European Commission

Report about the Results of the Survey

Towards a Policy Dialogue and Exchange of Best Practices on Knowledge Valorisation

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Research and Innovation

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Towards a Policy Dialogue and Exchange of Best Practices on Knowledge Valorisation

European Commission
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Report about the Results of the Survey

Towards a Policy Dialogue and Exchange of Best Practices on Knowledge Valorisation

[edited by Stefanie Kalff-Lena]

2021

Directorate-General for Research and Innovation
Prosperity Directorate

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1 Introduction

The fight against the coronavirus has demonstrated the crucial role of research and innovation (R&I) in informing policy, in making our societies resilient and in rebuilding the economy. Valorising research results and scientific knowledge is key to deliver new responses to the challenges and opportunities the EU is facing, in particular the twin climate and digital transitions. More efforts are necessary to turn scientific knowledge into solutions that benefit the wellbeing of citizens and economic prosperity. Europe has to put its knowledge to work.

A new European Research Area (ERA) for Research and Innovation[1] will reinforce the transformation of R&I results into the economy and society among its strategic objectives. This aims to ensure Europe's competitive leadership in the global race for technology while improving the environment for business R&I investment, deployment of new technologies and enhancing the take up and visibility of research results in the economy and society as a whole. A new ERA will support European companies to become world leaders and foster technological sovereignty in key strategic areas (e.g. Artificial Intelligence and data, quantum computing, batteries, hydrogen, health, critical materials and technologies, smart mobility, food, security) in line with the model of open strategic autonomy. At the same time, it is crucial to increase citizen participation in technology choices, thereby ensuring acceptance and broad uptake.

As stated in the Science, Research and Innovation Performance of the EU 2020 Report[2], Europe needs to maximise the value of R&I results by promoting a culture of knowledge valorisation, ensuring that knowledge-based institutions know how to manage their intellectual capital and improving the links between academia, industry, citizens and policymakers.

The Commission has initiated a number of activities to address these objectives starting with increased awareness raising[3]. Particular emphasis is put on the management of intellectual property, including in the European Framework Programme for Research and Innovation. The Manifesto for EU Covid-19 Research[4] is a concrete example for facilitating access to knowledge and boosting its use to fight the pandemic. Moreover, Directorate-General Research and Innovation has published a first stocktaking and policy review of 'R&I valorisation channels and tools'[5] in Europe and beyond.

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[1] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2020:628:FIN

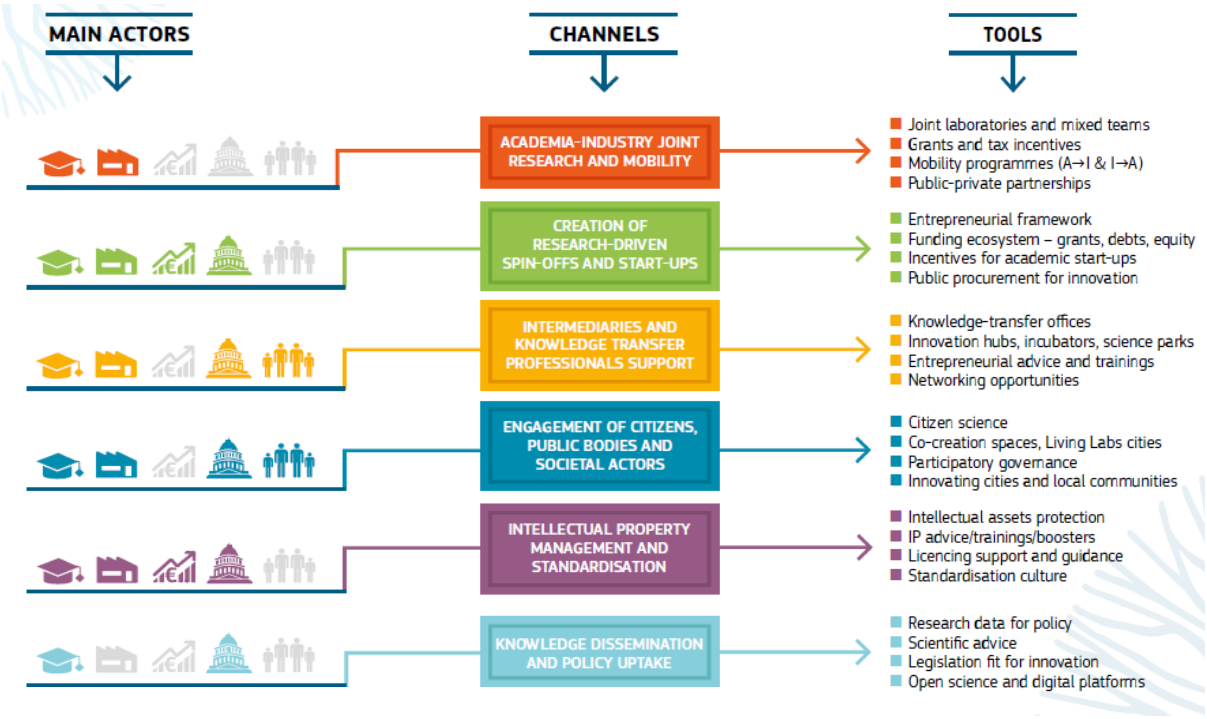
[2] https://ec.europa.eu/info/research-and-innovation/strategy/support-policy-making/support-national-research-and-innovation-policy-making/srip-report_en

[3] For example publication of factsheets on 'Valorisation – Making results work for society'; 'Sharing knowledge and informing policy' and 'Intellectual property fosters innovation and societal impact'.

[4] https://ec.europa.eu/info/research-and-innovation/research-area/health-research-and-innovation/coronavirus-research-and-innovation/covid-research-manifesto_en

[5] https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/f35fded6-bc0b-11ea-811c-01aa75ed71a1

From the publication '[R&I valorisation channels and tools]':



Many strategies and instruments have been developed to enhance knowledge management, sharing and valorisation at European, national and regional level. However, this wealth of experience has not been capitalised on in a structured way. An in-depth exchange among policy makers and stakeholders at European level is needed. It should enable peer learning and jointly strengthening knowledge valorisation in the EU. It should take account of the paradigm shift from treating 'knowledge transfer' as a supply-side issue towards an approach based on dynamic knowledge flows and co-creation among different types of actors, including increasingly civil society; and it should consider the new challenges to international research cooperation while safeguarding EU interests.

The survey '*Towards a Policy Dialogue and Exchange of Best Practices on Knowledge Valorisation'* asked for feedback and comments from EU Member States and interested EEA countries on concrete areas for a policy dialogue and exchange of best practices. The survey also collected best practices by drawing on the expertise of the participating countries.

This report summarises the results of the survey, which ran from 23 April until the end of June 2020. In total, 23 countries participated: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Greece, Ireland, Italy, Lithuania, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, and Sweden.

The feedback has been very rich, which is particularly gratifying as the survey contained many open questions. We thank all those involved for their valuable contributions!

This provides a robust basis for the evaluation of the survey and for drawing conclusions. Taking account of the survey results, the next steps are outlined in last chapter of this report. They shall be further developed and implemented together with Member States and stakeholders with the aim to co-create a sustainable European policy of knowledge valorisation.

2 Key Takeaways

Key challenges:

- **Managing knowledge assets in open R&I systems**. Reconcile Open Science/Open Innovation with IP exploitation strategies underpinning EU policy objectives; strengthen modern IP management in public research organisations
- **Incentivising and connecting valorisation partners**. Connect valorisation partners from research, industry and society in a more efficient way ensuring a comprehensive and systemic approach to the uptake of science-based solutions
- **Citizen engagement for knowledge valorisation.** Come to a common understanding of the objectives, role and means of 'citizen engagement' in knowledge valorisation
- **Funding of knowledge valorisation activities.** Adopt a strategic approach to knowledge valorisation funding, which is interlinked with research funding, equipped with corresponding resources and uses a mix of instruments taking account of best practices developed across Europe

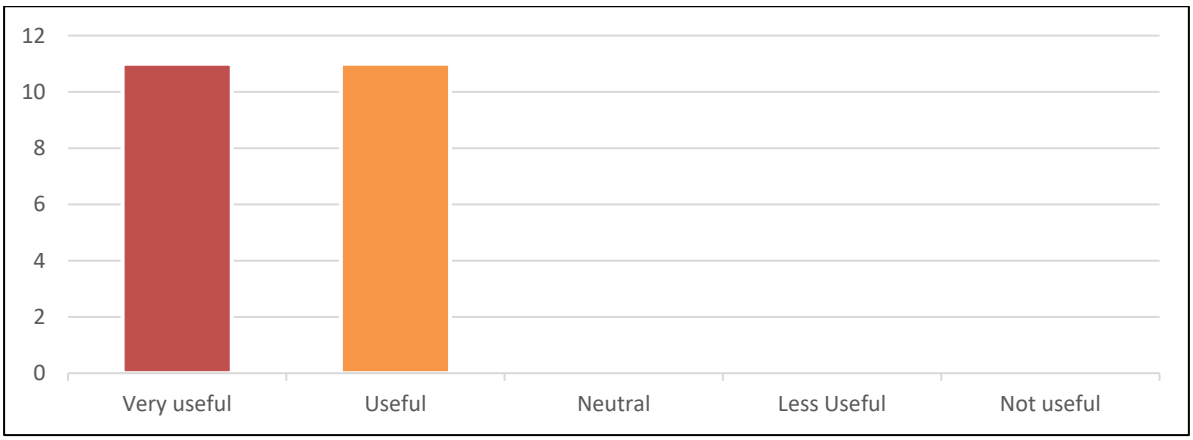
Actions:

- **Policy dialogues and exchange of best practices.** Set up policy dialogues and exchanges of best practices among Member States addressing the challenges above and taking account of the specific topics identified in this report (e.g. Knowledge Transfer Offices)
- **Sharing experiences among all stakeholders.** Support sharing experiences and successful approaches among stakeholders, among different types of stakeholder groupings and with policy makers
- **Targeted events.** Design events with clear objectives that determine the appropriate format, scope and level of participation to ensure relevance and impact
- **New tools and formats.** Explore further ways to spread best practices, for example via platforms, trainings, awareness raising etc.

3 Analysis of Survey Results

3.1. Interest in Regular Policy Dialogue and Exchange of Best Practices

Question 9: How useful do you consider to be a structured and regular policy dialogue and exchange of best practices on knowledge valorisation among Member States?



The survey confirms the great interest of Member States in an exchange on knowledge valorisation. All participating countries indicate that a structured and regular policy dialogue and exchange of best practices would be either useful (11) or very useful (11).

While all want to learn how others are coping with the challenges, it will be crucial to define clear objectives and identify the appropriate format, scope, type and level of participation for any action or dialogue to ensure they will meet the needs.

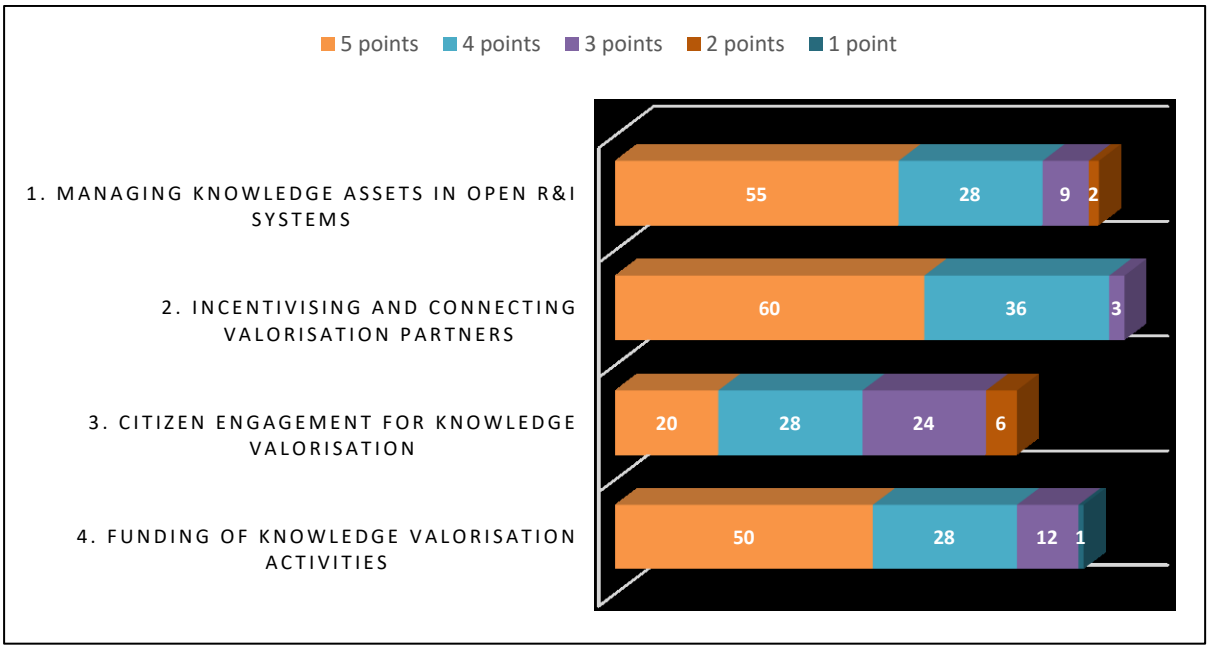
In this context, Austria remarks that the situation varies in different countries and regions so that the aim cannot be to develop a 'one size fits all' model. Czechia considers that writing down national valorisation policies is a good step forward and that it would be helpful to share experiences with Member States that have a modern overall approach. Denmark prefers to put the resources on a format that allows 'presenting in depth concrete examples/presentations from stakeholders on the front line, with the possibility for participating experts to ask questions and exchange view points and ideas'. Some time should also be devoted to 'what did not work well', according to Austria and Sweden, to complete the learning experience.

Overall, the survey result indicates clear added value to take action at EU level that is co-created with Member States to ensure relevance and impact. It resonates with the Council conclusions "Accelerating knowledge circulation in the EU"[6] from 29 May 2018 that invite Member States to step up efforts to examine and share best practices on knowledge transfer.

[6] http://data.consilium.europa.eu/doc/document/ST-9507-2018-INIT/en/pdf

3.2. Priority Areas for Policy Dialogue and Exchange of Best Practices

Question 1: How important are the following areas for exchange of best practices and peer learning? (1=lowest importance; 5=highest importance)



The background document to the survey proposes four potential areas for peer learning on knowledge valorisation (see annex 2 and below). The description of the four areas is based on the brainstorming with Member States and EEA countries at the workshop *'Knowledge Valorisation: Policies and best practices to transform research results and innovation into societal and economic value',* organised by DG Research and Innovation on 12 November 2019. The areas summarise and cluster the aspects that Member States and EEA countries identified as potentially interesting for an in-depth examination.

The survey replies show that all four areas are considered very relevant.

At the same time, there is a clear ranking of priority areas: Area 2 'Incentivising and connecting valorisation partners' has received most points (99), with almost unanimous agreement that the topic is of highest or high importance. In second place is area 1 'Managing knowledge assets in open R&I systems' (94) closely followed by area 4 'Funding of knowledge valorisation activities (91). Area 3 'Citizen engagement for knowledge valorisation' with the lowest score (78) shows a split between a few countries considering the topic to be highly important, a few little important and a large group being rather neutral.

To summarise, there is a lot of interest in sharing experiences and exploring new trends in the more established areas of knowledge transfer and valorisation, but also substantial curiosity to venture into new territory like 'citizen engagement' drawing on the expertise of Member States that have already experimented in the field.

3.3. Comments on Priority Areas

Questions 2-6 of the survey asked Member States and interested EEA countries to comment in free text on the four potential areas for peer learning and the specific aspects that should be considered under each of them. Question 6 invited further suggestions.

Question 2: Smart management and protection of knowledge assets in open R&I systems

Description of the area in the survey:
Experiences could be shared on conditions and approaches for smart management of research results and IP protection, and how these are implemented in synergy with and underpinning open science/open innovation strategies. The role and funding models of Knowledge Transfer Offices (KTOs) at universities and public research organisations could be scrutinised in this context as well as measures supporting researchers and spin-offs/start-ups/SMEs to manage their knowledge assets. Experiences in IP management in research and knowledge transfer collaborations with third countries could also be looked at.

Summary of replies:

- **Reconcile Open Science/Open Innovation with smart IP management**: While Open Science and Open Innovation, on the one hand, as well as IP management and protection, on the other hand, are considered very important, there is a need to better coordinate and balance these policies. This concerns all levels (political/operational) and notably the concrete implementation of these policies. Many Member States refer to this issue in their comments (Austria, Belgium, Croatia, Czechia, Estonia, France, Ireland, Italy, Lithuania, Netherlands, Poland, Romania, Sweden, Slovakia), which shows that it is currently one of the key challenges of knowledge valorisation. The challenge is all the more topical in the light of the EU policy objective to drive strategic autonomy in key sectors in Europe at a time of increasing global competition.

  Austria welcomes the intention of the Commission to review its Recommendation on the management of intellectual property in knowledge transfer activities from 2008[7]. Belgium writes that the focus should be on the need of standardisation and harmonisation at European level, quoting as an example the 'Minimum standards and guiding principles for setting up NCP systems'. Croatia and Czechia consider that national IP valorisation strategies and legislation would be important knowledge to be shared. France proposes an IP Charter.

  As far as universities/RTOs are concerned, it is felt that the scientific community is well informed and involved in Open Science and often also in Open Innovation. However, it is not always evident for the individual researcher in the large R&I ecosystem where the responsibility of the individual lies and where that of the organisation when it comes to IP protection and open innovation strategies. More attention should be paid at organisational level to the possibilities of IP management in research and knowledge transfer and how they relate to requirements for openness like open access to research data and publications (Greece, Italy, Netherlands, Poland, Romania, Sweden). Policies and approaches could be spread that tackle this issue at organisational level.

[7] C(2008) 1329

- **IP management in research cooperation with third countries**: Closely linked to the previous point is the management of intellectual assets in international research cooperation and knowledge transfer collaborations with third countries (Belgium, Romania). It touches upon issues like reciprocity, IP protection in different legal systems and the fundamental question of if and when research (data) represents a potential economic value that should be handled in a way that safeguards EU benefits from the publicly funded research. Examining different strategies and approaches might contribute to develop common guiding principles in an evolving international research system.

- **Knowledge Transfer Offices (KTOs) at public research organisations**: The key role of KTOs in knowledge valorisation was a further focal point of many Member States' comments (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Estonia, France, Italy, Lithuania, Portugal, Romania). Various aspects are mentioned that could be examined such as the role and specific tasks of KTOs (including their role in regional innovation systems), the different KTO funding and contractual models, the qualification and training of KTO staff (especially in IP management and access to finance), tools/platforms used, regional and national networks of KTOs, international cooperation as well as performance assessment[8]. Networking and close cooperation between KTOs is important to expand exploitation potential, use synergies and intensify cooperation with business. In the collection of national and international best practices (survey questions 7&8), a noteworthy number of thriving KTO networks has been pointed out by Member States. The success factors and challenges of these networks could be one focus of an exchange of experiences with particular attention to the effective involvement of smaller entities with limited human and financial resources and accessibility to customers.

- **Awareness raising, training and support for IP management and protection:** IPR literacy is the pre-condition for the smart management of knowledge assets. Member States see a need for improvement, in particular for researchers and SMEs, and are interested in respective support measures (Austria, Belgium, Cyprus, Estonia, Greece, Finland, France, Italy, Sweden, Slovakia). These may include, for instance, model contracts for knowledge/technology cooperation between universities and business (e.g. licence agreements, material transfer agreements, patent purchase agreements, R&D agreements), dedicated training and awareness raising. The promotion of joint patent applications between companies and public research organisations (Italy) and managing university patents (Finland) could be considered as well as the experiences with IP management in clusters (Norway).

- **IP system and knowledge valorisation:** Member States point in the survey to a number of issues that relate directly to the legal framework for IP protection and the different instruments. They describe, for example, the use and advantages of particular IPRs in their respective countries such as industrial design (Estonia) or the utility model (Spain) for a fast protection of innovation. The allegedly hampering effect of the Copyright Directive on content sharing is raised by Austria. Finland underlines that the collaboration of European patent authorities is vital due to the delays in implementing the unitary patent and emphasises the role of patent attorneys in a well-functioning IP system. Although all these aspects are very relevant for knowledge valorisation, they seem less suitable for an exchange of best practices and rather require different formats and settings to be addressed, including IP information and training activities.

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[8] In this context attention is drawn to the report 'Knowledge Transfer Metrics - Towards a European–wide set of harmonised indicators' from a European Commission Expert Group: https://ec.europa.eu/jrc/en/publication/knowledge-transfer-metrics-towards-european-wide-set-harmonised-indicators

Question 3: Incentivising and connecting valorisation actors to stimulate innovation

Description of the area in the survey:
Successful valorisation happens at the interface of research-economy-society and requires to think outside the box and to interact with partners from different backgrounds. Experiences could be exchanged on novel initiatives connecting different actors for stimulating valorisation activities. How to embed a valorisation culture in public research is one challenge in this respect (incentives and measures to encourage academics to collaborate with economic actors, to launch academic start-ups, notably by female researchers and graduates, etc.) Another focus could be on matchmaking SMEs and researchers as well as supporting SMEs to access research that helps them to digitise, modernise and develop innovations. Models and practices fostering disruptive thinking through cross-sectoral, cross-disciplinary joint teams and informal interactions could be shared. Networking and mobility between different actors also play a crucial role for knowledge dissemination and uptake.

Summary of replies:

- **Promoting inter-sectoral collaboration**: The replies to this question confirm that the focus of peer learning should be on efficient methods of connecting different valorisation actors – from different disciplines and sectors, from the supply and demand side, from the public and private sectors (Austria, Belgium, Czechia, Finland, France, Italy, Malta, Netherlands, Norway, Poland, Portugal, Spain, Sweden). Recently, the European Skills Agenda[9] has emphasised the importance of increased academia-industry cooperation and alignment to address the challenges of the twin green and digital transitions.

  Persisting silos are major obstacles to successful knowledge valorisation. A wide variety of policy measures tries to tackle this deficiency. The following ones are highlighted in the survey: financial support and incentives for public-private collaborations, competitive awards and labels, tax incentives, advice and coaching mechanisms, mobility schemes, outreach activities and networks as well as platforms connecting people from science, industry and society. The role of (regional) ecosystems and clusters are also considered relevant in this context (Netherlands, Norway). (See also comments to area 4 - Funding of knowledge valorisation activities in Member States).

  As underlined by Sweden[10], a sustained application of new research-based solutions and knowledge demands often a long-term commitment and a variety of actions addressing different inter-linked aspects, such as organisational changes, behaviour-modifying interventions and economic/financial incentives. Consequently, examining best practices of knowledge valorisation should also look at the synergies between measures and the extent to which they take into account all aspects and actors in the valorisation process, including SSH expertise (Austria, Netherlands) and end user perspectives.

[9] The Communication on a "European Skills Agenda for sustainable competitiveness, social fairness and resilience" has suggested, among other things, to test a new **talent-based industry-academia knowledge exchange** to meet companies' research and innovation needs, complementing university-business collaboration.

[10] The example, provided by Sweden, from the health care area in 2012 illustrated that 'approximately 30% to 40% of the patients do not have access to a treatment that complies with the best available knowledge, and as many as 1 of 5 patients receives treatment that is unnecessary or harmful.' See summary and conclusions in English at https://www.sbu.se/en/publications/sbu-assesses/implementation-of-psychiatric-guidelines-and-evidence-based-knowledge-in-the-primary-care-sector/

- **Embedding a valorisation culture in public research**: Public universities are not embracing the 'third mission' in society and economy to the same extent as teaching and research. A number of Member States are interested in discussing incentives for public research organisations as well as researchers to engage in the various channels of knowledge valorisation and commercialisation along with practical examples (Austria, Belgium, Cyprus, Czechia, France, Ireland, Italy, Lithuania). This discussion will need to cover also the academic reward system with its emphasis on scientific publications for scientific careers and reputation (Austria, Czechia, France).

- **Spin-offs and academic start-ups** are often considered a 'royal road' to the exploitation of the economic potential of publicly funded research. An exchange on lessons learnt from implementing support measures, including incubators and public funds facilitating access to finance, is considered useful (Austria, Cyprus, France, Greece, Lithuania). The scope could encompass innovative forms of entrepreneurial education stimulating open innovation practices and fast uptake of research-based solution (Italy).

- **Supporting SMEs to access research results**: While large companies are generally active in connecting to researchers and acquiring the latest research knowledge, the demand from smaller companies is much lower. They often lack the appetite, the time, the resources and/or the capacity for searching and taking up new knowledge. A number of Member States ask to put an emphasis on supporting SMEs to access research that helps them to digitise, modernise and develop innovations (Czechia, Estonia, Ireland, Italy, Lithuania, Malta, Netherlands, Norway, Sweden). Several aspects are mentioned in this context, including sharing labs and equipment in open access mode; test bed structures; thematic or regional knowledge transfer centres, intermediaries and technology/competence brokering; information and networking opportunities; connecting research, SMEs & societal organisations; education and training; open innovation projects etc. (See also respective best practices in the annex).

- **Thinking out of the box**: Creating innovative solutions means thinking out of the box of academic niches, industrial sectors and societal boundaries. This implies finding new valorisation models and linking a broad variety of actors with different expertise and unusual backgrounds. In their survey replies, Member States refer to novel approaches that may provide inspiration: idea labs (see annex); involvement of students in multidisciplinary teams with researchers, start-ups and employees of established companies (Italy); models and practices promoting disruptive and long-term thinking in enterprises (Greece); research hybrids involving the arts, and the arts sections of universities, to stimulate innovation (Belgium); or supporting challenge-driven innovation that puts the emphasis on broad cooperation of all relevant actors (Sweden).

Question 4: Citizen engagement for knowledge valorisation & measuring societal impact

Description of the area in the survey:
Although citizen engagement and citizen science are well-accepted Open Science practices, citizen engagement as a tool for R&I valorisation is relatively new and so far mainly limited to communication and dissemination of research results. Best practices could be identified and discussed that promote demand-driven uptake of research-based solutions in cities and regions, by citizens, societal actors as well as public authorities. Approaches to measure societal impact could be considered.

Summary of replies:

- **Demand-driven uptake of research results by citizens and societal actors**: Successful knowledge valorisation requires identifying the needs of end-users/consumers/citizens. This calls for communicating and engaging with citizens at an early stage in the process and considering their ideas for societal impact, as emphasised by Sweden. However, research actors usually consider connections to citizens/society to be a major challenge.

  Citizen engagement is an evolving and dynamic field. Developing new methodologies and experimentation are crucial to reflect changing societal settings. While a number of good practices exist (see annex), experiences in this dimension of knowledge valorisation are not that widely spread. Some Member States (Belgium, Romania) suggest, as a starting point of discussions, to come to a common understanding of what 'citizen involvement' means and which benefits in terms of knowledge valorisation are expected. The articulation between national and regional levels should also be considered (France).

  There is considerable general interest in an exchange of methodologies and practices of citizen engagement (Austria, Belgium, Croatia, Cyprus, Estonia, France, Ireland, Italy, Lithuania, Norway, Poland, Portugal, Romania, Sweden). It should address the feasibility, sustainability and long-term impact of activities. One question is how to better recognise and value researchers for their involvement in citizen engagement activities (see also previous question) and how to equip them with the necessary skills and support (Sweden). An additional proposal is to get acquainted with innovative mechanisms for involving citizens and stakeholders in evaluation processes in order to select R&D results for practical implementation (Lithuania).

- **Citizen science, science communication and scientific literacy of citizens** are closely related issues that are also referred to in the survey replies (Austria, Estonia, Croatia, Italy, Norway, Poland, Sweden). They prepare the ground for the co-creation, uptake and acceptance of research-based innovation.

- **Cities, regions and public authorities as valorisation actors**: Particular attention is paid to measures that foster demand-driven uptake of research-based solutions in cities and regions by citizens, societal actors and public authorities (Belgium, Czechia, Estonia, Norway, Romania). Cities, regions and other public bodies can foster knowledge valorisation by defining problems and challenging researchers and innovators to develop solutions. Different kinds of platforms linking local actors and researchers could be scrutinized (Belgium) as well as the role of public procurement (Czechia, France, Portugal).

- **Societal readiness and societal impact**: Societal Readiness Level (SRL) is a tool of assessing the societal adaptation of an innovation to be introduced in society. A discussion on defining and measuring SRL could support the knowledge valorisation policy (Italy).

  A subject of interest to a number of Member States (Belgium, Cyprus, France, Italy, Poland) is how to measure societal impact of scientific research. Some approaches are enlisted to in the annex.

Questions 5: Funding of knowledge valorisation activities in Member States

Description of the area in the survey:
What share of public R&I investment is devoted to support valorisation of (publicly funded) research results? Experiences could be shared on different approaches, including synergies with other policies. Various ways of financing knowledge dissemination and

valorisation could be explored ranging from public funding (e.g. for Proof of Concept, boosting spin-offs) through universities/research institutions generating income through IP and attracting private investment to accessing private finance. Experiences with models of mixed funding could be particularly interesting (e.g. shared labs, public-private partnerships, clusters).

Summary of replies:

- **Funding strategies for knowledge valorisation**: Funding of knowledge valorisation activities has been rated as the third topic for peer learning, and it is a determining factor for the policy approach to the different valorisation channels. Member States are interested in sharing which financial support is provided, which instruments and funding models are used and how they are combined to create a thriving valorisation ecosystem (Belgium, Cyprus, Croatia, Czechia, Estonia, Greece, France, Ireland, Italy, Lithuania, Norway, Portugal Romania, Spain, Sweden). According to Austria, this issue, amongst others, should be included in the envisaged review of the 2008 EC Recommendation on IP management in knowledge transfer activities.

  While investment in R&D is well described and monitored, the public support to knowledge transfer and valorisation is less clearly defined and traceable in terms of investment and impact. This may be largely due to the complexity of the process of turning research results into tangible societal and economic benefits, which is the subject of interventions of different national Ministries and institutions, shared competences between national and regional levels, a combination of horizontal general measures and more thematic or sectors-specific schemes. Although the policy mix will vary across countries and depend on national conditions and preferences, a European dialogue[11] could provide impetus for policy reform and developing long-term strategies as well as strengthened cross-border collaboration. Complementarities and synergies with EU funds, like the European Structural and Investment Funds, are an important angle of this complex issue (Croatia, Czechia, Greece, Romania).

- **Framework for public research organisations and researchers**: Some Member States integrate requirements for interactions with society and business fostering knowledge valorisation in their general agreements with public universities/research organisations (e.g. Austria) or provide respective financial incentives for researchers (e.g. Spain). Experiences on these approaches could be shared, including how they are monitored.

- **Combing public and private funding and innovative models**: The joint investments of public entities and private bodies in infrastructures, networks and projects underpin these players' commitment to knowledge valorisation and forge long-term collaborations. Models of mixed or blended funding are therefore attractive and should have greater impact than unilateral measures. They are of particular interest (France, Italy, Lithuania, Norway, Portugal, Romania), including clusters (Norway), and public-private partnerships (Portugal). Another focus of an exchange of best practices could be on innovative finance models, in particular, those linked to public research like innovation funds in public R&I institutions (Lithuania) or Proof-of-Concept (POC) funding schemes (Italy, Portugal).

[11] Ireland refers in this context to TAFTIE, the European Association of Innovation Agencies, which are exchanging best practices and whose expertise should be included in a dialogue as well as those of other relevant groupings.

Question 6: Any other suggestions (including other potential areas for peer learning)?

This open question has invited Member States to raise new topics or elaborate on issues raised in connection with the four areas of knowledge valorisation. Many comments have been taken up in the previous sections of this report complementing the analysis.

Additional points that have been made:

- Impact of competition law and state aid regulation on knowledge valorisation activities and IP transfer (Estonia, Ireland, France);
- Reconsider the wording of the present survey or how we address these questions to meet the concerns of a larger variety of practitioners and researchers than the inner academic circles (Belgium);
- In-situ training (for valorisation professionals) at European level (as an example: the FATTE+ programme - France-USA Technology Transfer Fellowship Exchange Program by the French General Consulate in Boston) (France);
- Promote lifelong education to update staff on all aspects of knowledge valorisation (Italy);
- Methods for monitoring and reporting on impact of R&D investments (Norway);
- Exchange of best practices on foresight and technology assessment (economic and social impacts of technology) to better align R&I results with the challenges and needs ahead (Portugal);
- Platform or MOOC (Massive Open Online Course) for dissemination and peer learning to reach out to others outside individual organisations; this could capitalise on useful experience from the SwafS part of the current and previous EU R&I Framework programmes (Sweden);
- Consider challenges with respect to ethics, privacy and regulatory barriers in accelerating use of new technologies (Sweden).

3.4. Best Practices in Knowledge Valorisation in Europe and beyond

Question 7: What would you consider examples of best practices in knowledge valorisation in your country (at national level, regional level or organizational level)? You could take inspiration from the potential areas for policy dialogue and exchange of best practices as outlined above. Please describe the best practice(s) briefly and add references/links.

Question 8: What are best practices in knowledge valorisation in other countries (in Europe and internationally) that you would like to explore in further detail? Please provide the title and references/links if possible.

The two questions on the identification of best practices, both at home and in other countries, have received a wide response: over 100 examples were given! They range from national policies, programmes, networks and guidelines through regional initiatives and schemes at operational level to cross-border, European and international projects. Information has also been provided on platforms and other actions promoting the dissemination of research-based knowledge. Finally, noteworthy national and European entities and associations in the field of knowledge valorisation have been mentioned.

The thematic scope is wide and covers all four areas of knowledge valorisation outlined in the consultation document. The largest number of best practices concerns 'incentivising and connecting valorisation actors', in particular academia-industry interactions. Intermediaries (notably Knowledge Transfer Offices) and their networks are another focal point. Many interesting initiatives also come from the area of citizen engagement and involvement of public authorities, cities and regions.

In addition to highlighting the benefits of the policies and measures listed, some Member States have pointed out difficulties and obstacles that reduce their impact. These include underfunding of programmes and insufficient reaching of the target group or the administration of the European Structural and Investment Funds (ESIF) and the State Aid Framework.

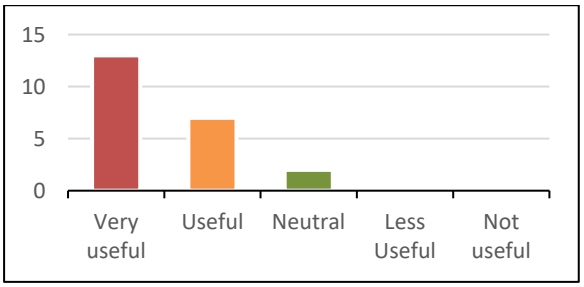
In conclusion, the result of this first collection of best examples confirms that there is a wealth of experience in the European Union, which invites further analysis and exchange.

An overview of the proposed best practices in knowledge valorisation is provided in the annex.

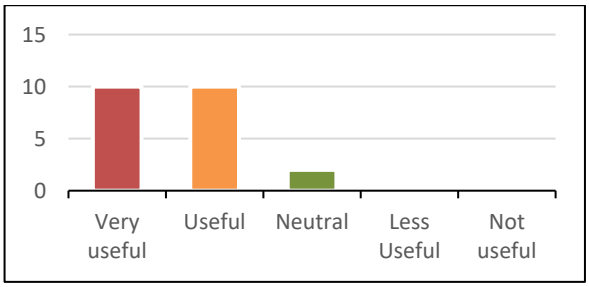
3.5. Involvement of Stakeholders

Question 10: How useful do you consider to be peer learning on knowledge valorisation, which is organised at European level and promotes cross-country exchange of best practices, for

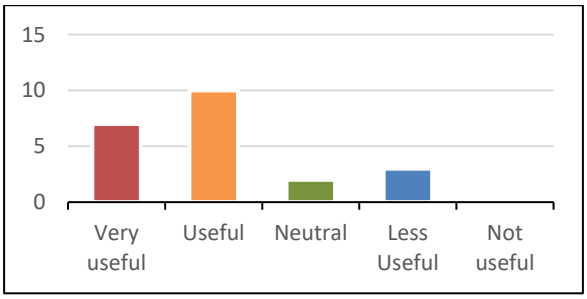
Universities and RTOs



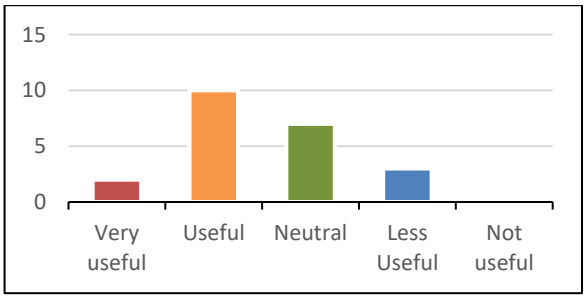
Industry, including SMEs



Regional Authorities (e.g. cities, local governments)



Civil Society



The survey shows that Member States and EEA countries find it useful that different stakeholder groups share experiences on knowledge valorisation at European level.

However, the benefits for universities and RTOs as well as industry/SMEs are valued higher than those of regional authorities or civil society. This is especially apparent when the answers are weighted and compared, as is done in the graph below.

In the comments to this question, France indicates that there is potential interest from many different stakeholders. According to Austria, exchanging best practices could be an incentive for more collaboration and for harmonizing regulations, notably of regional authorities and universities, so that sharing will be less difficult.

Sweden underlines that it is important to organise peer learning and exchange of best practices with different types of organisations from different sectors at the same event to stimulate cross-fertilisation. Czechia and Ireland consider the exchange between universities/RTOs and SMEs/industry particularly useful to stimulate interaction and knowledge valorisation. Finland asks to involve also the relevant EC services and Directorates-General to discuss and coordinate IPR aspects.

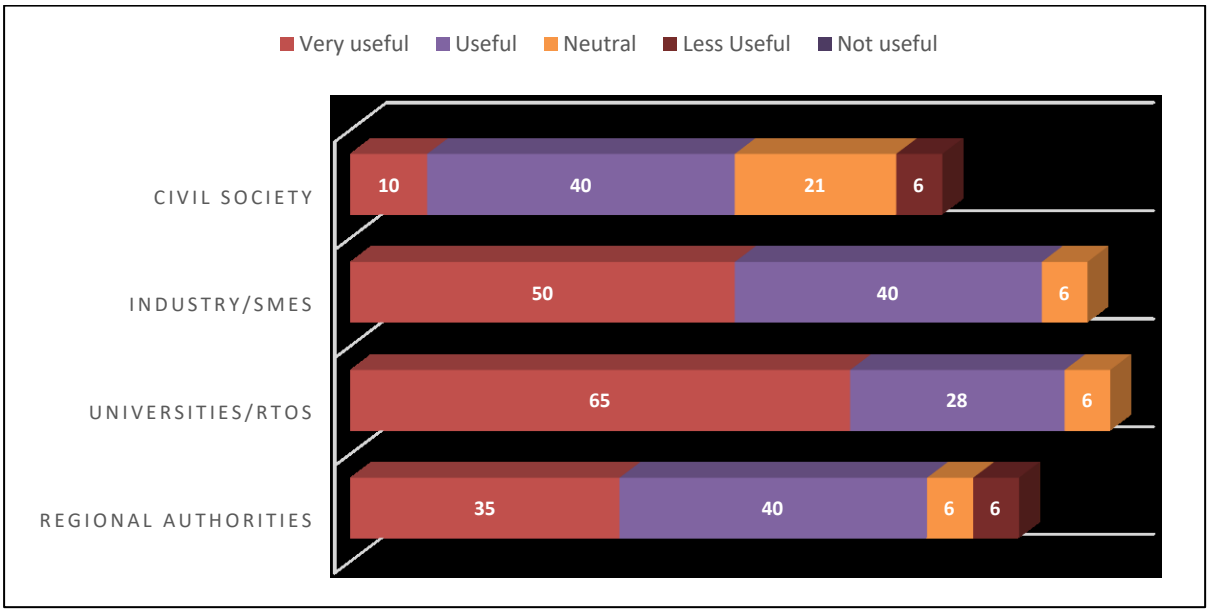
Italy remarks that universities & RTOs already pursue peer learning. Ireland wonders to whom it would be targeted within these entities and points out that there are good networks for KTOs in Europe.

Ireland and Romania recall the difficulties of industry, in particular of SMEs, to engage in policy exchanges due to lack of time and human resources, perceived need to be there as well as the costs involved.

The approach to citizen engagement is generally more hesitant (e.g. Ireland, Romania), but testing new approaches and awareness building is welcome. Belgium does not question whether it is useful to involve civil society, but rather calls to analyse if and how civil society can be addressed and if it has access.

In summary, the survey results invite to stimulate the dialogue and exchange of experience on knowledge valorisation among stakeholders. While it is important to bring together different stakeholder groups and interests in an ecosystem approach, it is equally crucial to have carefully thought through themes and clear objectives for the envisaged activities to generate interest and ensure benefits for participants. This might occasionally require designing specific measures for specific target groups, while avoiding potential duplication of activities promoted by existing networks.

Overview: Results weighed from 'very useful -5' to 'Not useful-1'



3.6. Active engagement in EU-level activities

Question 11: Would your country be interested in having a leading role in one of the above outlined areas as part of an EU-level exercise of exchange of best practices (e.g. presenting national strategies for knowledge valorisation, hosting a workshop, etc.)?

In reply to this question, seven Member States have signalled their interest in an active and leading role in the envisaged exchanges of experience and best practice at European level: Austria, Belgium, Spain, Finland, France, Ireland and Portugal.

They have indicated at least one or several areas, in which they would like to be engaged as set out in the table below. Again, the priority area 'Incentivising and connecting valorisation actors to stimulate innovation' is the most popular and the one in which Member States have the most expertise to contribute. The area 'Citizen engagement' has been ticked by Austria and Belgium.

This result is, of course, only a snapshot at this moment of time. In no way does it exclude the possibility that other Member States decide to take an active role in the future.

Interested Member States	1. Smart management and protection of knowledge assets in open R&I systems	2. Incentivising and connecting valorisation actors to stimulate innovation	3. Citizen engagement for knowledge valorisation & measuring societal impact	4. Funding of knowledge valorisation activities in Member States
Austria	X	X	X	X
Belgium	X	X	X	X
Spain		X		
Finland	X	X		
France	X	X		X
Ireland	X			X
Portugal		X		X

4 Conclusions and Next Steps

This survey confirms the Member States' great interest in policy dialogue and exchange of best practices on knowledge valorisation. It has identified key challenges and provides guidance and background material (collection of best practices) for areas of future action, including for the involvement of stakeholders.

Taking account of the survey results, the Commission plans concrete steps to strengthen knowledge exploitation in Europe in co-creation with the Member States. Creating real added value requires close cooperation and contributions from all stakeholders across the EU. Co-design and co-creation with Member States, and other stakeholders, will ensure that policy dialogues, events and measures are designed and implemented efficiently and effectively. Members States that have volunteered to get particularly involved may play a leading role in taking certain actions forward.

Next steps:

- As part of a new ERA for Research and Innovation, the Commission envisages a **review and update of the 2008 Recommendation on the management of intellectual property in knowledge transfer activities and Code of Practice**[12]. The discussions and consultations have been launched at the European Research & Innovation Days 2020 (22-24 September). The challenges and issues identified in this survey are crucial to inform the debate.
- The Commission will strengthen the **policy dialogue on knowledge valorisation** with Member States in the ERA context. Links with other policy areas (e.g. Open Science, industry and IPR, training and skills development) will be sought to create synergies and to achieve a broad systemic approach considering all relevant aspects and actors in the valorisation process.
- Taking up the priorities identified in this report**,** a first set of **events for exchange of best practices and peer learning** will be co-designed and co-implemented with Member States and, where appropriate, stakeholders. Suitable formats under 'Covid-19 conditions' will be explored. It could be discussed whether to develop a common label and promotion for this type of event.
- A '**Mutual Learning Exercise (MLE) on Knowledge Valorisation'**, under the Policy Support Facility, is planned to be launched in 2021 as soon as the pandemic allows. It will focus on an appropriate sub-set of the identified priority aspects to be developed notably with the Member States that have signalled interest in a leading role. All interested Member States will be invited to join and contribute.
- Responding to the request to deploy new tools and formats to spread best practices, the Commission will set up an **IT platform on Knowledge Valorisation** (Knowledge Valorisation Platform) in 2021. The scope and functionalities of the IT platform will have to be oriented to the needs of the potential users and could be gradually expanded as required. It could potentially offer possibilities to share model practices in different ways online (e.g. videos, podcasts, interviews, texts, links), to stimulate contacts and dialogue (e.g. discussion groups) and to offer trainings (e.g. developed by national entities). To be relevant it will be crucial that Member States and other stakeholders are actively involved in the IT platform by contributing content, steering discussion groups etc. The collection of best practices in the annex to this report will be a starting point.

[12] C(2008) 1329

- As a further new tool, a **European competition of knowledge valorisation practices** could be explored. For example, Member States could agree on the specific topic of the competition, and they could also be involved in the selection of the winners. One important selection criterion should be the transferability of the competing solutions in different national/regional R&I systems. The competition should allow for an in-depth analysis of the proposed practices, and its results could feed into the envisaged IT platform. Member States are invited to provide their feedback to this idea.

- In line with the survey result emphasising academia-industry interactions, the `European Skills Agenda` of June 2020 has announced to test a new **talent-based industry-academia knowledge exchange.** This demand-driven scheme aims to make it easier for companies, especially in the widening countries, to capitalise on European R&I skills and talent to meet their research and innovation needs. The test phase is under preparation and expected to be launched in 2021.
- The Commission also plans an **IP awareness raising campaign for knowledge generators** in 2021 as part of the forthcoming IP Action Plan that was announced in the New Industrial Strategy for Europe[13].
- The new **Horizon Europe** Framework Programme for Research and Innovation is set to boost smart management and valorisation of R&I results while striking a good balance between openness (Open Science/Open Innovation) and closeness/protection to safeguard Union interests. It will provide the opportunity to test and develop new approaches and guidelines. The **Manifesto for EU Covid-19 Research**[14] is a concrete action to fight the pandemic with research results and to foster a new culture of knowledge valorisation.

[13] COM (2020) 102 final

[14] See: https://ec.europa.eu/info/research-and-innovation/research-area/health-research-and-innovation/coronavirus-research-and-innovation/covid-research-manifesto_en

Annex 1: List of Best Practices

The annex contains an overview of best practices in knowledge valorisation that the participating countries reported in the survey. It summarises the answers to question 7 on national best practices (at national level, regional level or organizational level) and to question 8 on best practices in other European countries and globally.

For ease of reference, the examples have been arranged in broad thematic blocks.

National policies enhancing knowledge valorisation, especially in universities and public research entities:

- **Austria:** *Open Innovation Strategy* that promotes collaboration between industry, science, public administration and society in creating a culture of open innovation, forming innovation networks, strengthening public involvement in research programmes, and considers questions of open access, fair compensation models for crowd work etc.
- **Austria:** The *Federal Ministry of Education, Science and Research (BMBWF)* also bases its performance agreements with public universities on the understanding that social responsibility is a cross-cutting issue. In the performance agreement period 2019-2021, the universities are expected to integrate and make visible the interactions with society and business in the strategic orientation of the university.
- **Netherlands:** *Broad approach to valorisation and aggregation of valorisation activities* across themes; e.g. *2025 Vision for Science choices for the future.*
- **Romania:** In the *National Plan for Research and Innovation 2015-2020*, programme P1 - Development of the national R&D system, sub-programme 1.2 includes, among others, actions on developing the capacity of public research organizations for: a) knowledge valorisation and dissemination of the research results; b) providing technical assistance and high level scientific and technological services in priority areas; c) initiating and developing viable collaborations with partners from the public and private economic environment; d) increasing the degree of involvement and visibility at international level. Complementary measures can be found in the *Competitiveness Operational Programme 2014-2020, Axis 1*.
- **Spain***:* *Sexenios de Transferencia* – a framework for evaluating knowledge transfer and innovation activities carried out by academics. The evaluation of these activities comprises four dimensions: (1) transfer through the training of people, (2) transfer through activities with institutions, (3) transfer generating economic wealth and (4) transfer generating social value. The measures pursue two main objectives: to recognise the excellence and effort of teaching and research staff in undertaking knowledge transfer as a substantial part of their scientific work, and to increase the transfer, innovation and dissemination of knowledge to business and society as a whole.

Intellectual Property management and protection:

- **Austria:** *National Contact Point for Knowledge Transfer and Intellectual Property (NCP-IP)*; it oversees the *Intellectual Property Agreement Guide* (IPAG) and the Open Innovation Toolbox (since October 2019) as well as provides intelligence on knowledge transfer and IP in general.
- **Finland:** *National IPR strategy of Finland* that is in the process of being *updated*.
- **France:** *Unique representative* ("mandataire") in case of co-ownership between several public research organizations (simplification of IP management and valorisation).
- **France**: In order to facilitate collaborative research, the French Ministry of Higher Education, Research and Innovation is currently working on *standard templates*

for public-private research contracts. This aims to reduce legal uncertainty – especially for SMEs.

- **Ireland:** *National IP protocol* and resources – providing more confidence and certainty in valorisation & interactions.
- **Italy:** *Proof of concept (POC) funding scheme* - "*Bando POC*" for the implementation of patent valorisation programmes through the financing of POC projects, provided by Italian Patent and Trademark Office (UIBM – MISE).
- **Italy:** *National IP platform – KNOWLEDGE SHARE* (more than 1000 patents available, owned by Italian PROs and universities).
- **Norway:** *Intellectual Property Rights for Clusters* (Innovation Norway): The project focused on developing and testing policy guidelines for Cluster Managers for smart management of research results and IP protection in clusters. Two main challenges were addressed: 1) How IP can help to build trust within a cluster (climate for cooperation in managing R&I results) and 2) Knowledge transfer and commercial exploitation of IP: Provide tools and knowledge on the use of IP. The project resulted in developing national guidelines for clusters.
- **Spain:** *Initiative of Spanish Patent Office* to stimulate the international protection of technology through patents or utility models, as well as to contribute to improving the competitiveness of those private sector entities that have undertaken the search for markets outside of Spain.

Knowledge Transfer Intermediaries (Offices, Innovation Centres etc.) and their networks:

- **Austria:** The *aws impulse programme for Austrian knowledge and technology transfer* fosters the further development of regional knowledge transfer centres and their networks. It also promotes the exploitation of research results of universities and universities of applied sciences within the framework of their intellectual property rights strategy and by developing and building prototypes. Knowledge transfer centres: *http://wtz-west.at/*, *https://www.wtz-ost.at/*, *https://www.wtz-sued.at/.*
- **Belgium:** *KU Leuven Research & Development* – Tech Transfer Office.
- **Belgium:** *Networks of Knowledge Transfer Offices (KTOs)* that consolidate the range of services available to external partners (businesses and other organizations) and offer easier access as well as manage multi-university projects and screen valuable results. *LIEU Network* connecting KTOs of universities in the Fédération Wallonie-Bruxelles and *Tech Transfer Offices Flanders*.
- **Czechia:** *Platform Transfera.cz* connecting KTOs and regional innovation centres.
- **Czechia:** Regional innovation centres like *JIC* in Brno help to connect local universities and public research organisations with local industry and have experienced staff helping with technology transfer.
- **Czechia:** *Technology Centre of the Czech Academy of Sciences* helps with technology transfer through its Enterprise Europe Network membership.
- **Estonia:** *ADAPTER* – network (online tool) of KTOs at Estonian universities, research and development organizations, providing a quick and reliable link for companies and organizations to the R&D community.
- **France**: *SATT (Les Sociétés d'Accélération du Transfer des Technologies) network*

  TTOs for knowledge valorisation shared by several public research organizations in the same geographical area These TTOs are supported by a dedicated fund called *National Fund for Maturation*.
- **France**: Technology transfer professionals have access to a number of *training courses in the area of valorisation* (through the National Institute for IP and others). The *Curie Network*, gathering all the major French TTOs and public research organisations, offers more than 23 training courses dedicated to technology transfer.

- **Ireland:** *Knowledge Transfer Ireland* - supporting valorisation at national level, signposting for companies, making it simpler, best practice examples; linked with monitoring system performance – (*KTI review and annual knowledge transfer survey*).
- **Ireland:** *Technology Transfer Strengthening Initiative (TTSI)* programme – supporting valorisation locally with on the ground support, capacity and capability, networking.
- **Italy:** *National TTOs funding scheme ("Bando UTT")* provided by Italian Patent and Trademark Office (UIBM – MISE).
- **Netherlands:** The valorisation part of the *Oncode Institute*.
- **Portugal:** *Knowledge Transfer Network* to improve the strategic efforts for the valorisation of scientific knowledge and the university-company collaboration, with a programme for the capacity building of TTOs and support to their activities as well as monitoring (more *background information here*).
- **United Kingdom:** *Oxford University Innovation*, the technology transfer office of the University of Oxford.
- **New Zealand**: Managing *fund for early-stage commercialisation of new ideas* through University/RTO Technology Transfer Offices under the *Kiwinet umbrella*.

Dedicated support for knowledge valorisation at universities and RTOs: proof of concept, validation, demonstrators, prototypes, prizes, training:

- **Austria**: *aws prototype funding for universities and universities of applied sciences* supports the development and the building of prototypes.
- **Cyprus**: The *'Proof of Concept for Technology / Knowhow Applications' Programme* aims at the preliminary investigation of possible industrial applications of a technology/knowhow in a research organisation, enterprise or other organisation.
- **Germany:** *Validation funding VIP+*: The programme supports scientists of all disciplines to take the first step in the direction of economic exploitation or societal application, by funding the demonstration of the innovation potential of research results and in tapping possible areas of application.
- **Netherlands:** *Stevin prize* for impact of research by the National Organisation for Scientific Research.
- **United Kingdom**: *Innovation to Commercialisation of University Research (ICURe) Programme* aims to move ideas and innovation out of labs by funding research teams to validate the commercial potential of their ideas in the marketplace.
- **USA:** The *National Science Foundation's Innovation Corps (NSF I-Corps) programme*: experimental education to help researchers gain valuable insight into entrepreneurship, starting a business or industry requirements and challenges, in order to reduce the time to translate a promising idea from the laboratory to the marketplace. The NSF I-Corps is also developing a national innovation network to guide scientific research to the development of solutions to benefit society.

Support for university spin offs, start-ups, incubators:

- **Austria:** *Austrian Phoenix Founders Award* honours start-ups, spin-offs and prototype developments.
- **Austria:** *aws AplusB scale-up programme* supports incubators who focus on RTI-based start-ups (RTI = research, technology and innovation) and act as innovation intermediaries.

- **Austria:** *Spin-off Fellowships funding programme* (2017-2021) supports scientists and students with innovative ideas in their efforts to establish their own companies.
- **Belgium:** *Incubators at Interuniversity Microelectronics Centre (IMEC)* and at *VIB - Vlaams Instituut voor Biotechnologie*.
- **Belgium:** The *Gemma Frisius Fund (GFF)* is a seed capital fund that aims to stimulate the creation and growth of KU Leuven spin-off companies.
- **Cyprus**: The SEED and pre-SEED specific programmes, part of the *RESTART 2016-2020 Programmes (PILLAR II: "Sustainable RTDI System"),* support the creation and development of innovative start-ups, which intend to develop innovative products and services with global market penetration prospects.
- **Denmark:** *Open Entrepreneurship Initiative* connects experienced entrepreneurs with researchers to explore new opportunities either entrepreneurial (spin-out or start-up company) or intrapreneurial (within the university, company or organization).
- **France:** Legal mechanisms ("*loi Allègre*" and more recently "loi Pacte") aim at increasing incentives for academia-industry mobility for civil servants in research taking part in start-up creation and development.
- **France:** The French Ministry of Higher Education, Research and Innovation provides funding to *21 incubators* that specialise in supporting research-based or research-intensive companies with direct links to public research institutions. *Agoranov,* one of these incubators, was created in 2000 and has supported more than 450 projects, leading to the creation of 380+ companies (including Criteo, alan, Doctolib…) and 12,000+ jobs.
- **France:** *Innovation Competition i-Lab, i-PhD, i-Nov* encourages the development of highly innovative and technological companies born of achievements of cutting-edge research.
- **Netherlands**: *Techleap.NL*, for the Dutch start-up ecosystem.
- **Netherlands:** National grants for *Thematic Technology Transfer* for consortia of KTO's and thematic technology transfer fund for start-ups.
- **Switzerland:** *Innosuisse's coaching program for science-based startups*: Personalised coaching for science-based start-ups is provided free of charge and carried out in three stages by Switzerland's Innovation Agency – Innosuisse, with the aim of supporting science-based start-ups.
- **United Kingdom:** *SETsquared Partnership* is a business incubator and enterprise partnership comprising five UK universities (Bath, Bristol, Exeter, Southampton and Surrey.

Industry – academia interactions:

- **Cyprus:** The 'Commercial Exploitation of Research Results' and 'Commercial Exploitation of Research Results by Enterprises' specific programmes are part of the *RESTART 2016-2020 Programmes (PILLAR III: "RTDI System Transformation")***.** They aim at using research results as the basis for the development of internationally competitive, innovative products and services, with subsequent benefits to the employment market for young scientists and the overall growth of the economy.
- **Denmark:** Open science initiatives at Aarhus University: *"SPOMAN"* (Smart POlyMers And Nanocomposites). Companies have open access to network-based university collaboration/knowledge exchange – provided the results thereof are completely open to the world. The initiative has led to several commercial products of its company members and to several closed, proprietary projects that seek to pursue and IP-protect specific applications of the open results. *"ODIN" (Open Discovery Innovation Network)* extends the open science approach to Life Science.

- **Estonia:** The *Estonian Research Council* has started to support *development advisers' positions in business associations*, whose main objectives are identifying the R&D needs of companies, mapping important R&D activities and coordinating the search for large-scale R&D solutions.
- **Finland***:* *Aalto Design Factory (ADF)* is an interdisciplinary product design and learning hub uniting students, teachers, researchers, and industry.
- **France:** Supported by public funding, the *Institutes of Technological Research (IRT)* and the Institutes for Energy Transition (ITE) are thematic R&D centres pooling public and private resources aiming at supporting innovation and emerging industries, based on a shared R&D roadmap.
- **Ireland:** *Escalator of supports* – Commercialisation Fund, High Potential Start-Up (HPSU) Funding, entrepreneurial training at national and university level: *https://www.enterprise-ireland.com/en/Research-Innovation/*
- **Ireland:** *Technology Gateways and Regional Enterprise Development Fund (REDF)* – connecting research expertise regionally and nationally to support enterprise needs: *https://www.enterprise-ireland.com/en/funding-supports/*
- **Italy:** *ITAtech platform*, investment platform dedicated to the financing of technology transfer.
- **Malta:** *FUSION*, the national R&I funding Programme (2014-2020), managed by the Malta Council for Science and Technology, FUSION is composed of two main programmes, namely the Commercialisation Voucher Programme and the Technology Development Programme.
- **Norway:** *PILOT-E – Fast Track from Concept to Market* provides funding for Norwegian trade and industry to promote more rapid development and deployment of new, environment-friendly energy technology products and services PILOT-E is designed to follow up participants throughout the entire technology development pathway – from concept to market.
- **Norway:** *ENERGIX programme* is targeted towards Norwegian companies and research institutions and a key instrument in the implementation of the Government's Energi21 R&D strategy. The programme will also promote the broadest possible range of research activities to open the door to new thinking and innovative concepts.
- **Portugal:** *Born from Knowledge* – it promotes, disseminates and awards the production of knowledge and innovation. BfK distinguishes projects that are "born" of scientific knowledge, as well as companies that stand out in terms of research & development activities: Bfk Awards; BfK Ideas; BfK Rise.
- **Portugal**: *Interface Programme* to accelerate technology transfer from universities to companies: Technological Interface Centres Network – core funding and capacity building, links between higher education institutions and companies etc.; including support for *Collaborative Laboratories* that create qualified employment and scientific employment directly and indirectly through the implementation of research and innovation agendas aimed at the creation of economic and social value.
- **Portugal:** *Competitiveness Clusters* - combine partnerships and networks of companies and their associations, public entities and significant support institutions, namely entities of the Research and Innovation System.
- **Portugal:** *Technological Demonstrator* – *open days* in Technological Interface Centres, and *TECH@PORTUGAL* – annual event dedicated to show R&I results from national organizations in the context of transforming knowledge into innovation.
- **Portugal:** *Demonstrators funding instrument* – follow-up funding on R&I results for demonstration and scaling up.

Innovative approaches to stimulate ideas for addressing societal needs:

- **Austria**: The *FFG Pilot Ideas Lab* enables new ways of bringing together different disciplines and heterogeneous expertise from different actors (research, industry) and stimulating the co-development of interdisciplinary projects.
- **Norway:** *IDEALABs* (Research Council of Norway) create unique conditions for generating R&D&I project-ideas and solutions to specific societal challenges. The crucial element of the method is an interactive and intensive workshop coupled with real-time peer-review. It brings together pre-selected participants with expertise in a range of disciplines and experience from various backgrounds as well as stakeholders, who are supported by a team of mentors/evaluators. This methodology allows cross-fertilisation, which promotes new insights and perspectives on "wicked problems" and stimulates solutions that respond to societal needs.
- **Sweden:** *Challenge-Driven Innovation (CDI)* is an initiative that aims to solve social challenges that require broad cooperation to overcome. The solutions developed under the programme must make a clear contribution to one or more of the UN's Sustainable Development Goals. Proposals need to describe the innovation and which actors must work together to succeed in introducing and spreading the innovation.
- **EU**: *Suspended Spaces*: An independent collective, set up above all with the desire to work together with other artists and international researchers. It exists since 2007 and is based in Paris, Caen, Berlin in collaboration with university research centres in Paris 1 Panthéon-Sorbonne (ACTE) et Amiens (CRAE Université de Picardie Jules Verne). They give access to their research through publications, exhibitions, seminaries.

Citizens engagement & user/patient involvement:

- **Austria**: The programme *Sparkling Science* (2007-2019) supported research projects carried out jointly by research organisations and schools (and other partners).
- **Austria:** Within the *AAL test regions* at least 100 households are equipped with innovative ICT solutions in order to improve the quality of life of older adults. They have been developed together with the users and tested at least half a year.
- **Belgium:** *Dingdingdong*: research group on the Huntington disease composed of artists, scientists, academic researchers, philosophers, etc. and carriers of the disease. They give access to their ongoing research through texts, artistic works, seminars.
- **Belgium:** *La Maison des Sciences de l'Homme* (Liège university), which promotes meetings between citizens and researchers.
- **Norway:** The *Annual Research Campaign* by the Research Council of Norway organises a citizen science project yearly during National Science Week. Thousands of pupils help to collect and enter data, making it possible to conduct large-scale studies that otherwise would be difficult to complete.
- **EU** (Norway/Ireland and others): *+CITYxCHANGE (Horizon 2020 project):* The Citizen Participation Playbook helps local authorities to enable local communities to become a Positive Energy Block (PEB) and lead the transformation towards Positive Energy Districts (PEDs) and Cities. The +CityxChange Bold City Vision (BCV) identifies citizen engagement as one of the six main processes within the framework. The Citizen Participation Playbook is a detailed roadmap of four distinctive citizen participatory processes to co-design PEBs and PED including phases, steps, stakeholders, outcomes and a catalogue of physical and online tools.

Policy development & public sector/cities/regions as valorisation actors:

- **Belgium:** *Namur Europe Wallonie – NEW*, which promotes, among others, the development of smart-cities.
- **Estonia/Finnland:** *FINEST Twins: platform for cross-border smart city solutions (Helsinki/Finland - Tallinn/Estonia)* that mobilises all smart city actors and stakeholders and establishes solid long-term high-level research, knowledge-transfer and innovation partnerships with the counterparts to capitalise on the macro region's scientific research, innovation and entrepreneurship potential.
- **Norway:** *FORREGION – Programme on Research-based Regional Innovation:* It targets its activities towards enhancing value creation, competitiveness and restructuring capacity throughout the country, based on the unique opportunities and challenges of each region. The objective is to promote regions with good restructuring capacity, well-functioning business environments and access to relevant expertise.
- **Norway:** *Public Sector R&D Contracts (PRD)* – A binding, targeted cooperation between innovative Norwegian supply-companies and the Norwegian public sector such as municipalities, county councils, government bodies, hospitals.
- **Norway:** The 21-processes are multi-stakeholder commissions responsible for prioritisation in key areas of Norwegian research and innovation policy, providing a bottom-up perspective on priorities to be chosen. Norway has substantial experience in organising so-called 21-processes - broad national processes in which relevant actors participate in the design of a national strategy for research and innovation for the 21st century *(e.g. https://www.energi21.no/).*
- **Sweden:** *Policy Labs:* Vinnova is funding temporary policy labs (policy lab cases) with multiple authorities within the scope of a government commission. The idea is both to create demand for policy lab methods among authorities whilst building Vinnova's own capacity in the field. Policy Labs are emerging structures that construct public policies in an innovative, design-oriented fashion, in particular by engaging citizens and companies working within the public sector.
- **Sweden:** *RISE Social and Health Impact Center:* SHIC catalyses the transition from knowledge to practice and improves the ability to use standardised measures to assess social and health impact on a societal and individual level.
- **Sweden:** The *Inclusive Research Funding project* (Inkluderande forskningsfinansiering), involving several Swedish research funders (Vinnova, Formas, Forte and the Swedish Energy Agency), aims at instilling a more inclusive and comprehensive way of funding research, to ensure that relevant target groups are not overlooked.
- **EU:** The *EU SHAFE project* (Interreg) will improve policies and practices in 7 European regions by developing a comprehensive approach to Smart Healthy Age-Friendly Environments (SHAFE). The consortium will create a cooperative, inclusive ecosystem between public authorities, European networks and user's associations, embedding their experience and skills with research & design knowledge from academia and SMEs for the growth of community-based services and "ageing at home" around Europe.
- **EU:** *European Innovation Partnership on Active and Healthy Aging (EIP-AHA)*.

Societal impact:

- **Netherlands**: *Report KNAW on societal impact* of scientific research, (summary in English, with definition of societal impact).
- **Sweden:** *Network for Impact Measurement*: Effektfullt is a non-profit organisation and a cross-sectoral node. Effektfullt´s activities contribute to cross-sectoral alignment in Sweden on topics related to impact measurement. They support organisations in improving their ability to measure impact by offer a number of

digital resources as well as create opportunities for experience exchange on how to measure impact in practice. The project is funded by Vinnova.

- **Europe:** The League of European Research Universities' (LERU) positon paper on *Productive interactions: Societal impact of academic research in the knowledge society* (2017).

Dissemination (Open Science / Open Innovation / platforms):

- **Belgium:** *LUCK - Open access platform*.
- **Belgium***:* *Open Repository and Bibliography, Liège University: ORBi* allows an expanded development and distribution of research on a global scale thanks to interoperability and compatibility with OAI-PMH.
- **Portugal:** *Innovation Portal* – platform that will provide information about the entities of the National Innovation System (NIS), search investigator's specific skills, entities that work with specific technologies, find business partners, among many other functionalities. Under development.
- **Portugal:** *Public Procurement Knowledge Centre*: expertise unit for public procurement.
- **Portugal:** *TECH4COVID19* – Dissemination of R&I results to contribute to COVID-19 challenges.
- **Slovakia:** *National project* by the Slovak Centre of Scientific and Technical Information that aims to improve the overall availability of data in public administration with an emphasis on open data.
- **USA:** *arXiv®* is a free distribution service and an open archive for scholarly articles in the fields of physics, mathematics, computer science, quantitative biology, quantitative finance, statistics, electrical engineering and systems science, and economics. It is a collaboratively funded, community-supported resource founded by Paul Ginsparg in 1991 and maintained and operated by Cornell University.
- **EU:** *Horizon Results Platform* on which Framework Programme participants present their results for further exploitation.
- **EU:** *BIØN - Building Impact Zero Network* (ERASMUS+) is a network of organisations active in low impact building techniques in five countries. Their aim is to share knowledge, practices and experiences to contribute to the built environment and to their communities.
- **Global:** *WIPO GREEN – The Marketplace for Sustainable Technology* is an online platform for technology exchange. It supports global efforts to address climate change by connecting providers and seekers of environmentally friendly technologies. Through its database, network and acceleration projects, it brings together key players to catalyse green technology innovation and diffusion.

In addition, Member States mentioned successful national or European entities and associations related to knowledge valorisation such as

- Networks of knowledge transfer professionals:
  - ASTP-Proton – European Association of Knowledge Transfer Professionals
  - NETVAL – Italian TTO Association
- Funding agency:
  - VINNOVA Sweden
- Research organisations:
  - Fraunhofer Germany
  - Irish Manufacturing Research - IMR
  - VTT Technical Research Centre of Finland
- Private company:
  - Ip Group Inc - leading intellectual property commercialisation company

Annex 2 : Background Document to Survey

EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR RESEARCH & INNOVATION
Directorate F - Prosperity

Background Document to Survey

Towards a Policy Dialogue and Exchange of Best Practices on Knowledge Valorisation

22/04/2020

Directorate-General for Research and Innovation
Prosperity Directorate

1 Objective

This survey aims at asking feedback from Member States and interested EEA countries on priority areas for a policy dialogue and exchange of best practices on knowledge valorisation, i.e. transforming research results into societal and economic value.

The Council conclusions "*Accelerating knowledge circulation in the EU*"[15] from 29 May 2018 invited Member States to step up efforts to examine and share best practices on knowledge transfer. The European Research Area and Innovation Committee (ERAC) has also repeatedly called for more effective valorisation of research results for the benefit of society and industry in the EU[16].

How to enhance dissemination of good practices on valorisation and intellectual property (IP) management in the Union? The workshop *'Knowledge Valorisation: Policies and best practices to transform research results and innovation into societal and economic value',* organised by DG Research and Innovation on 12 November 2019, discussed possible lines of action and how to strengthen an EU frame for ensuring that successful R&I are deployed with societal impact in Europe. Participants from Member States and EEA countries expressed great interest in closer collaboration and exchange. The workshop served to explore potential areas appropriate to exchange best practices and policy approaches.

Building on the outcome of the November workshop, this survey invites Member States and interested EEA countries to provide feedback to this note by 26 May 2020 via this online survey.

The results of the survey will be presented at a workshop (date to be decided) with view to designing initiative(s) that foster peer learning and the exchange of best practices in knowledge valorisation.

2 Background and Policy Challenge

Transforming research results and data quickly into sustainable and economically viable solutions is a prerequisite for achieving the ambitious policy targets of a Union that strives for more. Only if we boost knowledge valorisation, will our R&I investments pay off in helping to shape the economic, environmental and social transitions that the Union is facing. The outbreak of the coronavirus is currently showing in an impressive way how crucial and urgent it is to disseminate, take up and implement scientific knowledge. Fast and efficient valorisation of research results will continue to be an important objective for ensuring the well-being and prosperity of European citizens in the future.

Despite substantial efforts at the EU, national and regional level, the European paradox continues to exist: the Union continues to be a global leader in terms of scientific output producing, for example, 22.7 % of all high-quality scientific publication, but still lags behind in translating this advantage into products, services, processes and solutions that meet the demand. Although many Member States have increased investments in their public research systems since 2000, leading to improvements in the quantity and quality of their scientific outputs, the achievements in terms of valorisation have not been commensurate.

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[15] http://data.consilium.europa.eu/doc/document/ST-9507-2018-INIT/en/pdf

[16] For example: http://data.consilium.europa.eu/doc/document/ST-1216-2018-INIT/en/pdf

Therefore, we all need to promote a valorisation culture that makes research results available for broad societal use. Industry-academia interactions and mobility have scope for improvements, and mutual understanding between different types of valorisation players is often lacking. In particular, SMEs continue to find it difficult to connect to universities. Even if in the last decade the number of public-private co-publications per million population continued to rise in all Member States, the EU continues to be outperformed by the US and South Korea. Only 35% of academic researchers report cooperation with researchers in non-academic sectors[17].

Not only greater efforts but also smarter policies are needed to tackle these issues. At the same time, new developments and challenges must be addressed: Digitisation, Open Science and Open Innovation bring new challenges in a competitive global environment, in which smart knowledge management (and protection) is more important than ever. The R&I ecosystem has become more complex with more players, with less one-directional knowledge supply driven approaches, but a greater emphasis on knowledge co-creation by research, industry and increasingly civil society.

Public and private players have developed many strategies, instruments and measures to enhance knowledge sharing and valorisation at European, national and regional level while responding to new challenges. However, this wealth of experience has not been tapped into in a systematic way.

Learning from peers (inside and outside the Union) is a powerful way to improve national strategies and systems and to enhance the societal and economic uptake of research-based solutions across the Union.

Enhanced valorisation of research results requires a policy mix based on a toolbox of instruments that acknowledges different knowledge channels, which may vary across countries with different strengths in science, innovation and industry, among others. An in-depth exchange on lessons learned and success factors of different strategies and measures would enable to identify best practices for knowledge valorisation. It would thus provide a toolbox on which Member States could draw to enhance their national strategies according to their specific needs and conditions.

3 Potential Areas for Peer Learning

Based on the discussions with Member States and EEA countries at the workshop in November 2019, the following aspects have been identified as potentially interesting for examination in the context of an exchange of best practices and policy dialogue:

3.1 Smart management and protection of knowledge assets in open R&I systems

Experiences could be shared on conditions and approaches for smart management of research results and IP protection, and how these are implemented in synergy with and underpinning open science/open innovation strategies. The role and funding models of Knowledge Transfer Offices (KTOs) at universities and public research organisations could be scrutinised in this context as well as measures supporting researchers and spin-offs/start-ups/SMEs to manage their knowledge assets. Experiences in IP management in research and knowledge transfer collaborations with third countries could also be looked at.

3.2 Incentivising and connecting valorisation actors to stimulate innovation

Successful valorisation happens at the interface of research-economy-society and requires to think outside the box and to interact with partners from different

[17] MORE3 study: https://cdn1.euraxess.org/sites/default/files/policy_library/final_report_2.pdf

backgrounds. Experiences could be exchanged on novel initiatives connecting different actors for stimulating valorisation activities. How to embed a valorisation culture in public research is one challenge in this respect (incentives and measures to encourage academics to collaborate with economic actors, to launch academic start-ups, notably by female researchers and graduates, etc.) Another focus could be on matchmaking SMEs and researchers as well as supporting SMEs to access research that helps them to digitise, modernise and develop innovations. Models and practices fostering disruptive thinking through cross-sectoral, cross-disciplinary joint teams and informal interactions could be shared. Networking and mobility between different actors also play a crucial role for knowledge dissemination and uptake.

3.3 Citizen engagement for knowledge valorisation & measuring societal impact

Although citizen engagement and citizen science are well-accepted Open Science practices, citizen engagement as a tool for R&I valorisation is relatively new and so far mainly limited to communication and dissemination of research results. Best practices could be identified and discussed that promote demand-driven uptake of research-based solutions in cities and regions, by citizens, societal actors as well as public authorities. Approaches to measure societal impact could be considered.

3.4 Funding of knowledge valorisation activities in Member States

What share of public R&I investment is devoted to support valorisation of (publicly funded) research results? Experiences could be shared on different approaches, including synergies with other policies. Various ways of financing knowledge dissemination and valorisation could be explored ranging from public funding (e.g. for Proof of Concept, boosting spin-offs) through universities/research institutions generating income through IP and attracting private investment to accessing private finance. Experiences with models of mixed funding could be particularly interesting (e.g. shared labs, public-private partnerships, clusters).

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The report summarises the results of the survey '*Towards a Policy Dialogue and Exchange of Best Practices on Knowledge Valorisation'* addressed to EU Member States and interested EEA countries. It presents the feedback on concrete areas for a policy dialogue and exchange of best practices at European level and a first collection of best practices by drawing on the expertise of the participating countries. Taking account of the survey results, next steps are outlined at the end of the report. They shall be further developed and implemented together with Member States and stakeholders with the aim to co-create a sustainable European policy of knowledge valorisation.

Valorising research results and scientific knowledge is key to deliver new responses to the challenges and opportunities the EU is facing, in particular the twin climate and digital transitions. Many strategies and instruments have been developed to enhance knowledge management, sharing and valorisation at European, national and regional level. However, this wealth of experience has not been capitalised on in a structured way. An in-depth exchange among policy makers and stakeholders at European level is needed.

The survey was carried out by the Directorate General for Research and Innovation, Directorate Prosperity, Unit Valorisation Policies & IPR from 23 April until the end of June 2020. In total, 23 countries participated.

Studies and reports

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