires actors to take a highly conscious approach to managing intellectual property as well as knowledge taking account of the many different options across the entire spectrum of IP protection and exploitation.

The emphasis of Open Innovation on participating, sharing, collaborating, engaging, empowering and including lies at the core of European values. It thus offers a unique opportunity to mobilize resources for strengthening our society in a collective effort on a new mission-oriented path⁵ to meet current demands, anticipate future needs and to generate an innovation dynamic that cannot be achieved with traditional methods.

⁵ cf. Mazzucato 2018.

Action areas

The role of users

Innovation is not only an imperative for economic and social prosperity. Its added value for the progress (and survival) of our world through the interaction of mindset, skill and societal competences has been underpinned.

To fully exploit the new Open Innovation cultural bridges have to be built between all potential actors in order to improve motivation to engage in e.g. experiments with unknown outcomes or non-traditional partnerships. This requires changing mind-sets away from “not invented here” to an Open Innovation ecosystem with external partners involved. For this, Open Innovation elements could be embedded early in schools or Open Innovation and experimental spaces can be created and promoted in cities and rural areas to approximate innovation and reduce uncertainties and fears across all generations, communities and potential participants in the innovation ecosystem. Public entities from local, regional or national administrations should support well-funded programmes for R&D (including high-risk projects) that focus on needs and comparative advantage of the region or area where the ecosystem is located. In addition, public-sector procurement has to be set up to stimulate participation in innovation ecosystems. On the other hand, common framework conditions have to be established at national and international levels to allow for fearless cross-boundary collaboration, in geographical and multidisciplinary means.

Hence, new efficient approaches are required to raise awareness for Open Innovation and thus to increase players’ participation, networking and cooperation abilities.

Consequently, Open Innovation will continue to create value for civil **society, business, academia and public markets**, which also influences their roles in this ecosystem.

Industry and Businesses

Industrial research is characterized by two paradoxal tendencies: as the life cycle of products and, at times, the underlying technology becomes shorter and shorter, **industrial research** needs to accelerate to get technology to market more quickly. However, as companies expand, their internal processes often slow down which ultimately prevents them from taking any risks. Thus, many large companies are improving their innovation processes and systems by opening them up and attracting other actors from the public (academia and citizens) and private (large and small companies) sectors. Often, this ecosystem is based on platforms provided by industry, where other companies or actors are not only able to develop their own products or services but are also animated to share ideas with the members of the ecosystem. This allows companies to look beyond their own R&D boundaries and leads to the development of new products and services. For small companies, such platforms offer great opportunities to benefit from the skills of their larger counterparts and thus offer both sides an ideal source of heterogeneous knowledge.

Higher education institutions

Similar ideas can be applied to university-driven ecosystems. **Universities and higher education institutions** are increasingly trying to play an active role in the transfer of knowledge between academia and industry in order to facilitate innovation activities by direct cooperation with a range of partners. In this respect, Open Innovation, but also Open Science, Open Data and Open Access policies are increasingly relevant. The development and transfer of disruptive ideas are enabled through spin-offs and partnerships with high-tech companies, e.g. at MIT (USA), Cambridge University (UK), Lund University (SWE) and the EPFL (Switzerland). Such co-creation places on university campuses make it possible to bring together students, scientists, entrepreneurs and other industry partners who drive innovation by sharing their different perspectives on the same subject. In that respect, universities are sometimes also seen as “lubricants” and take responsibility for maintaining common programmes and infrastructures. Moreover, universities and public research organizations play a greater role in corporate Open Innovation strategies as they serve as a source of basic knowledge and as strategic innovation partners. Open Innovation must address both short, medium and long term research, what often are referred to by the terms "basic research" (longer term) and "applied research" (shorter term). Hence, Open Innovation strategies not only must ensure knowledge transfer from long term basic research, greater emphasis must also be given to applied research with shorter timeframes and technology development at such institutions. Technological specialization and a clear understanding of the respective roles of the partners is needed to ensure a smooth interface between R&D activities performed within the framework of a university-corporate partnership. Importantly, a new type of supporting education is required, which is able to offer brief learning cycles for new management practices as well as fast dissemination of outcomes within and beyond the ecosystem. Finally, there is a need for a long-term commitment from universities to ensure that their educational support (e.g. Master and PhD programmes) to a certain degree also aligns to the interests of industry.

Citizens and civil society

The recent past has shown that alongside companies and research centres **citizens** play a prominent if not the driving role in the Open Innovation ecosystem. In the past, innovation was “done” to citizens and the potential of citizens as innovation partners was overshadowed by the cooperation between companies and science institutions, partners and competitors. Nowadays, citizens have become an integral part of the innovation ecosystem by increasing the success rate of innovations and reducing the time-to-market of products and services. There are different forms of citizen involvement in the innovation process, depending on the stage of the process (e.g. development, commercialization), on citizen-firm interaction and on the empowerment level of citizens. Depending on the stage of the innovation process, citizens can actively participate as a source of ideas, as co-creators, as testers and/or as end-users and buyers. An increasingly important instrument in these processes are digital media (including social media) and the Internet of Things, serving as efficient tools for shortening the innovation life cycle. Hence, while citizens used to be objects of research in the innovation process, they have moved towards becoming contributors and co-creators of this process and, as an ultimate consequence, profiting from its outcome as consumers.

Policy-makers and government

While world leaders declare with increasing frequency that successful innovation is accelerated when it involves a wider range of stakeholders, the right policy decisions have to be made if business and societal value is to be created through innovation. Thus, **policy-makers** play a crucial role in driving structural change and thus in creating the required framework for Open Innovation. This includes policies on, for instance, the handling of intellectual property rights (IP) as well as on building up Open Innovation ecosystems in developing countries. Existing public policies have to be adapted to accelerate Open Innovation especially in SMEs and to allow for the establishment of innovation centres in universities and other public places. Examples for such centres are the “Living Labs”, user-centred, Open Innovation environments in which university, industry, citizens and government collaborate in a shared space (can be virtual or physical). Co-creation, exploration, experimentation and evaluation are the four main activities of Living Labs, in which the participants of the ecosystem are immersed in a creative social space in order to design and experience their own future. Another example are Joint Pathfinding programmes where research institutions and business groups share resources, risks and ultimately decisions. The aim is to enable actors to span the so-called valley of death (i.e. the period between research and product adoption) in order to obtain higher returns on research investments.

Recommendations:

- The establishment of a heterogeneous network is the crucial factor behind the success of the innovation process. Nevertheless, many organizations and institutions lack any knowledge of how to initiate and establish a partnership with non-traditional actors. Thus, the innovation partners have to be enabled with tools and expertise to cross these boundaries. Innovation maps for the purpose of matchmaking between actors or incentive mechanisms for partnerships with non-traditional partners in research are just two possible approaches to solve the problem. Furthermore, participation of SME's in Open Innovation should be supported by offering methods and instruments applicable in Open Innovation.
- Investment in people is vital for Open Innovation to work. In line with this, fostering cross-functionality and mobility has to be guaranteed, as people must be able to work not only in networks across borders and sectors but also at the interface of convergent technologies. Thus, training programmes and/or curricula have to be implemented to enable the acquisition of relevant competences particular to Open Innovation processes in science. Furthermore, specific training modules, courses and MBA programs would be beneficial for inter-organizational networking. In cases where institutions (e.g. SMEs) lack financial resources to fund such studies, governmental agencies should step in and provide the respective funding.
- A conceptual framework needs to be established to allow the management of citizens' ability to innovate as an active participant in the innovation ecosystem.
- Access to the Open Innovation process has to ensure that all relevant groups of users are included in the course (age, gender, ethnicity, people with disabilities, different social class etc.). This includes rethinking the implicit user modelled in the process of design and development.

Limits of openness? – Open vs. closed innovation

It should be remembered that different approaches to innovation strategies exist, and it is important to state that in future conventional closed innovation practices might be both appropriate and important in certain areas/sectors – (for example in areas with long time distances between ideas/research and market realization and heavy investments in the post research period). Thus, Open Innovation on the one hand and the protection of intellectual property and non-disclosure policies on the other hand are not per se mutually exclusive concepts; on the contrary, they should be seen as mutually complementing each other. Inside-out Open Innovation is in fact conditional upon protection of an idea.

The application of Open Innovation strategies requires actors to take a highly conscious approach to managing intellectual property as well as knowledge of the many different options across the entire spectrum of IP protection and exploitation. These range from providing free and open access to intellectual property to strict protection by means of patents. The drafting of contracts between innovation partners therefore has an important role to play in the co-creation process. In practice, however, IP strategies vary widely in closed and Open Innovation processes, and the choice and success of different IP strategies and licensing / exploitation models depends on the industry/sector, type of company and business model. It is therefore particularly important to develop the appropriate competences for managing IP, exploiting knowledge, Open Innovation and open access. The results of the survey show that there has been already major progress in a lot of countries concerning the implementation of national Open Innovation policies, but there is still a lot of room for improvement (see charts 2-5, appendix). Moreover, there is still a lot to be done when it comes to the management of Intellectual Property in combination with Open Innovation (see chart 6, appendix). The designation of clear responsibilities in national Open Innovation activities on political level may be a proper way to achieve a coherent national policy (see chart 7, appendix).

Recommendations:

- Member states and associated countries should develop national strategies or guidelines on Open Innovation, addressing especially the interaction between Open Innovation and other forms of innovation. Those strategies or guidelines could - if appropriate - encompass the main issues raised in this paper.

Fair sharing in Open Innovation processes

Opening up innovation processes changes both the roles of actors and the classic divisions of labour. The increasing involvement of crowds in innovation processes via online platforms and the resulting forms of decentralized, piecemeal contributions raise the question as to how fair models of pecuniary and non-pecuniary compensation for innovation input by crowds could be designed in future. When developing new models, the term “compensation” should be used in the broadest sense and in all its many facets (e.g. monetary and non-monetary reward systems such as visibility, reputation, appreciation and their impact on those who generate innovation). It should also take into consideration the motivation of the user.

The key principles of fair sharing in Open Innovation as follows:

Fair sharing of costs

One of the key motivators for Open Innovation is to share the costs of research and innovation activities which are becoming ever more expensive. This cannot, however, happen in an opportunistic and selfish way as the following principles demonstrate.

Fair sharing of know-how and, crucially, data

Open Innovation is not a way to get something without giving anything away. In order to receive useful knowledge, information, data and ideas one needs to be able to produce concrete value added also for partners. Free-riders will soon be given short shrift. High levels of trust and faith in the shared vision are predictors for eventual success. Open Innovation is really about a cultural shift, the technology is already there.

Fair compensation models

There must be an appreciation of what constitutes fair compensation for those participating in an Open Innovation process. There is no single rule for such compensation and it can take various monetary or non-monetary forms, e.g. name in publicity, rights to exclusive IP etc.

Fair sharing of risks and rewards

As in any activity, the risks in Open Innovation must stand in relation to the potential rewards. Those willing to take a greater gamble are also entitled to greater gain if the venture is successful. Again, free-riders have no place in this process. In practical terms, gain might mean the IPs arising from the development work or a new successful business model, to name just two examples.

A challenge for this approach is that much value from Open Innovation is created by making knowledge, expertise, equipment and other resources available to a wider group of actors. Though, many of the involved actors will have neither the resources nor the competence to enter into cooperation with more advanced actors. These issues may be helped by government support but must of course be within the limits of state aid rules.

Fair cooperation between industry and science or society

In collaboration between industry and research organizations or society, industry seems to have a tendency to expect that it will get the results generated by the respective partner for free. Very clear rules, including state aid ones, are needed at the European level to ensure the fairness of the cooperation.

Fairness of innovation as a value

In order to make innovation, and especially tax-payer supported innovation, acceptable to citizens and society at large, innovations need to be consistent with and contribute to the well-being of the citizens and to societal goals. Though it is not only about tax payer support, but – taking into account geopolitical inequalities, access, participation, agency and empowerment – a vision of fair and equitable use of various open resources.

Recommendations:

- As many issues here are unresolved, possibilities for fair sharing and compensation models for crowd work should be developed and made available to the public, for example in the form of guidance for fair sharing, collections of cooperation models and standard contracts. To this end, it is necessary to analyse existing sharing and compensation models to highlight for the first time the broad spectrum existing here and to draw suitable conclusions for Europe.

Open Innovation and social inclusion - Making innovation more equal

Innovation generally has positive connotations and is viewed as a means of opening up new opportunities to improve our society and our living standards. Substantial resources are therefore dedicated to properly developing the different components of the complex, dynamic and non-linear process which generates new solutions with value. First, any innovation triggers changes that can profoundly affect existing communities. Whenever a disruption occurs, new actors prosper at the expense of those who were previously dominant. While the net effect generally turns out to be positive, several organizations and individuals are left to directly face these consequences in the form of job losses and failures and with little possibility or opportunity to join the new wave.

Second, the type and level of competencies required to participate in the innovation game are becoming increasingly complex. Domain-specific knowledge becomes deeper and deeper, as do the competencies needed to bring together the developments emerging in multiple domains. In spite of the positive effect of digital technologies on knowledge diffusion and the ease of bridging boundaries, innovation remains geographically concentrated in areas with high levels of economic and human capital development.

Third, innovation ambitiously looks to the future, but oftentimes seems distant from the daily problems of ordinary people. The rising costs of health care are a powerful source of inspiration for many technological developments targeting lower costs of drugs, better prevention protocols and cheaper curative options. Yet, as diffusion theories show, the time gap from when an innovation makes its first appearance and when it has a widespread impact on different levels of society can be long and disturbed by rent-seeking market distortions.

We should therefore not be surprised if in popular discourse innovation initially generates a positive enthusiasm, but soon fails to compete with other more compelling demands from the general public, especially if resources are at stake and resource allocation is influenced by competition with other more visible opportunities. Innovation might benefit all, but is perceived as a playing field of the elites.

Linking the general concept of Open Innovation to opportunities for engagement with otherwise uninvolved communities, for meeting multiple needs, and for gathering forces and perspectives from different parts of society can put social inclusion at the centre of innovation policies in a way that has never been done before and can reconcile those inconsistencies. Several Member States and Associated States have both instruments and process tools to stimulate such developments. A big challenge, however, is to cope with such at a European level and develop a sound "division of labour" between the local, national, and transnational level. Policies along these lines need a lot of policy imagination, creativity and constructiveness. A few examples of actors stimulating such developments could be the Cambridge Innovation Centre (CIC), the former Danish council of Technologies, University College Dublin's (UCD) Nova and Dublin City University's (DCU) Alpha Campus or the Work Research Institute in Oslo.

CIC stimulates companies and HEI's to focus on growing their business while CIC tries to take care of the rest. CIC provides several different tools and measures (high-quality, flexible offices, co-working spaces, so-called stocked community kitchens, unmetered access to conference rooms, enterprise-grade internet services, printing and copying, phones, high-end furniture, operational and technical support, concierge services, perks and wellness offerings, and much more). CIC is fostering innovation districts and communities⁶. Key words are "inclusive, flexible spaces" for innovative activities.

⁶ <https://cic.com/about-us>

The former Danish Council of Technology developed a concept they called Consensus conferences⁷, while The Work Research Institute in Oslo developed and disseminated concepts like Search Conferences and Dialogue Conferences⁸.

Linking innovation to social impact

The opportunities to leverage Open Innovation to foster social inclusion are strongly linked to the development of the social economy and the need to jointly maximize social value (i.e. the value produced for citizens, for the community in general as well as for users), economic value and ecological value. In accordance with the European Parliament's declaration of 19/02/09 Open Innovation is centred on respect for common values, such as "democracy, [...] participation of social actors (citizens, civil economy, users), [...] the person and [...] social objectives on capital, defence and the application of the principles of solidarity and responsibility, the reconciliation of the interests of users with the general interest, democratic control by its members, voluntary and open membership, management autonomy and independence from public authorities ...".

⁷ Consensus conferences originated in Denmark in the 1980s and are one of the earliest attempts by policymakers to include the lay public's opinions in their decision-making through public engagement. The purpose of consensus conferences is to qualify people's attitudes, inasmuch as they are given all the information they require until they are ready to assess a given technology. Consensus conferences are generally deemed suitable for topics that are socially relevant and/or need regulation which require public support.

⁸ A Search Conference's goal is to produce an adaptive relationship between your organization and its uncertain, changing environment. It's designed to identify a desired endpoint and increase the effectiveness of strategic planning by giving those actually affected by change more control over their purposes and directions.

The process emphasizes collaborative, experiential learning and community planning - 'jigsaw' puzzle solving. This is achieved through the interaction of the participants who, drawn from a relevant domain, identify, evaluate, and adapt to trends in their environment. The process allows for the creation of shared visions and initiates the deployment of those visions by creating self-managing teams responsible for working the specifics of how to make the plan happen.

A dialogue conference is normally smaller and its structures different than the search conference, but aim at the similar things as the search conference (Gustavsen 1999)

Any innovation within this perspective is geared towards the generation of social value through the co-creation, cooperation and use of new technologies in a "smart" perspective, with a special focus on strengthening the role of those who are excluded from the economic process, transforming them into innovators, entrepreneurs and proactive consumers aware of their rights. As stated in the 2016 DG Research document Open Innovation, Open Science, Open to the World “research and innovation are changing rapidly. Digital technologies are making science and innovation more collaborative, international and open to citizens.” A full deployment of this vision should emphasize the importance of a more widespread participation of different constituencies, the relevance of properly including in the process the voices of the communities and their needs, and creativity in the definition of novel tools to make this happen.

By explicitly linking an approach based on the Open Innovation concept and its impact on social inclusion we are given a concrete option to contribute to Europe’s social infrastructure, which has been recently recognized as, “a crucial instrument for creating inclusive growth and for strengthening Europe’s social base.” (European Economy Discussion Paper 074, 2018, p. iv).

This means:

- increasing the variety of actors involved,
- widening the topics covered,
- linking otherwise unconnected communities,
- striking a balance between short-term results and long-term goals,
- emphasizing the relevance of trial and error approaches and on field learning,
- bringing scientific communities closer to society⁹,
- restoring their role and respect in the public debate,
- investing in new generations and supporting older ones who might suffer from the effects of rapid technological changes,
- active promoting to women and disadvantaged minorities,
- making knowledge development the main concern at all levels.

⁹ regarding the citizen scientist perspective, see also Wilsdon, Wynne and Stilgoe 2005.

All actions should be coherent with the new mission-oriented approach envisioned for the next EU Framework Programme for Research and Innovation.

With regard to policy design, three lines of action can be identified: opportunities of participation, accessibility and engagement. They are all equally relevant, although they might not all be equally applicable to the same targets or objectives. There might be single actors (individuals or institutions) or communities who only need to be engaged because they already have the proper access to the relevant resources. There might well be others who have not been sufficiently engaged, because they lack the resources or have trouble connecting to the proper opportunities or both.

Specifically, innovations can affect men and women differently and in order to ensure its relevance for all end users men and women have to be included in the whole innovation process. Moreover, gender has an effect on how innovation is designed, developed, implemented and used, and this also pertains to Open Innovation. Because of the general lower number of women in the ecosystem of Open Innovation, women's ideas are not implemented to the same degree as men's. Thus, masculine discourses and values continue to drive innovation, including Open Innovation. Importantly, attention to gender concerns must intersect with other axes of social organizing, including age, ethnicity, ability, differences in distribution of care work, social class and others, as they all affect possibilities for access, participation and use.

By paying attention to all three levels we will significantly widen participation in future European innovation efforts, not only to achieve the specific goals of the different projects, but also to build through it a renewed sense of being a European citizen.

Recommendations:

- Policies which increase the opportunities of participation should be targeted by investing in competence building activities. This could be done by including different communities early on as pilot users, training them to properly interact with the new tools and devices, by promoting specific activities to disadvantaged minorities, and supporting institutional capacity building that connects social and innovation policies. Importantly, such policies should require that the processes make concerted and traceable efforts to include diverse groups of users, for instance the use of citizen innovation panels. Particular attention need to be paid to age, gender, ability and disabilities and their intersection with one another.
- Accessibility focused policies should be targeted to facilitate access to tangible and intangible resources with a view to increasing the opportunities to leverage the investments dedicated to building up such resources. This could be done by continuing efforts to promote the public availability of research results and data archives, by improving opportunities to access labs and facilities, by promoting the use of IPRs as a stage in the innovation process rather than as a source of revenues, by reinforcing the impact evaluation as a source of accountability as well as a source of ideas and opportunities for improvement.
- Engagement focused policies should be targeted to properly involve the “unusual suspects”. They are fully aligned with the specificities developed around the user-centred approaches, but should be considered as a direct opportunity to target specific communities which might be directly contributing, or act as a bridge towards other constituencies. This could be done by explicitly promoting a human-centred design that engages disadvantaged communities, by promoting a greater level of participation of non-profit entities and by supporting investments in social infrastructures to facilitate higher levels of participation.
- Besides technological and economical focuses, Open Innovation should aim at inclusion, empowerment and sustainability. Access, participation and agency of various groups of actors (age, gender, ethnicity, health, social status etc.) has to be ensured. Attention has to be paid to the numerous intersections of these groups when it comes to e.g. equitable collaboration and inclusive infrastructures.

Open Innovation in handling societal challenges and missions

On the global level the 2030 Agenda is the world's largest order, which everyone can and is expected to help fulfil. For the first time in history, the world has common goals for sustainable development (SDG). The SDG goals are integrated and indivisible. This means that all goals interact and that forces need to be mobilized in all 17 areas to succeed. It also means that everyone must consider both economic growth, social inclusion and long-term environmental protection in everything they do to reach the goals. There are a range of dilemmas and conflicting agendas to be considered and dealt with. Innovation will be crucial in overcoming the complex challenges that stand between us and the goals. The 2030 Agenda both drives and requires innovation, both in agenda setting, cooperation practices and the range of actors involved.

The complexities, uncertainties and dilemmas characterising grand social challenges calls for new mechanisms and ways of working involving a wide range of actors. New models for governance and co-operation are focusing on the innovation processes, that they should be anticipatory, reflexive, inclusive and responsive (RRI: Responsible Research and Innovation).¹⁰

OECD Science, Technology and Innovation Outlook 2018 introduces the same approach by three dimensions: anticipation, inclusion, directionality: "Process governance is becoming important when the focus shifts from managing risks of technological development to managing the innovation process itself: who, when, what and how. It aims to anticipate concerns early on, address them through open and inclusive processes, and steer the innovation trajectory in a desirable direction. The key idea is that making the innovation process more anticipatory, inclusive and purposive will inject public good considerations into innovation dynamics and ensure that social goals, values and concerns are integrated as they unfold".¹¹

¹⁰ regarding the framework for RRI, see also Wilsdon, Wynne and Stilgoe 2005.

¹¹ OECD 2018: S. 224.

In the European arena, framework programmes are meant to support research, development and innovation related activities. In Horizon 2020, instead of setting thematic priorities a challenge-based approach was introduced in order to bring together resources and knowledge across different fields, technologies and disciplines. Global societal challenges are providing activities from research to market with a new focus and instruments for innovation and market uptake. In order to solve such challenges, all stakeholders – society and citizens, higher education and research institutions (science), innovative enterprises (industry) as well as the European Commission and Member States (government) – have to closely cooperate. Cooperation between the public and private sectors and scientific centres is necessary to increase the impact of research findings and to help introduce new products and services to the market. Open Innovation platforms could have been used far more intensively during both the planning and the implementation phase of Horizon 2020 to ensure cooperation between actors from civil society, science, industry and businesses and government

In the next framework programme that is still under negotiation, Horizon Europe, innovation will play an even more significant role; the third pillar will be devoted exclusively to innovation related activities. New tools with the general aim of encouraging cooperation, networking, and the exchange of ideas, funding and skills among national and local innovation ecosystems will be promoted. In addition to networking activities a special focus is planned to be given to social innovations in the public sector. An EIC (European Innovation Council) bringing together Forum of Member States (and Associated countries) public authorities and bodies in charge of national innovation policies is planned to be set up, too in order to share best practise examples and harmonise efforts on the local, regional, national and European level. Innovation as a horizontal aspect can only be achieved through co-designing with stakeholder groups, especially when defining missions with a social and economic impact. Missions¹² will be one of the main novelties of Horizon Europe and due to their specificities; it is inevitable that Open Innovation methods will already be used during the planning phase.

¹² cf. Mazzucato 2018.

Missions should be concrete, measurable, and achievable. They should activate innovation across sectors, across actors and across disciplines. They should set long-term policy directions with clearly defined objectives. They require an ecosystem approach to achieve the objectives through co-creation and complementary implementation by the various stakeholders of the Quadruple Helix model. As missions will be introduced to make research and innovation more relevant to the needs of society, reflecting the needs of citizens at the intersection with other axes of social organization, and to ensure maximum visibility and impact for scientific results, the involvement of the public at large in the planning process is a necessary precondition for success.

The development of digital technologies has made it possible to involve citizens, their ideas and wishes in the co-creation process by using such new technologies to streamline responses received in a greater number of concrete areas, which can then be turned into missions with the characteristics described above. At the same time, vulnerability of some groups in digital technologies, poses novel challenges. As it is the scientific community that will implement missions, it has to be involved in each phase of planning and implementation: from problem definition (what is realistic) to analysing the results achieved (have we achieved the original objectives). Industry plays a role both on the demand side (what is needed, what can be successfully sold) and on the supply side (providing scientific knowledge and funds). Public administrators will be mainly responsible for the final description of missions, their objectives, ways and monitoring of implementation. Complementarity, synergies and harmonization between European and national programmes can further enhance the impact of missions.

Open Innovation networks have proven to be an efficient way of developing excellent, marketable scientific results and generating incremental or disruptive innovations. Such networks are also able to find a balance between the long term plans of scientists to achieve breakthrough science and technology and the short-term interest of the private sector which is interested in quickly introducing products and solutions to the market. Missions should integrate both ways of thinking.

It would also be important to build up sustainable Open Innovation platforms that could contribute to any of the missions' implementation phases. Missions will have to be flexible enough to adapt to new challenges and expectations. Open Innovation platforms should provide recommendations to the Mission for the purpose of redesigning and readjusting the final aims of the missions, which should be realistic, timely and centred around the needs of society. Thus, Open Innovation should play a pivotal role in those missions and in handling societal challenges.

Recommendations:

- In order to meet the needs of society when defining and implementing missions, adequate involvement of all stakeholders from civil society, science, industry and businesses and government is essential. Policy measures should not only consist of representatives of policy, industry and research, they should also regularly consult citizens and the civil society. Co-creation of initial targets as well as constant adaptation to ever-changing social needs and expectation are highly recommended. Setting up and supporting Innovation Ecosystems in Horizon Europe's third pillar is a very positive initiative, especially the element of putting an emphasis on social innovation and public sector involvement. The inclusion of citizens and the public at large in these ecosystems should be encouraged.
- Open Innovation platforms have to be created, for instance to ensure proper involvement of relevant stakeholders in addressing societal challenges through research and innovation. Impact of these platforms will mainly depend on the commitment and active participation of platform members, which can be guaranteed by a wide range of incentives from taking responsibility of tackling pressing problems of the world to financial rewards for the best solutions or most active platform members.

The European perspective on Open Innovation

Innovation policy has been a central instrument of the European Commission for many years. For the European Union, the Member States and associated countries, innovation policy has attracted increased attention not least due to the innovation gap between Europe and other regions of the world. Innovation policy issues are therefore now to be integrated in most policy areas in Europe. In addition, this should be reinforced with other development of the ERA priorities like gender equality and mainstreaming in order to allow for equality, justice and empowerment and agency. How innovation policy issues are set up, however, the kind of measures and instruments it takes into consideration have been subject to change and development over the years. In particular, the contemporary ambition of improving European innovation policy through the injection of innovative ideas by governments, businesses and academia, calls for some basic reflection on both innovation concepts and measures.

The European Commission over the last decade did a great job by promoting knowledge transfer issues, which was expressed by the "Commission Recommendation on the management of intellectual property in knowledge transfer activities and Code of Practice for universities and other public research organizations" from 2008. Recommendations from the European Commission generally have a considerable impact on national discussions (see also chart 1, appendix). Current concepts, like especially Open Innovation, challenge the conceptual approach of this former work that focussed basically on closed innovation concepts. There should be a reflection on the positioning of conventional knowledge transfer measures and instruments within a new Open Innovation scheme. A key response to this is to facilitate Open Innovation and cooperation.

Innovation will play an even more significant role in Horizon Europe; the third pillar will be devoted to innovation-related activities exclusively (Innovative Europe pillar¹³). New tools with the general aim of “encouraging cooperation, networking, and the exchange of ideas, funding and skills among national and local innovation ecosystems will be promoted. So Open Innovation is a central policy headline in the new framework programme, Horizon Europe.

Above this, business development and innovation today happen along regional and global value chains. This is highly important for an active Open Innovation ecosystem. Nevertheless, these value chains operate through different world regions and states and in several cases are dependent on states that are very volatile: in terms of their foreign policy and in terms of their industrial and innovation policy. This means for Europe as a whole that there is a need to carry out analyses both of global value chain dynamics, and, even more importantly, analyses of the uncertainties embedded here. The report by the Committee for the Future at the Finnish parliament "100 technologies for Finland and the World" (2015) is a very good example - also of how important it is to link different approaches toward analysing uncertain futures. A common European foresight process could help to develop adequate processual tools, methodologies and measures to better equip both policy builders and other stakeholders to face severe uncertainties. But, futures reasoning is also a work form that could be embedded in different processes at different levels (Neumann&Øverland, 2004; Karlsen&Øverland, 2012; Fahey&Randall,1998). It is also possible to analyse results for policy building purposes in Journals like Futures, European Journal of Futures Research, International Journal of Futures Studies, among others.

¹³ SWG OSI also supports the current name proposed for the third pillar “Innovative Europe”, as the former proposition “Open Innovation” does not reflect the idea and concept of Open Innovation and could easily be misleading.

Recommendations:

- The European Commission, in line with the Council Conclusions from May and November 2018, is invited to revisit its 2008 “Recommendation on the management of intellectual property in knowledge transfer activities” in the light of new developments like Open Innovation in the field of knowledge transfer. This review should encompass the issues and recommendations raised in the present opinion paper. Thus, when reviewing its Recommendation, the European Commission should consult the expertise of relevant stakeholders like the ERAC SWG OSI .
- In Horizon Europe, the now proposed name for the third pillar “Innovative Europe” in Horizon Europe should be preferred in respect to the first proposition “Open Innovation”, because this does not reflect the idea and the concept of Open Innovation and is misleading.
- As global value chains that are crucial for (open) innovation often operate through different world regions and states and in several cases are dependent on states that are very volatile, Europe as a whole should carry out analyses both of global value chain dynamics, and, even more importantly, analyses of the uncertainties embedded here. A common European foresight process should be launched to develop adequate processual tools, methodologies and measures to better equip both policy builders and other stakeholders to face those uncertainties. How to stimulate embedded foresight should also be a subject for reflection.

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Best practice examples



Growth Engines – Business Finland

Business Finland uses the name Growth Engine to describe cooperation networks – ecosystems – aimed at new business activities amounting to more than one billion euros. Growth Engines are implemented through an enterprise-driven partnership model between companies, research organizations and public actors, which strives to find solutions to global market disruption and create new growth sectors in Finland.

Growth Engine funding enables:

- Collaboration between companies of different sizes, research organizations and public actors to achieve a common concrete business goal.
- Launching a new operator, a platform company to achieve a business goal
- The construction of the platform company's business and through it generating extensive networking effects

The Government has directed EUR 60 million of funding for Growth Engines in 2018 (30 M€) and 2019 (30 M€). In addition, Business Finland directs its normal funding and services to projects that meet the ambitious and funding criteria of companies, research organizations and communities operating in Growth Engines, aiming at achieving a Growth Engine's business objective.

When a group of companies and other actors have identified a business spearhead with a global market potential amounting to at least 1 billion euros in new exports, which can only be achieved in collaboration with others. The Finnish competences also contribute to further development of the business spearhead. The companies are prepared to share the information and their professional competences that the cooperation requires within the limits agreed in advance.

For further information, please visit: <https://www.businessfinland.fi/en/for-finnish-customers/services/funding/growth-engines/growth-engines-funding/>



Helsinki Region Infoshare

Cities continuously collect and produce large quantities of data which are utilised in the planning, production and decision-making processes. It is also utilised in the evaluation of municipal activities. Traditionally, this data has only been in the city's internal use but since 2011 Helsinki metropolitan cities have been opening this data.

The Helsinki Region Infoshare (HRI) service aims to make regional information quickly and easily accessible to all. Essentially, HRI is a web service for fast and easy access to open data sources between the cities of Helsinki, Espoo, Vantaa and Kauniainen. The data published is mainly statistical, giving a comprehensive and diverse outlook on different urban phenomena, such as living conditions, economics and well-being, employment and transport. A good proportion of the data material offered by the service is GIS based.

The data can be used in research and development activities, decision-making, visualization, data journalism and in the development of apps. The data may be used by citizens, businesses, universities, academies, research facilities or municipal administration. The data on offer is ready to be used freely at no cost. There are no limitations on users; anyone interested in open data can participate.

The main operational activity is to support the producers of information in opening their data and to increase its utilization by multi-channel communication.



HENRi - Nestlé

HENRi, Nestlé's flagship global Open Innovation platform, was launched in July 2016 with a clear directive: to bring breakthrough innovation inside and create collaborative partnerships between Nestlé and the start-up / innovation community.

In short order, HENRi has grown into a multi-touchpoint brand engagement program, reaching new audiences and creating a new breed of shared value for Nestlé.

To date, 13 projects have been launched – attracting well over 400 applications. Pilots are already in progress with senior Nestlé business owners, and the impact is already being felt across the business.

In just two years, HENRi has established an engaging, credible and exciting new face of Corporate collaboration in the start-up world and a new route to market for a 150-year-old Swiss company.

HENRi seeks to provide its partners with a positive, valuable and collaborative experience – while joining together in a shared ambition to delivering real social, environmental or health impact.

HENRi is built around peer-to-peer relationships, founded upon openness, humility and clarity, and commitment, backed up by direct funding from Nestlé business units, who supply and manage the briefs.



Open Innovation in Science (OIS) Center – Ludwig Boltzmann Gesellschaft (LBG)

The LBG OIS Center is established as a leading international hub for investigating and experimenting with Open Innovation research practices. It generates and disseminates insights into the use of Open Innovation principles and methods in science. This allows to increase the permeability along the entire research process starting from crowdsourcing research questions to producing societal impact. With this approach, the LBG OIS Center aims to spark innovation in scientific research by providing hands-on experience offering specific services to support scientists and scientific organizations in applying Open Innovation methods and principles. The LBG OIS Center provides knowledge about the qualified implementation of Open Innovation in Science by:

- Re-thinking and re-designing scientific research through a shift towards working more openly, collaboratively and interdisciplinary
- Developing and testing new methods for integrating Open Innovation principles into scientific research and innovation processes
- Establishing new forms of stakeholder interactions and collaborations within science

To succeed in a competitive scientific system and balance curiosity and impact, scientists benefit from developing new partnerships, fresh forms of collaboration and innovative methods for generating and communicating novel scientific insights. At the same time, science is challenged to generate innovations, thereby contributing to addressing major societal issues.



National Open Innovation Strategy for Austria – Federal Government

Austria is the first country in the European Union to have developed a national Open Innovation Strategy. The aim of this strategy is to open up, expand and further develop the innovation system with the purpose of boosting its efficiency and output orientation. The Austrian Open Innovation Strategy pays special attention to the need for a focused expansion of knowledge and innovation processes in science and research, civil society and in politics and public administration. To master the increasingly complex challenges, the various stakeholders must engage in new forms of cooperation. Broadening the classic triple helix model (science and research, industry, public administration and politics) to a quadruple helix model (that includes civil society) is thus a logical step that can increase the innovative capability of the system and reduce the inherent risk of failure through the early involvement of society and the market. New actors from civil society help ensure that research and innovation processes address the right questions and contribute valuable ideas for solutions.

The measures set out in the Austrian Open Innovation Strategy will be implemented by the individual ministries in the areas falling within their remit in cooperation with the relevant stakeholders. Also the various actors at the provincial and municipal level are urged to do their utmost to bring the strategy to life. At the same time, the Federal Government explicitly invites interested parties from a wide range of areas to take inspiration from the content of the strategy and initiate their own open innovation activities.



Hack for Sweden

Hack for Sweden is Sweden's new platform for citizen-driven innovation and over 30 Swedish government agencies and companies are already cooperating to promote innovation through open data. Its aim is citizen-driven innovation. As part of the process of increasing the digitalization of the public sector, the Swedish Government put focus on open data and citizen-driven innovation. Public sector, academic sector and enterprises need to interact and collaborate. Through open and citizen-driven innovation, more people than ever can contribute to our welfare and together we can build the society we dream of tomorrow – Sweden 4.0.

Hack for Sweden is a government mission raised to increase the awareness and use of open data. Our focus and goal is to stimulate and broaden the use of open data for the benefit of society. We organize Sweden's largest yearly hackaton organized by government agencies.



TRANSUNIV Project

To better address societal challenges and improve the technology's valorisation, researchers are increasingly asked to leave a silo mindset and secrecy mentality. For instance, when regarding the European calls, their research must necessarily engage multi-stakeholders (citizens, policy makers, companies etc.) during the whole research and innovation process, in order to find public-oriented, sustainable and inclusive innovations. Doing so, researchers also enable an easier access to their scientific results, though appropriation processes and knowledge exchanges.

This is the reason why the partners of the TRANSUNIV project were eager to train their young researchers to such a Responsible Research and Innovation, by including a dedicated training in their doctoral schools and supporting it at different levels (trainings and cross border mobility).

This Interreg project organizes several activities including the Smart Innovation Bootcamps. These boot camps are workshops aiming at bringing together doctoral and postdoctoral researchers, PhD's supervisors and external operators (companies, public actors, etc.) from the cross-border region of France-Wallonia-Flanders, around common cross-sectoral and multidisciplinary issues. These boot camps help young researchers to integrate RRI principles and co-create their own transdisciplinary and transectorial research project on cross-border challenges and with relevant multi-actors.

The TRANSUNIV project is operated by 5 Belgian universities (KULeuven and Universiteit Gent in Flanders; Université de Mons, Université de Namur and Université catholique de Louvain in Wallonia-Brussels Federation) together with the French Communauté d'Universités et Etablissements Lille Nord de France (ComUE LNF).

The Transuniv project is funded by the European Development Fund. For more information on the project, visit : <http://www.transuniv.eu/>



Co-create program – Innoviris

The Co-create program is run by Innoviris, the Brussels Institute for Research and Innovation. It started in 2015, aims to increase the resiliency of the region through participatory by design research projects. In Co-create projects Brussels citizens become researchers in their own experimental set-ups in collaboration with research institutions, non-profit associations and private companies to find innovative solutions for the societal challenges they face. In the context of the co-creation programmes that focused on urban resilience in 2017, almost 70 actors worked together in 16 trans-disciplinary projects to find innovative solutions (research organisations, civil society associations, companies, public actors, etc.). For example, the Phosphore project brings together citizens, researchers, businesses and municipalities to improve waste collection and recovery in the Brussels-Capital Region .

Because the Co-create program is aiming at quadruple helix projects with citizens as the driving force, it seems logical that citizens should also be involved in the selection process (i.e. evaluation of the submitted proposals). The first test will occur in March 2019 with the evaluation of the proposals submitted to the 2019 call. In order to evaluate these proposals, a jury will be organized with both ‘trained’ citizens and academics, whose level of expertise will be considered equal. To this end, a group of citizens is currently following a training process.

An overview of the co-create projects via the eponymous programme is available on the website <http://www.cocreate.brussels>.



Health Innovation Hub Ireland (HIHI)

Health Innovation Hub Ireland (HIHI) is a joint initiative between the Department of Business, Enterprise and Innovation and the Department of Health, supported by Enterprise Ireland and the Health Service Executive to drive and increase collaboration between the health service and enterprise. In particular, it allows enterprise to access Ireland's leading health professionals who will pilot and test innovative products, services and devices.

Following the introduction of a pilot project in 2012 to test the viability of the hub model, an independent evaluation of the pilot in 2014 concluded that the health innovation hub had the potential to be a vital component of national innovation infrastructure and its value was recognised by the relevant stakeholders in the healthcare.

HIHI offers significant potential to improve healthcare and outcomes for patients, as well as for Ireland's health tech sector. It assesses all concepts for healthcare innovation from those on the frontline – from clinician to porter – and encourages healthcare professionals to get in touch with HIHI if they have an idea or solution to how something in their job might work better. It might be an issue local to one healthcare setting or it might be the next big medical advance.

The main objectives of the Health Innovation Hub are to:

- allow healthcare companies get access to the health service to test, validate and refine their products in a real-life environment;
- assist the health service find efficiencies and improvements by engaging with innovative companies creating solutions to problems they face; and
- provide healthcare practitioners inside the healthcare system who have ideas for new innovations with support for adoption and commercialisation.

Since its official launch in 2016, HIHI has launched four national calls (two focussed and two open), engaged with 370 companies and supported 48 projects including an online tool for doctors to monitor the physical activity of patients via a smartphone or wearable device, remote patient monitoring and scheduling services to improve patient flow.

For further best practice examples, see also:

<https://www.visioncritical.com/5-examples-how-brands-are-using-co-creation/>

Appendix: survey of Open Innovation in Europe

In order to get a full picture on the status of Open Innovation in Europe, the Task Force – itself representing nine countries – decided to design a survey of 30 targeted questions on the status of Open Innovation and to ask all delegations present in the ERAC SWG OSI to provide answers for each country. 20 countries, as shown in the picture below, responded to the survey: Austria, Belgium (Wallonia), Bulgaria, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Norway, Portugal, Romania, Slovenia, Sweden, Switzerland and the United Kingdom. These responses provide a good picture of the status quo of Open Innovation in Europe. Hence the results of the survey were analysed by the Task Force on Open Innovation and provide a quite comprehensive overview on the status of Open Innovation in the European nations.

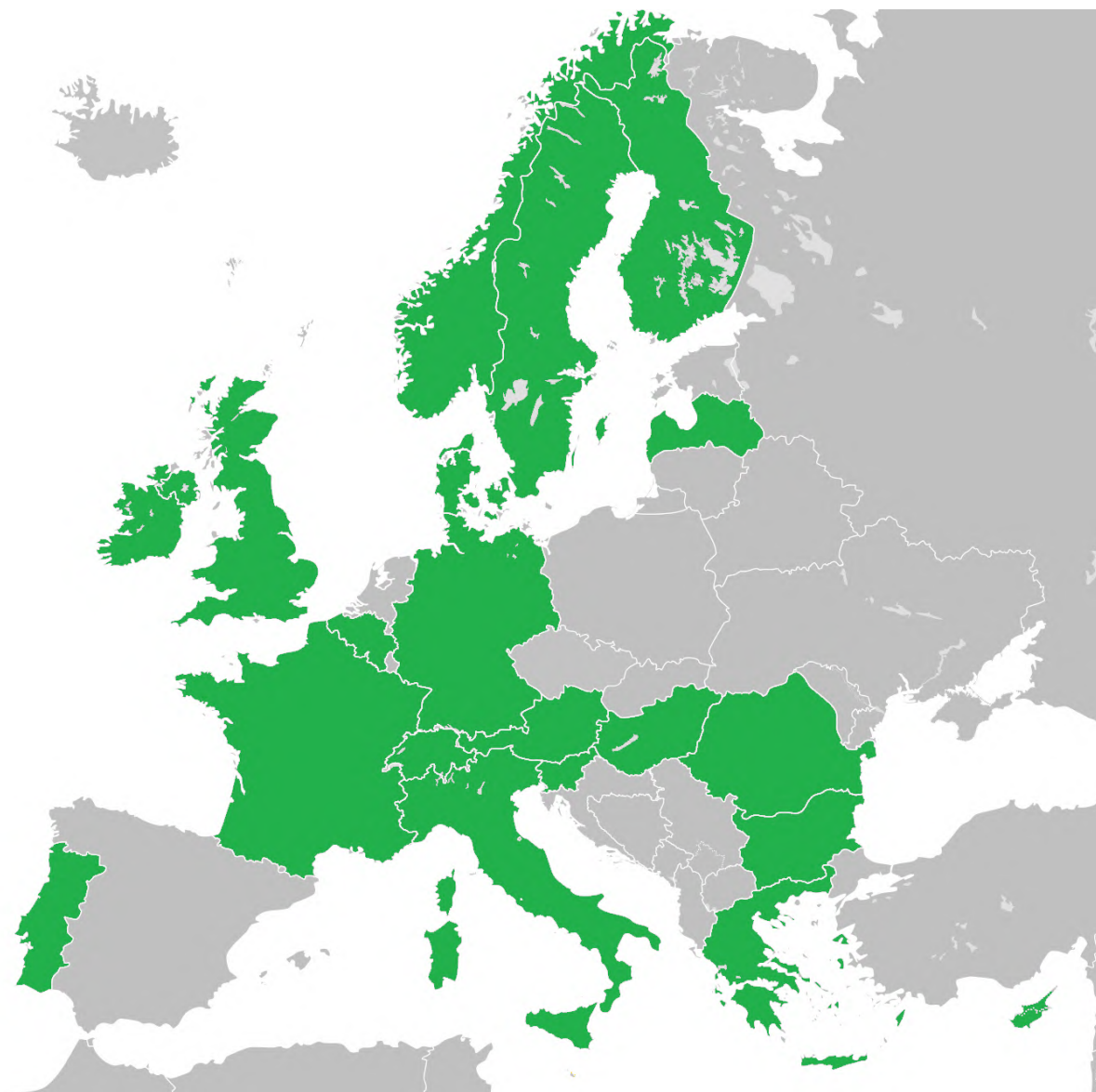


Chart 1: In our country regarding the impact on implementation, recommendations from the European Commission have generally...

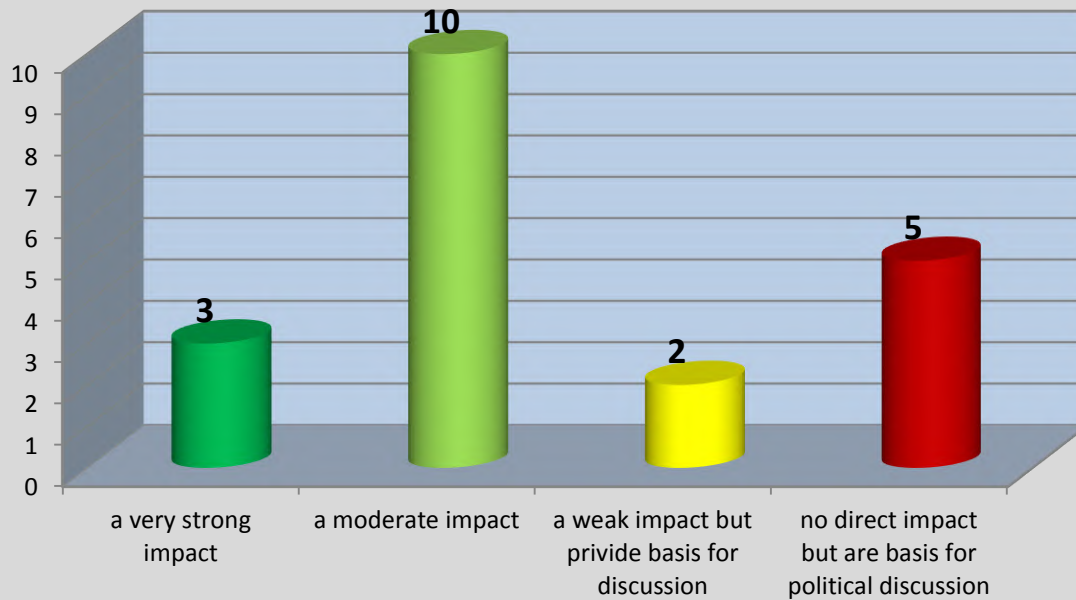


Chart 2: Do clear policies for Open Innovation exist in your country?

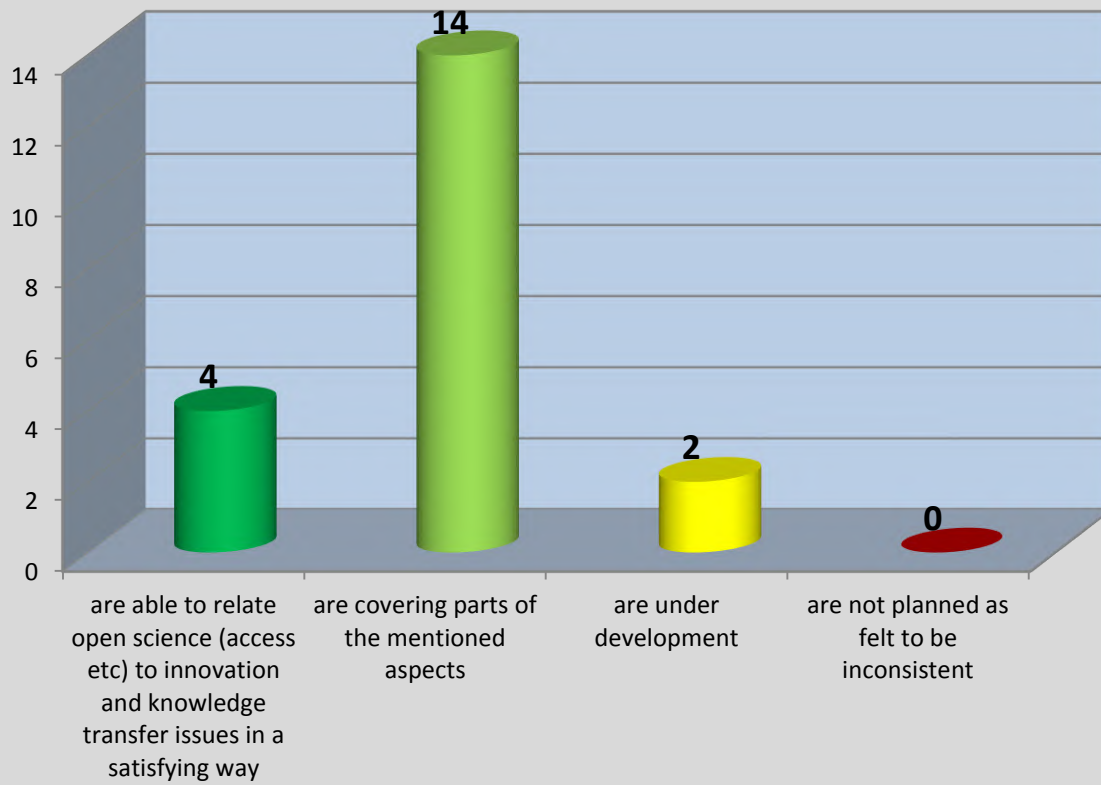


Chart 3: Are Open Innovation policies implemented for academia and research organisations?

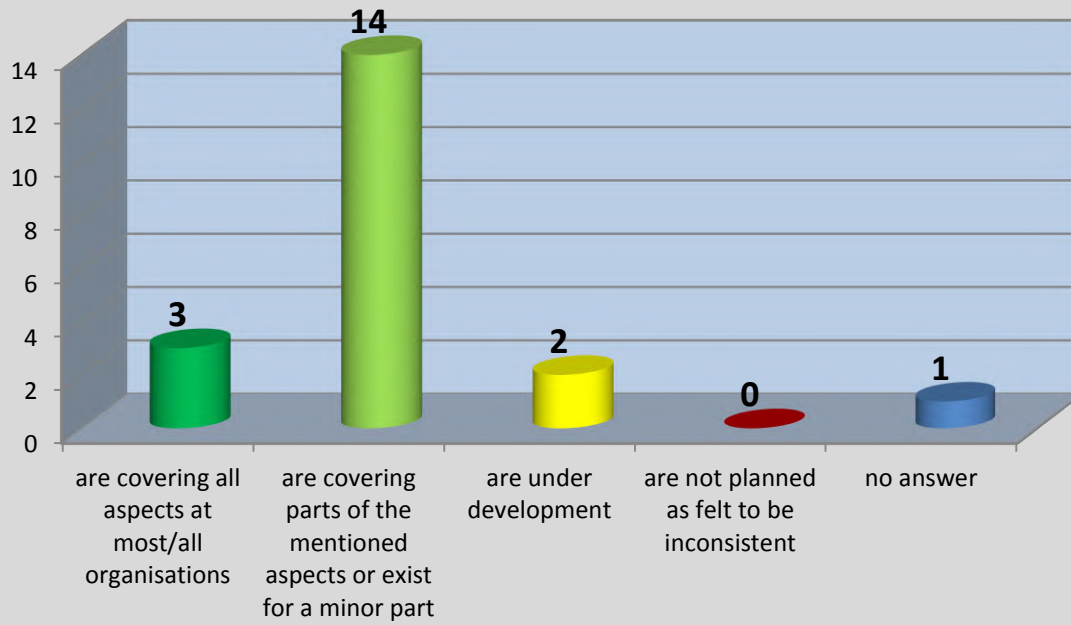


Chart 4: Are Open Innovation policies implemented for funding agencies?

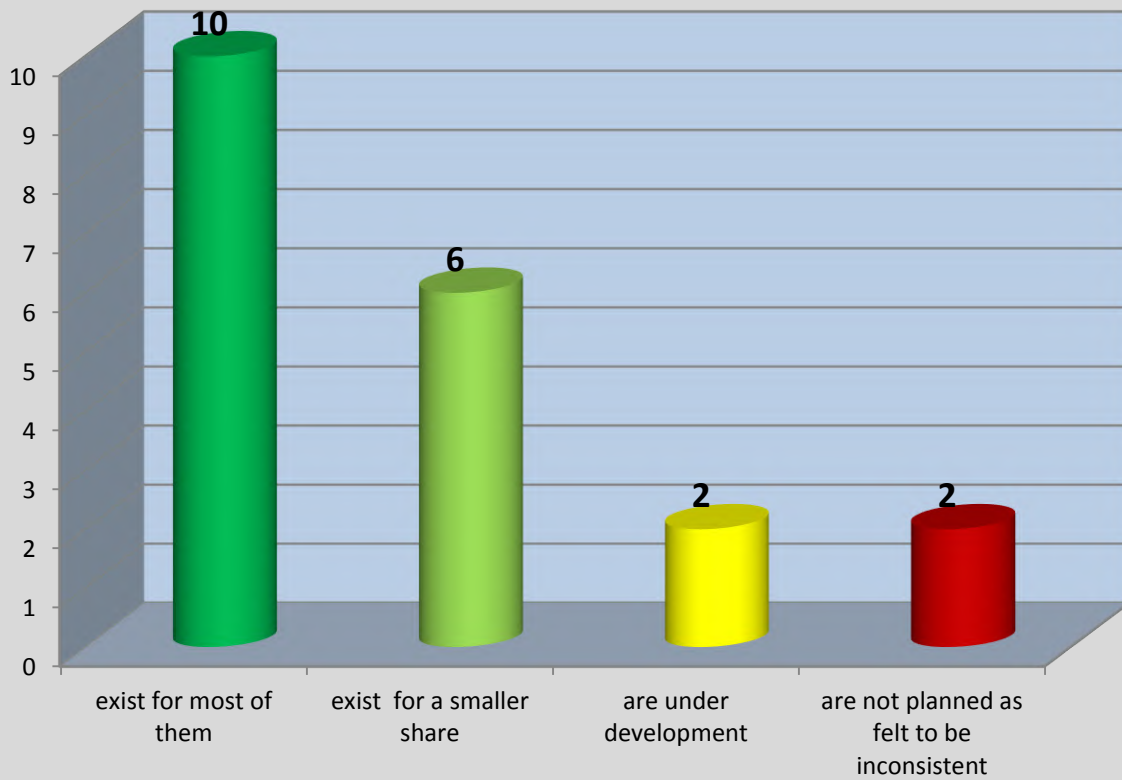


Chart 5: In our country the progress of Open Innovation and Co Creation in the last years can be rated the following :

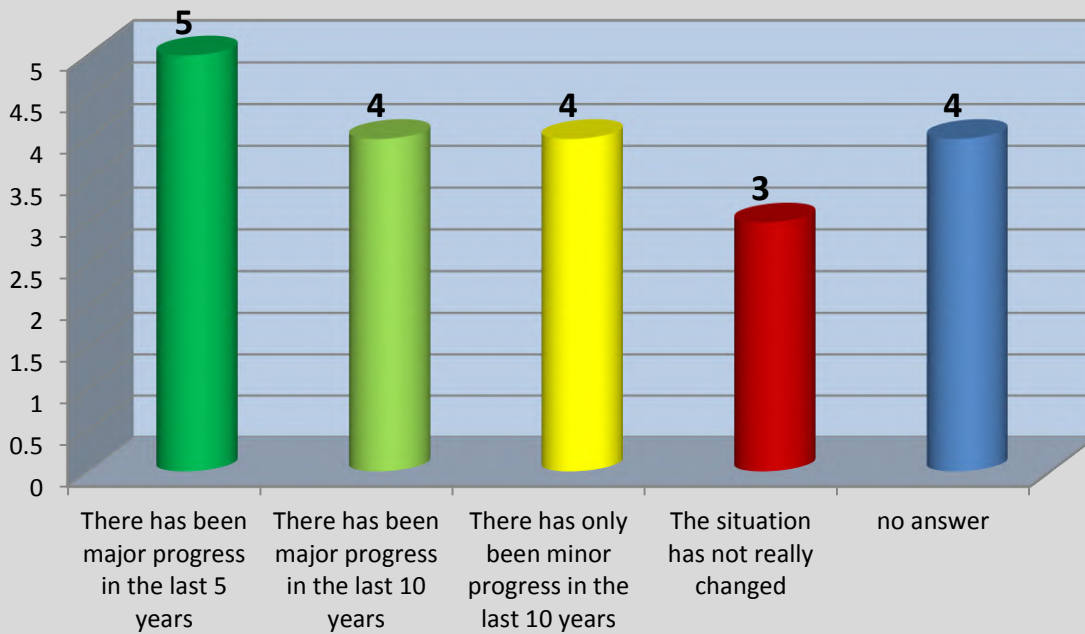


Chart 6: In our country, the existing national guidelines for IP-management in open innovation/ knowledge sharing and transfer of knowledge were revised in light of the current Code of Practice.

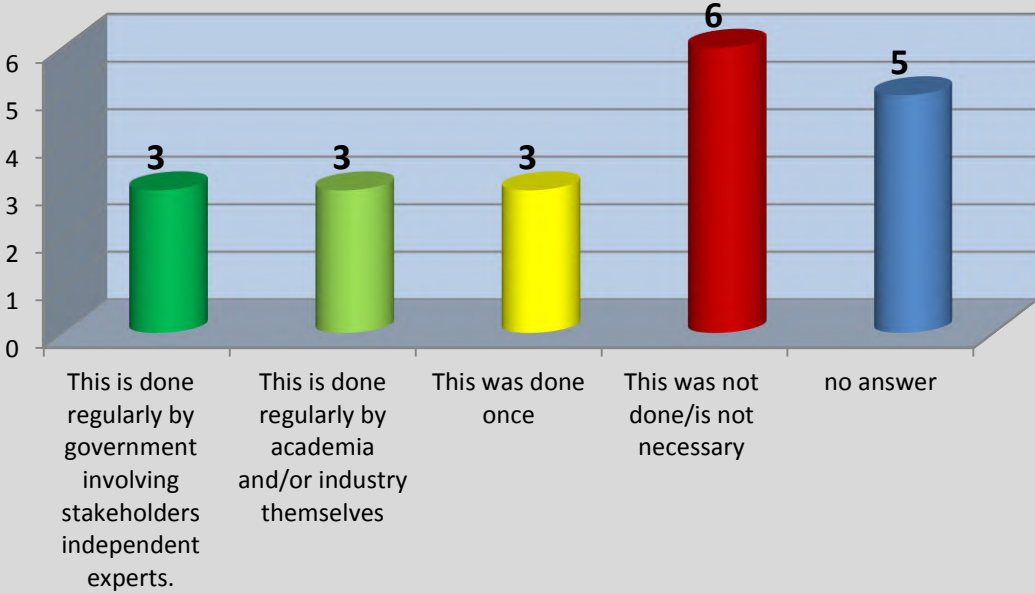


Chart 7: In our country, Open Innovation clearly falls within the responsibility of one ministry, which is charged with coordinating knowledge transfer promotion initiatives with other ministries.

