

**MULTILATERAL DIALOGUE ON PRINCIPLES AND VALUES
IN INTERNATIONAL RESEARCH & INNOVATION COOPERATION
WORKSHOP ON KNOWLEDGE VALORISATION
MONDAY, 2 OCTOBER 2023, 13:00-16:00 (CET) VIA WEBEX**

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CONCEPT NOTE

Background information

The European Commission initiated a Multilateral Dialogue on the principles and values underpinning international research and innovation (R&I) collaboration in July 2022. This Dialogue, which brings together the EU Member States, over 30 other countries, European stakeholders and international organisations, aims to have an open discussion to develop a common understanding of these principles and values as a reliable basis for international R&I cooperation. This workshop, the sixth of the series, focuses on knowledge valorisation through intellectual assets management and industry-academia collaboration.

Knowledge valorisation is the process of creating social and economic value from knowledge by linking different areas and sectors and by transforming data, know-how and research results into sustainable products, services, solutions and knowledge-based policies that benefit society. Knowledge valorisation goes beyond knowledge and technology transfer and implies a focus on the whole R&I ecosystem and on co-creation between its actors. It embraces non-technological solutions that can derive benefits to society as a whole. Moreover, knowledge valorisation takes place through various channels¹ including intellectual assets management, industry-academia collaboration, standardisation, citizen engagement and policy uptake.

At the international and European levels, several initiatives have recently been taken with the goal of stimulating the further use of research results and providing guidance to R&I actors to foster efficient intellectual assets management and collaboration between industry and academia. These initiatives include:

- The adoption of the Guiding principles for Knowledge Valorisation² and of the Codes of practice on the management of intellectual assets³ and on standardisation⁴. Additional Codes of practice on industry-academia collaboration and on citizen engagement for

¹ [Policy Review: R&I Knowledge Valorisation Channels and Tools](#)

² [Council Recommendation on the Guiding principles for knowledge valorisation](#)

³ [Commission Recommendation on the Code of practice on the management of intellectual assets for knowledge valorisation in the European Research Area](#)

⁴ [Commission Recommendation on the Code of practice on standardisation in the European Research Area](#)

knowledge valorisation are currently being developed (adoption foreseen in Q1 2024).

- The Intellectual Property Strategic Programme 2022 from Japan with the publication of the University IP Governance Guidelines⁵.
- The National principles of Intellectual Property management for publicly funded research⁶ from Australia, updated in June 2022.
- The Higher Education Research Commercialisation Intellectual Property Framework released by Australia in 2022.
- The Memorandum ensuring free, immediate and equitable access to federally funded research publications and data, from the US issued in 2022⁷.

The objective of this workshop is to learn from the experiences and approaches for knowledge valorisation in different parts of the world. The exchange will highlight policy developments, strategies and best practices in the field of intellectual assets management (including national IP strategies) and will also focus on how to enhance collaborations between industry and academia and stakeholders' engagement in R&I.

To structure the discussion, the following issues will be addressed in two breakout sessions. All workshop participants will be given the opportunity to attend both breakout sessions.

1) Knowledge valorisation through intellectual assets management

Researchers and innovators all over the world produce a wealth of knowledge assets which are not necessarily legally protectable through IPRs. Widening the scope to intellectual assets management is essential as intellectual assets are not limited to IP rights, but include any result or products generated by research and innovation activities such as data, prototypes, know-how and publications to maximise value creation opportunities.

Questions to facilitate the discussion in breakout session 1:

- What policies, measures, subsidies, discounts or specific services are in place or are being provided in your country to increase the level of intellectual assets management of universities and research institutions and to support them with IP valuation?
- What are the main challenges and opportunities in the management of intellectual assets and their valorisation faced by R&I actors?
- What strategies or best practices are crucial for effectively managing intellectual assets to create value? Do you adapt these strategies in the context of international research projects?
- How can open innovation and collaboration play a role in maximising the value of intellectual assets?

2) Knowledge valorisation through industry-academia collaboration: challenges and drivers of change

Industry-academia collaboration occurs in various ways, such as collaborative research, public-private partnerships, joint research, technology infrastructures and intersectoral mobility among

⁵ [Japan: The government of Japan announces the Intellectual Property Strategic Program 2022. Important changes on the horizon for patents owned jointly by universities and commercial companies - Kluwer Patent Blog \(kluweriplaw.com\)](#)

⁶ <https://www.arc.gov.au/sites/default/files/2022-06/National%20Principles%20of%20Intellectual%20Property%20Management%20for%20Publicly%20Funded%20Researches%20.pdf>

⁷ [08-2022-OSTP-Public-Access-Memo.pdf \(whitehouse.gov\)](#)

others. These collaborations are increasingly driven by open innovation⁸ and use more interactive models including the creation of new intermediaries and digital platforms that facilitate co-creation and matching the supply and demand for innovation.

Questions to facilitate the discussion in breakout session 2:

- What are the main challenges for industry-academia collaboration?
- What are the key instruments (such as policy tools, funding schemes, regulatory measures) that can be enablers of enhanced industry-academia collaboration?
- How to foster synergies between different sectors and actors to ensure better knowledge valorisation of R&I results and address global societal and economic challenges?
- How can industry-academia collaboration be more diverse? Are there any specific measures or strategies that can be implemented to encourage participation and enhance the overall impact of these partnerships? Are there specific measures to target innovative SMEs?

Further reading and background material

(provided by the organizing team and complemented by the participants during the workshop)

Croatia

- [National Guidelines for Technology and Knowledge Transfer \(in Croatian only\)](#)

Hungary

- [Cooperative Doctoral Programme](#)
- [Calls for University Innovation Ecosystem](#)
- [Competence Centres National Laboratories](#)
- Former Competence Centres, in Hungarian FIEKs (e.g.: [Szechenyi Istvan University](#) , [Center for University-Industry Cooperation of Budapest University of Technology](#) until 2021)
- [Innovation Café & Interregional Exchange, Bucharest | Interreg Europe](#)
- [Početna | RIMAP \(uniri.hr\)](#)

Morocco

- [National Plan for Industrial Acceleration \(in French\)](#)
- [IP Marketplace Morocco \(in French\)](#)

EU

- [EU Knowledge Valorisation Platform](#)
- [IP Action Plan](#)
- [EUIPO \(European Union Intellectual Property Office\)](#)
- [EU Knowledge Valorisation Newsletter \(subscription link\)](#)

EPO (European Patent Organisation)

- [Espacenet](#): free access to information about inventions and technical developments from 1782 to today
- [Firefighting platform](#): access to know-how and to the technical information contained in patents, which describe the most recent advances and can support researchers and

⁸ Open innovation means the approach of opening up the innovation process outside of an organisation.

innovators in finding inventive solutions to address risks internationally

- [Clean energy technologies](#): compilation of around 60 datasets to support scientists and engineers in accessing patent information containing some of the most advanced technical knowledge on clean energy
- [Fighting coronavirus](#): compilation of around 300 datasets updated regularly to support the work of clinicians, scientists and engineers, also showing which countries have the most patent filings and which applicants and inventors are most prolific in the relevant fields.

WIPO

- [IP Policy Writer's Checklist](#)
- [IP Policy Template for Academic and Research Institutions](#)
- [Guidelines for Customization of the IP Policy Template](#)
- [WIPO Database of IP Policies from Universities and Research Institutions](#)

Australia

- [The National principles of Intellectual Property management for publicly funded research](#)
- [Higher Education Research Commercialisation Intellectual Property Framework - Department of Education, Australian Government](#)

Japan

- [Japan: The government of Japan announces the Intellectual Property Strategic Program 2022. Important changes on the horizon for patents owned jointly by universities and commercial companies - Kluwer Patent Blog \(kluweriplaw.com\).](#)

USA

- [Ensuring Free, Immediate, and Equitable Access to Federally Funded Research](#)
- [IUCRC | Industry-University Research Partnerships \(nsf.gov\)](#)
- <https://iucrc.nsf.gov/>
- <https://new.nsf.gov/focus-areas/research-partnerships>

Spain

- Knowledge Transfer and Collaboration Plan of Spain, available in Spanish and English here: <https://www.ciencia.gob.es/Estrategias-y-Planes/Planes-y-programas/PlanTranferencia.html>

The Netherlands

- <https://universiteitenvannederland.nl/files/documenten/Dealterm%20Principles%20UNL.pdf>
- the Dutch National Research Council: <https://www.nwo.nl/en/impact-plan-approach>
- <https://www.nwo.nl/en/impact-scout>
- Principles for spin-off dealterms based on IP - use or transfer: <https://universiteitenvannederland.nl/files/documenten/Dealterm%20Principles%20UNL.pdf>

South Africa

- [Intellectual Property Rights from Publicly Financed Research and Development Act: Regulations | South African Government \(www.gov.za\)](#)
- THRIP funding instrument: <http://www.thedtic.gov.za/financial-and-non-financial-support/incentives/thrip/>
- <https://www.innovationbridge.info/ibportal/>
- <https://www.tia.org.za/>

Austria

- https://www.bmk.gv.at/en/topics/innovation/policy/open_innovation_strategy.html
- Example of a Knowledge Transfer Centre:
<https://boku.ac.at/en/fos/technologietransfer/cooperations/wtz-wissenstransferzentren>
- Austria - Spin off Fellowships: <https://www.ffg.at/spin-off-fellowships>
- [Home \(xista.com\)](http://www.xista.com)
- [Die Österreichische Forschungsförderungsgesellschaft FFG! | FFG](http://www.ffg.at/)
- <https://www.ffg.at/>
- <https://www.cdg.ac.at>

Belgium:

- <https://ec.europa.eu/research-and-innovation/en/research-area/industrial-research-and-innovation/eu-valorisation-policy/knowledge-valorisation-platform/repository/blikopener-single-point-contact-collaboration>
- <https://www.vlaamsehogescholeeraad.be/nl/blikopener>

UK:

- UKRI. <https://www.ktp-uk.org/>
- <https://www.gov.uk/guidance/university-and-business-collaboration-agreements-lambert-toolkit>
- <https://www.nihr.ac.uk/documents/collaboration-agreements-guidance/12136>

Bosnia-Herzegovina

- <https://cir.unsa.ba/dokumenti/>
- https://cir.unsa.ba/wp-content/uploads/2021/02/7_POLITIKA_UPRAVLJANJA_IV_UNSA.pdf
- <https://www.unsa.ba/o-univerzitetu/propisi/pravilnik-o-upravljanju-intelektualnim-vlasnistvom-univerziteta-u-sarajevu>

Sweden:

- [Intellectual Property Rights of academic staff | KTH](https://www.kth.se/en/samverkan/samverka-med-forskar/lararundantaget-1.967774)
- <https://www.snitts.se/ibyc2023>
- <https://www.iva.se/en/what-iva-does/projects-and-programmes/research2business/r2b-summit--sessions/?epslanguage=en>
- <https://www.kth.se/en/samverkan/samverka-med-forskar/lararundantaget-1.967774>

Finland

- <https://www.bocoip.com/en/slush-from-an-ipr-perspective/>

Romania

- <https://www.interregeurope.eu/good-practices/cafeneaua-de-inovare-innovation-cafe>

Switzerland

- <https://swissnex.org/>

China

- https://www.gov.cn/zhengce/zhengceku/2016-05/09/content_5071536.htm
- https://www.gov.cn/zhengce/zhengceku/2021-11/23/content_5652789.htm
- https://www.gov.cn/zhengce/zhengceku/2021-03/30/content_5596843.htm

- https://www.most.gov.cn/xgk/xinxifenlei/fdzdgknr/fgzc/gfxwj/gfxwj2022/202210/t20221025_183175.html

Slovenia

- <http://jro-ktt.si/>

AGENDA

13:00-13:05	<p>Opening and welcome: the multilateral dialogue on principles and values in international R&I cooperation</p> <ul style="list-style-type: none"> • Cristina Russo, Director for Global Approach & International Cooperation in R&I, DG R&I, European Commission
13:05-13:10	<p>Introduction to the workshop</p> <ul style="list-style-type: none"> • Martin Penny, Head of Unit, International Cooperation, DG R&I, European Commission
13:10-13:30	<p>Policy context of the workshop – International and European policies and initiatives on knowledge valorisation</p> <ul style="list-style-type: none"> • Ádám Kiss, President, National Research Development and Innovation Office (NRDIO), Hungary • Kirsi Haavisto, Head of Unit, Valorisation Policies & IPR, DG R&I, European Commission
13:30-14:25	<p>First round of breakout sessions</p> <p><i>Participants will be split into two parallel breakout sessions.</i></p> <p><i>One breakout session will exchange on ‘Knowledge valorisation through intellectual assets management’.</i></p> <p><i>The other breakout session will exchange on ‘Knowledge valorisation through industry-academia collaboration’.</i></p>
14:25-14:30	<p>Coffee break</p>
14:30-15:25	<p>Second round of breakout sessions</p> <p><i>Participants will be distributed in new breakout sessions to exchange on the topic they have not discussed in the first round.</i></p>
15:25-15:50	<p>Plenary report by moderators of the break-out sessions</p>
15:50-16:00	<p>Closing statement</p> <ul style="list-style-type: none"> • Péter Lábody, Vice-President, Hungarian Intellectual Property Office (HIPO)

SUMMARY REPORT

The workshop on “Knowledge Valorisation” took place on 2 October 2023 and was the sixth of a series of workshops, supporting the European Commission’s Multilateral Dialogue (MLD) on Values and Principles in International R&I cooperation. The event was co-designed and co-organised by the European Commission together with Morocco, Hungary and the Young European Research Universities Network (YERUN). It attracted around 120 participants from 32 countries, the OECD, and a number of European stakeholder organisations.

Knowledge valorisation is the process of creating social and economic value from knowledge by linking different areas and sectors and by transforming data, know-how and research results into sustainable products, services, solutions and knowledge-based policies that benefit society. Knowledge valorisation goes beyond knowledge and technology transfer and implies a focus on the whole R&I ecosystem and on co-creation between its actors. It embraces non-technological solutions that can derive benefits to society as a whole. Moreover, knowledge valorisation takes place through various channels including intellectual assets management, industry-academia collaboration, standardisation, citizen engagement and policy uptake.

The objective of the workshop was to learn from each other by exchanging experiences, approaches and best practices, on two topics, namely knowledge management in the context of intellectual asset management and in industry-academia collaboration. Two keynote speeches set the policy scene of the workshop – with concrete examples of (inter)national and European policies and initiatives on knowledge valorisation.

Adám Kiss of the Hungarian National Research Development and Innovation Office (NRDIO):

- highlighted the importance of knowledge as an asset for economic growth and for finding solutions to societal challenges;
- cited the pooling of intellectual resources in climate sciences as an example for the relevance of valorisation of knowledge at an international level. .

Kirsi Haavisto of the European Commission’s DG R&I Unit for Valorisation Policies & IPR:

- underlined that access to research results is key for breakthrough innovation and for addressing global societal challenges;
- presented recent initiatives of the EU, such as the Guiding Principles for Knowledge Valorisation, and a series of codes of practice on intellectual assets management and on standardisation (adopted in March 2023), and on citizen engagement, and industry-academia co-creation (to be adopted in March 2024).
- referred to the Repository of best practices of the EU Knowledge Valorisation Platform and to the EU Knowledge Valorisation Week, a flagship yearly event organised by DG R&I where best practices are showcased.

After setting the scene with the keynote speeches, the participants discussed in two rounds of parallel breakout sessions the topics of intellectual assets management and industry-academia collaboration. The discussions followed the Chatham House Rule⁹ to encourage an open exchange among participants. The discussions were guided by the following sets of questions per topic:

Topic 1: *Knowledge valorisation through intellectual assets management*

1. What policies, measures, subsidies, discounts or specific services are in place or are being provided in your country to increase the level of intellectual assets management of universities and research institutions and to support them with IP valuation?
2. What are the main challenges and opportunities in the management of intellectual assets and their valorisation faced by R&I actors?
3. What strategies or best practices are crucial for effectively managing intellectual assets to create value? Do you adapt these strategies in the context of international research projects?
4. How can open innovation and collaboration play a role in maximising the value of intellectual assets?

Topic 2: *Knowledge valorisation through industry-academia collaboration: challenges and drivers of change*

1. What are the main challenges for industry-academia collaboration?
2. What are the key instruments (such as policy tools, funding schemes, regulatory measures) that can be enablers of enhanced industry-academia collaboration?
3. How to foster synergies between different sectors and actors to ensure better knowledge valorisation of R&I results and address global societal and economic challenges?
4. How can industry-academia collaboration be more diverse? Are there any specific measures or strategies that can be implemented to encourage participation and enhance the overall impact of these partnerships? Are there specific measures to target innovative SMEs?

⁹ [Chatham House Rule | Chatham House – International Affairs Think Tank](#) (25/04/2023)

Some general conclusions that referred to both topics and were highlighted in the discussions, are that:

- The discussions revealed a wide variety of different approaches, strategies and tools for knowledge valorisation used by the countries participating in the MLD. Some are more widely used than others.
- While some countries have long standing experience (e.g. more than 20 years) and well established strategies, frameworks and tools for intellectual assets management and industry-academia collaboration, other countries have only very recently established such policies and instruments.
- The available resources for knowledge valorisation in terms of funding and skills can differ significantly between countries.
- Strategies (e.g. on intellectual property arising from publicly funded research) and regulations at national level, and IP guidelines at organisational level provide the necessary frame to encourage knowledge valorisation.

Some first observations and general conclusions of the breakout sessions are presented below:

Measures and support tools for knowledge valorisation

- A rich variety of measures and support tools for knowledge valorisation have been reported in the different breakout discussions.
- In the context of intellectual assets management, initiatives including mentoring and training for researchers on IP protection, funding instruments for patenting and for support for proof of concepts, and funding for Technology Transfer Offices (TTOs) were mentioned.
- In the context of industry-academia collaboration, initiatives including innovation vouchers, collaborative research projects among research and business, tech-transfer festivals, clusters and staff exchanges were mentioned.
- Measures and support tools, regulations and funding schemes should be established with a long-term view, which can be longer than 10 years. Stability and long-term funding are key to successful knowledge valorisation.
- Intermediaries for knowledge valorisation are highly important and come in a variety of forms, such as valorisation managers, technology brokers, Technology Transfer Offices (TTOs).
- Information and promotion measures, knowledge and contact brokerage are used increasingly for both intellectual assets management and industry-academia collaboration. They can take the form of virtual innovation platforms, promotion of most promising research results for exploitation, and research-business brokerage events among others.
- Open innovation, co-creation and valorisation of R&I results for addressing societal challenges can be supported through specific funding programmes for multidisciplinary research. One concrete example that was shared is the use of policy briefs and so-called solution cards for valorising the results.

Challenges and opportunities in knowledge valorisation

- Several countries reported a lack of funding for intellectual property (IP) protection and for support instruments, as well as a lack of skills which are hampering knowledge valorisation.
- A better understanding of needs and expectations among partners in industry-academia collaboration is needed, and intermediaries play a crucial role as facilitators of collaboration here.
- A shift of behaviour among researchers and innovators towards knowledge valorisation can be stimulated through including such activities (e.g. patenting, joint projects with industry) into research assessment policies.
- More cross-TTO collaboration would be beneficial for navigating the IP landscape. The reason is that the patent landscape has become more fragmented, as researchers and companies own patents in the same field.
- Allocation of IP among researchers and their organisation, licensing, taking shares in spin-out companies, and other measures for intellectual assets management have become usual practice in universities and research organisations in countries experienced with knowledge valorisation.
- A remaining challenge is patent valuation. When it is sold by a university or research organisation, there is a risk of underselling the patent at a too low price. More concrete regulation around patent valuation at an early stage would be useful.
- Non-technological solutions and research results play an important role as knowledge assets, which provide an opportunity for valorisation.

Skills and knowledge valorisation

- There is a need for increasing the skills necessary for knowledge valorisation at various levels. Some countries need better qualified personnel for TTOs, and the lack of experts in deep tech transfer was highlighted.
- The entrepreneurial skills of universities and researchers should be strengthened to foster the creation of spin-outs. Intersectoral mobility and knowledge exchange programmes between industry and academia contribute to a skilled workforce, a better mutual understanding and ultimately to economic growth. For example, Industrial PhD programmes are a common tool for furthering industry-academia collaboration. They are established in several countries and gaining in importance.
- Cooperation between industry and academia should also foster learning and understanding each other's cultures and needs. The industry needs to be more involved in education/training programmes for students and researchers at a very early stage. This reduces researchers' hesitation to move to the non-academic world.

REPORT

WORKSHOP KNOWLEDGE VALORISATION

Introduction

The European Commission initiated a Multilateral Dialogue (MLD) on the principles and values underpinning international research and innovation (R&I) collaboration in July 2022. This Dialogue, which brings together the EU Member States, over 30 other countries, European stakeholders and international organisations, aims to have an open discussion to develop a common understanding of these principles and values as a reliable basis for international R&I cooperation.

This workshop, the sixth of the series, focused on Knowledge Valorisation through intellectual assets management and industry-academia collaboration. The event was co-designed and co-organised by Morocco, Hungary, the Young European Research Universities Network (YERUN) and the European Commission. It attracted around 120 participants from 32 countries, the OECD, and a number of European stakeholder organisations.

Knowledge valorisation is the process of creating social and economic value from knowledge by linking different areas and sectors and by transforming data, know-how and research results into sustainable products, services, solutions and knowledge-based policies that benefit society. Knowledge valorisation goes beyond knowledge and technology transfer and implies a focus on the whole R&I ecosystem and on co-creation between its actors. It embraces non-technological solutions that can derive benefits to society as a whole. Moreover, knowledge valorisation takes place through various channels including intellectual assets management, industry-academia collaboration, standardisation, citizen engagement and policy uptake.

The objective of the workshop was to learn from each other by exchanging experiences, approaches and best practices, on two topics, namely knowledge management in the context of intellectual asset management and in industry-academia collaboration. Two keynote speeches set the policy scene of the workshop – with concrete examples of (inter)national and European policies and initiatives on knowledge valorisation.

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- referred to the Repository of best practices of the EU Knowledge Valorisation Platform and to the EU Knowledge Valorisation Week, a flagship yearly event organised by DG R&I where best practices are showcased.

After setting the scene with the keynote speeches, the participants discussed in two rounds of parallel breakout sessions the topics of intellectual assets management and industry-academia collaboration. The discussions followed the Chatham House Rule¹ to encourage an open exchange among participants. The discussions were guided by the following sets of questions per topic:

Topic 1: *Knowledge valorisation through intellectual assets management*

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3. What strategies or best practices are crucial for effectively managing intellectual assets to create value? Do you adapt these strategies in the context of international research projects?
4. How can open innovation and collaboration play a role in maximising the value of intellectual assets?

Topic 2: *Knowledge valorisation through industry-academia collaboration: challenges and drivers of change*

1. What are the main challenges for industry-academia collaboration?
2. What are the key instruments (such as policy tools, funding schemes, regulatory measures) that can be enablers of enhanced industry-academia collaboration?
3. How to foster synergies between different sectors and actors to ensure better knowledge valorisation of R&I results and address global societal and economic challenges?
4. How can industry-academia collaboration be more diverse? Are there any specific measures or strategies that can be implemented to encourage participation and enhance the overall impact of these partnerships? Are there specific measures to target innovative SMEs?

Some general conclusions that referred to both topics and were highlighted in the discussions, are that:

- Almost all participating countries share the same understanding on the importance of knowledge valorisation and the great potential it has for societal and market benefit.
- The discussions revealed a wide variety of different approaches, strategies and tools for knowledge valorisation used by different countries. Some are more widely used than others.
- While some countries have long standing experience (e.g. more than 20 years) and well established strategies, frameworks and tools for intellectual asset management and industry-academia collaboration, other countries have only very recently established such policies and instruments.
- The available resources for knowledge valorisation in terms of funding and skills also differ significantly.
- Strategies (e.g. on IP from publicly funded research) and regulation provide the necessary frame for knowledge valorisation.

¹ [Chatham House Rule | Chatham House – International Affairs Think Tank](#) (18/10/2023)

Knowledge valorisation through intellectual asset management and industry-academia collaboration

A well-developed ecosystem, with strategies and rules, incentives and funding tools, as well as intermediaries and communication support is needed to increase knowledge valorisation.

The following paragraphs will sum up the discussion in more detail, giving some examples of the activities that were mentioned by the participants.

Strategies, Rules and Guidelines for Knowledge Valorisation

Strategies and regulation provide the necessary frame for knowledge valorisation. These may cover open innovation strategies, strategies addressing intellectual property (IP) generated from publicly funded research, and others. Governments usually issue legislation and policies for intellectual assets management while universities implement them through guidelines. South Africa highlighted that an Intellectual Property Rights from Publicly Financed Research and Development Act² was adopted in 2010 with the objective of making academia aware of the value created in academic institutions and to move away from the approach of ‘publish or perish’. Japan mentioned that its Ministry of Economy, Trade and Industry provides guidelines on how to value intellectual assets and guidelines for industry academia collaboration. The Netherlands provided another example with its guidelines for collaboration agreements and spin-offs from universities.³

Clear rules for the allocation of IP among researchers, their organisations and other parties (e.g. companies) are a good pre-condition for knowledge valorisation activities. In many countries the universities and research institutes own the IP generated by researchers. In contrast, Sweden applies the so-called professor’s privilege: the rule is that if a researcher is employed by the university, she/he owns the patentable invention; in practice this encompasses ownership of all intellectual assets. Other countries use percentages for allocating IP ownership: for example, an Austrian Technology Transfer Office (TTO) reported that usually 50% of IP is allocated to the researcher and 50% to the organisation. In most countries with long-standing experience in knowledge valorisation such rules are in place. However, several other countries mentioned these rules on IP ownership as still being a challenge.

In countries experienced with knowledge valorisation, the allocation of IP among researchers and their institutions, licensing, taking shares in spin-off companies, and other measures for intellectual assets management have become usual practice in universities and research organisations. A remaining challenge in these countries is patent valuation. When it is sold by a university or research organisation, there is a risk of underselling the patent at a too low price. More detailed regulation around patent valuation at an early stage would be useful.

Templates and standard agreements are important for facilitating knowledge valorisation, and they are used successfully in certain countries. For example, the United Kingdom, has developed such standard agreements for industry-academia collaboration.⁴ Documents have also been designed for specific fields, e.g. in health care.⁵ Experience has shown that they are used widely and work well, and they are very helpful for small and medium-sized companies (SMEs) in particular, as they do not always have the resources and in-house legal advice to establish such agreements. Expanding agreements to new fields is under consideration (e.g. for spin-offs). It was recommended that the templates should be flexible enough to cover different types of knowledge valorisation routes. The documents were co-

² [Intellectual Property Rights from Publicly Financed Research and Development Act: Regulations | South African Government \(www.gov.za\)](https://www.gov.za)

³ <https://universiteitenvannederland.nl/files/documenten/Dealterm%20Principles%20UNL.pdf> (18.10.2023)

⁴ <https://www.gov.uk/guidance/university-and-business-collaboration-agreements-lambert-toolkit> (18.10.2023)

⁵ <https://www.nihr.ac.uk/documents/collaboration-agreements-guidance/12136> (18.10.2023)

created involving research and business actors, including universities, trade associations, and companies.

Challenges for Knowledge Valorisation

There are not many metrics for intellectual assets management and technology transfer collected yet, which could underpin knowledge valorisation policies. Several countries reported a lack of funding for IP protection and for support instruments, as well as a lack of skills which hampers knowledge valorisation.

Many uncertainties revolve around IP in industry-academia collaboration. In some countries IP legislation can limit access to the research results of public research organisations or academic actors. Additionally, the concept of state aid is sometimes misunderstood, and state aid rules can in some cases hinder industry-academia collaboration. Timelines between industry and academia differ, and low technology readiness levels (TRL) of the technologies developed at public research organisations may hamper collaboration between the two. IP stemming from university research is often at an early stage and not ready to be valorised as such. This situation is aggravated by a lack of funding to improve the maturity and to bring patents from an early to a later stage of implementation and closer towards industry. Researchers tend to disclose results before assessing their IP protection, which may limit the market valorisation of their knowledge. In general, we observe an increased interest in knowledge valorisation activities among researchers when financial support for such activities is available. Some countries mention that most patents are owned by universities and research centres, but they are facing difficulties in licensing them. Industry operates internationally, but academia often works at the national level and according to their national rules. Red tape and bureaucratic procedures were also cited as barriers to knowledge valorisation activities.

Lack of incentives for the researchers or academics concerning collaboration and for sharing results with third parties is another issue. Even in countries experienced with knowledge valorisation, it is sometimes difficult for private sector entities to access academic structures and infrastructure. University researchers are overburdened with research, teaching, and administration. This makes it difficult to deal with innovation, which is a non-compulsory activity. Participants mentioned that in some cases researchers and universities think only in terms of patents, and do not consider other means of intellectual assets management and knowledge valorisation routes.

Furthermore, funding programmes are not tailored enough to foster knowledge valorisation activities. Some government incentives (e.g. tax incentives) cannot be used by universities, but only by private firms. Some programmes provide only short-term support for industry-academia collaboration, while longer term schemes would also be required.

On the business side, the limited absorption capacity of companies complicates the uptake of innovation and hinders knowledge valorisation. Industry seems to be in some cases less innovative in their R&D, taking less risk than academia. For universities it is sometimes difficult to identify the 'technical people' in companies with whom they can engage for knowledge valorisation activities. Especially SMEs often still seem to lack a good understanding of IP, in particular of IP different from patents such as protecting know-how, methods, and other IP. Moreover, IP protection can be too expensive for SMEs and related funding instruments may be lacking. SMEs may feel overpowered by the universities and public research organisations, and their lawyers, IP professionals and TTO officers who work in the interest of their institutions.

Open Science and open innovation concepts are often not well understood. In knowledge transfer activities towards start-ups and new enterprises, the argument is sometimes put forward that knowledge should be transferred to these actors for free, because academic knowledge is already paid

with public funds. Awareness needs to be raised, in particular among scientists, that although knowledge is available through Open Science, it is different from exploiting it freely and does not exclude protection measures before publication. A lack of awareness among researchers and TTOs on open science and innovation was highlighted, and training on these topics recommended by the participants. For the universities and its TTOs the goals of knowledge valorisation activities have to be specified more precisely, in the span of focusing on knowledge exchange versus maximising profits from spin-offs. Furthermore, countries reported ongoing discussions at national level on strengthening citizen involvement in science, and on how to better integrate universities with its social sciences and humanities capacities in knowledge valorisation.

Overall, large differences between countries in their experience with knowledge valorisation were underlined, indicating that some countries and institutions have not yet reached a certain maturity level in the area of knowledge valorisation. In many countries, challenges remain with identifying inventions to be protected and with basic procedures and activities in technology transfer. It will be important to continue supporting traditional technology transfer, while institutions have to be accompanied with advice on a transition to broader knowledge valorisation activities. It was recommended that key issues for knowledge valorisation should be taken into account already at the beginning of research projects, especially non-disclosure of results, joint ownership, legal aspects of IP, and thinking of the strategy after the project and of suitable partners for valorising results.

Opportunities for Knowledge Valorisation

Non-technological solutions play an important role as knowledge assets. Open innovation, co-creation and valorisation of the related R&I results for addressing societal challenges can be tackled with specific funding programmes for multidisciplinary research. One concrete example shared by Finland is the use of policy briefs and so-called solution cards for valorising the research results generated in its programme ‘Strategic research – research-based knowledge for society’.⁶

Over the years in OECD countries an evolution towards more use of public procurement and co-creation via public-private partnership can be seen. This approach is not just trying to push from the side of the universities, but to also work on the demand side of innovation. Ongoing processes related to this kind of partnerships depend on the ecosystems that they are embedded in. Smart specialisation strategies have been a way to strengthen these ecosystems.

Another recent strategy related trend can be observed with the development of sector specific strategies and support tools (e.g. for biotechnologies) for intellectual assets management. The Netherlands has established in the course of this year a novel nation-wide programme for biotechnology, the biotech booster.⁷ In this programme research organisations and universities jointly discuss and improve transferable IP, involving as well experienced entrepreneurs.

Societal and global challenges: it was noted that public research institutions should contribute to the mitigation of societal challenges, and societal impact should get more in focus beyond the usual economic impact of R&I activities. At the EU level the concept and support programme of ‘missions’ has been developed for tackling societal challenges (e.g. climate change adaptation). They foster industry-academia collaboration, cooperation with public authorities, municipalities and civil society. At the national level, some countries mentioned that long-term mechanisms have been established. Slovenia has supported research partnerships among industry and academia in thematic fields that have been defined in smart specialisation strategies, and thus are connecting to societal challenges. A

⁶ <https://www.aka.fi/en/strategic-research/>

⁷ <https://biotechbooster.nl/>

short-term instrument that the country uses is research calls related to Sustainable Development Goals (SDGs) and other challenges. However, how to respond to ad-hoc challenges is still a problem to be solved, which requires relying on already established networks.

Dialogue and Understanding, Mindset and Expectations for Knowledge Valorisation

Participants noted that a better understanding of the needs and expectations among partners in industry-academia collaboration is required, as well as improved communication. The dialogue between academia and industry needs to be promoted, in order to understand the common goals and create long-term impactful synergies. Furthermore, it is important to build trust among industry that scientific results developed in collaborative projects, will have value for them. Differences in perception about research results between academia and industry have been noted. Some researchers engaged in basic research may be more attached to ideas, whereas industry participants are more pragmatic.

Some countries report that a change of mindset and cooperation culture will have to be brought about, as academics are currently more focused on basic research and publications than on applied research. Academics are not rewarded for their commercial output in their career (both financially as well as in their status/career growth). Knowledge valorisation activities can indeed be incentivised through research assessment, when such activities positively influence scores for researchers.

In addition, developing an entrepreneurial spirit already from early-stage (student level) was considered important. Examples of supporting start-up creation by students or researchers, which could also be a solution to drive innovation in those countries lacking certain sectors. In Japan, there is a programme to support start-ups from early stage, including subsidies to apply for IPRs, and it is quite successful for patenting. In Algeria, there is a programme for students to enable them to create start-ups, through services such as providing funds, coaching, building business incubators for market uptake of ideas.

Improving the soft skills (e.g. communication, interpersonal skills) of researchers can facilitate the industry-academia collaboration. Argentina organises training on private funding, and communication workshops for researchers, which help turn their technical communication into a more market friendly communication.

An 'Innovation Café' was cited as a dialogue instrument, where representatives from industry and research organisations meet and discuss about topics of joint interest for research, or research in the frame of sustainable development goals and smart specialisation fields.

Intermediaries for Knowledge Valorisation

Intermediaries for knowledge valorisation are highly important and come in a variety of shapes or names, such as valorisation managers, technology brokers, Technology Transfer Offices (TTOs), and Knowledge Transfer Offices (KTOs). The concept of TTOs has been broadened to Knowledge Transfer Offices (KTOs), which cover knowledge assets from all scientific disciplines, including from Social Sciences and Humanities (SSH), humanities and arts. More cross-TTO collaboration would be beneficial for navigating the IP landscape. The reason is that the patent landscape has become more fragmented, as today researchers and companies own patents in the same field.

It was raised in the discussion that TTO/KTO personnel needs to know how to carry out contract negotiations, deal with ownership issues and non-disclosure agreements. Critical questions for intellectual assets management also include licensing, how to carry out market analysis and IP valuation. Intermediaries with specific knowledge of both industry and academia help to establish and carry out communication between the two sides, and to manage their respective expectations. They

have to know the sector-related legislation, the products and results of actors of their ecosystem, and promote the establishing of start-ups and spin-offs of universities.

France shared that its local TTOs provide services to research organisations and universities to draft a valorisation strategy and to implement it. The implementation refers to performing market research and working in a lab to improve the Technology Readiness Level so that the asset can be transferred more easily to the private sector. In the last couple of years the country has observed a strong shift to start-ups, which over time develop into larger companies or merge into existing ones and which serve as a vehicle for technology transfer.

In countries with experience in knowledge valorisation, the Technology Transfer Offices (TTOs) can be self-sustainable from a financial point of view due to license and other income. Countries use public financial support for establishing TTOs, which tends to be gradually phased out over time or has to be regularly applied for. For example, for starting up the activities of TTOs, 100% public funding is made available for some years, and then gradually phased out with a 75% or 50% funding until self-sustainability of the TTOs is reached. In other countries public support or own university /research institute funding is provided on a continuous basis; a challenge is in this context to get the buy-in from university management to invest in TTOs and allocate enough resources.

Clusters can also function as intermediaries; they connect innovation actors and facilitate the implementation of long-term visions and plans among knowledge valorisation actors in specific industry sectors. It was also noted that primarily governments should subsidise clusters.

Measures and Tools for Knowledge Valorisation

A rich portfolio of measures and support tools for knowledge valorisation was reported in the breakout discussions. It was stressed that more incentives should be available for researchers in order to promote industry-academia collaborations, including non-technical fields and social innovation. However, participants raised the issue of the complexity of funding schemes, when too many objectives are included into one scheme. Measures and support tools, regulation and funding schemes should be established with a long-term view, which can be longer than 10 years. Stability and long-term funding are key to successful knowledge valorisation.

- Different funding tools for intellectual asset management and IP protection were mentioned.
 - Voucher systems can be used for purchasing consultancy time to help with intellectual assets management⁸. Slovenia shared positive experience from providing reduced patenting fees for research institutions and pre-checks of patent applications by experts. Also, patent examiners provide help for SMEs with questions about patentability. The country is currently exploring possibilities for using IP as collateral for loans, and for considering IP as investment when start-ups are being established. Innovation vouchers as a smaller scale funding tool allow companies to acquire research expertise from research organisations and initiate collaboration in particular among SMEs, and universities and research organisations.
 - Financial incentives to secure IPRs with rebates of up to 50% for universities, which allows securing IPRs for results developed at the university.
 - Funding for collaborative R&I is essential to incentivise industry and academia to partner up, but also for developing the skills for collaboration and for knowledge valorisation. In the long run, like this, the expertise in knowledge valorisation and in

⁸ Examples: [EUIPO \(European Union Intellectual Property Office\)](#) and [European IP Helpdesk \(europa.eu\)](#)

handling intellectual assets will increase, which leads usually to a positive spiral in knowledge valorisation.

- For intellectual assets management mentoring and training for researchers on IP protection and patenting were discussed as suitable tools.
- Knowledge transfer partnerships are a similar tool, which come in the form of awards to small businesses that liaise with universities. It provides a solution to the issue that SMEs have shorter term and concrete needs to be addressed, while large businesses can create more substantial, long-term and strategic partnerships with research partners and build trust among each other.
- Proof of concept instruments allow for testing, technology validation and prototyping of solutions in short-term projects.
- Industry academia collaboration around R&I infrastructures is being stimulated. Platforms have been established, where infrastructures and R&I services are available in different research organisations to enhance collaborations with industry.
- Long-term collaborations can be realised in institutionalised forms such as joint laboratories, where firms have access to the facilities of RTOs or academic institutions), innovation alliances or clusters with adequate funding mechanisms.
- Incubators and acceleration programmes help to turn research into spin offs. Ireland mentioned its 'disruptive technologies innovation fund' as support tool, which has attracted a high potential start-up population, spin-outs from universities, and has led to collaboration in many cases.
- Fellowship programmes allow researchers to establish spin-offs. Another concrete example supports researchers to continue working on an idea after the end of a project with a grant for 1-2 years. They can explore the commercialisation of the idea in question, get entrepreneurship training and decide on a career change. Half of those who engaged so far have decided to pursue entrepreneurship.

Beyond funding tools, joint forums and committees, and partnerships with industry were recommended. These promote a better understanding of the needs of business and how to connect the business sector with universities. South Africa has seen successful cases of industry-academia collaboration where the research institution counted in the early-stage research on the opinion of an industry expert, even informally. This has proven very effective to address the needs of the industry, and is an example of best practice from universities which is not codified in funding programmes.

Information, Promotion, Matchmaking, Brokerage

Information and promotion measures, knowledge and contact brokerage are increasingly used for both intellectual assets management and industry-academia collaboration. They can take the form of virtual innovation platforms, promotion of most promising research results for exploitation, and research-business brokerage events among others. Workshops and matchmaking initiatives tend to work better when they are not virtual, and people are in the same room physically. It is also important to organise not only ad-hoc meetings, but iterations of events, which ensure a continuity of initiatives over time.

In smaller countries funding is not always the challenge, but finding industrial partners, as there may not be enough companies in certain sectors available. Networking and contact brokerage is organised in the frame of various events. Slovenia organises 'UniMinds', a large networking event for university

and business representatives.⁹ Croatia runs a university platform bringing together researchers and industry participants, which have their own profiles to inform the community of their specific needs and what they are able to provide.¹⁰ South Africa funds a virtual platform called 'Innovation Bridge Portal', which acts as a one stop shop to connect industry and academia.¹¹ A similar initiative from the UK is its 'konfer' platform.¹² Morocco referred to its IP MarketPlace, an initiative of the national intellectual property office for valorising intellectual assets.¹³ Sweden organises a yearly 'research2business' summit¹⁴, where researchers showcase their research and meet the industry. Romania holds tech-transfer festivals, and other countries organise matchmaking, establish standards of practice, and promote good practice in knowledge valorisation.

Belgium established with its 'eyeopener' programme a single point of contact to 13 universities of applied sciences (UAS), which SMEs and other business actors can access for acquiring research knowledge.¹⁵ Experience has shown that UAS can be closer to the needs of business and in particular SMEs than universities and research institutes. It is facilitated by the fact that students at UAS often have to work in companies, and teachers have experience and personal relationship with businesses.

In the United States, the National Science Foundation brings together researchers and the private sector by organising workshops and roadshows. It tackles brokerage from the demand side: topics generally come from industry and this is a way to test interest from academics to submit research proposals. This increases motivation and focus of participants to collaborate and has resulted in successful partnerships.¹⁶

Skills for Knowledge Valorisation

There is a need for increasing the skills necessary for knowledge valorisation at various levels. Some countries need better qualified personnel for TTOs, and a lack of experts in deep tech transfer was highlighted. Some participants mentioned a high turnover of employment in TTOs, which makes it difficult to build trust and long-term relations with partners and achieving a proper knowledge valorisation culture within the TTO. One of the reasons identified was that non-research positions at universities and research institutes are not paid competitively and no career progression is foreseen (fixed grading schemes are applied and are not flexible enough). In some countries there is no institutional background for permanent TTO staff. As a result, top-performers either do not go to the TTOs or stay only temporarily. There is a need to align human resources policies for TTOs with priorities for the institutions and the public sector, which are becoming focused on knowledge transfer, collaboration, and intellectual assets management. In the EU this need for professionals with the appropriate skills and experience is addressed in the European Research Area (ERA) Action 17, which deals with training, recruiting, wages, incentives, and promotion.¹⁷

It is important to improve skills and expertise in managing research results. A proper curriculum should be developed for these kind of activities. Participants shared the opinion that proper incentives for skilled intermediaries are needed. Some speakers proposed building a career profile by giving more visibility and prestige to such positions within research organisations and making it an alternative

⁹ <https://uniminds.si/> (18.10.2023)

¹⁰ Početna | RIMAP <https://rimap.uniri.hr/> (18.10.2023)

¹¹ <https://www.innovationbridge.info/ibportal/> (18.10.2023)

¹² <https://konfer.online> (18.10.2023)

¹³ <https://www.ipmarketplace.ma/en/a-propos/> (18.10.2023)

¹⁴ <https://www.iva.se/en/what-iva-does/projects-and-programmes/research2business/> (18.10.2023)

¹⁵ <https://www.vlaamsehogescholenraad.be/nl/blikopener> (18.10.2023)

¹⁶ IUCRC | Industry-University Research Partnerships, <https://iucrc.nsf.gov/> (18.10.2023)

¹⁷ https://commission.europa.eu/system/files/2021-11/ec_rtd_era-policy-agenda-2021.pdf (18.10.2023)

indicator for research assessment. An entrepreneurial culture should be fostered by training people on the process of taking ideas to market and also on IP elements.

Universities and researchers should strengthen their entrepreneurial skills to foster the creation of spin-offs. In Sweden researchers must take a course on intellectual assets management provided by the IP offices and the innovation agency. In most EU countries all universities need to develop expertise in IP to comply with relevant rules for knowledge valorisation, including competition and state aid rules.

Cooperation between industry and academia should also foster learning and understanding each other's cultures and needs. The industry needs to be more involved in education/training programmes for students and researchers at a very early stage. This reduces researchers' hesitation to move to the non-academic world or to engage in research cooperation with industry. More capacity building and support to develop skills are needed with a special focus on SMEs.

Intersectoral mobility and knowledge exchange programmes between industry and academia contribute to a skilled workforce, a better mutual understanding and ultimately to economic growth. Intersectoral mobility is encouraged, and movement from academia to industry and vice versa facilitated with support programmes. These programmes allow researchers to spend some time in industry, and business representatives to work in research for some time.

Industrial PhD programmes are a common tool for furthering industry-academia collaboration. They are established in several countries and gaining in importance (e.g. Algeria, Morocco, Spain¹⁸, Switzerland). The work of the researcher is co-supervised by an academic and an industry expert, and placements in industry are supported. This can help building bridges between academia and industry.

The workshop was summarised by Péter Lábodý of the Hungarian Intellectual Property Office (HIPO), who pointed out that the topic of knowledge valorisation is of major importance. Participants referred to many national policies, which focus on how the innovative results can be better valorised using intellectual assets management and how the industry and academia can better cooperate. Péter Lábodý underlined that the speakers were rather positive about the regulatory context in their respective countries. Important elements for developing intellectual assets management and for improving industry-academia collaboration are rather the operational and structural practices for knowledge valorisation, the funding system, the use of collaborative tools (certain platforms) as well as the level of awareness of knowledge valorisation. Finally, he emphasised the importance of collaboration and thanked the organisers for the cooperation and all participants and moderators for making this workshop a successful event.

¹⁸ <https://www.uv.es/uvweb/doctoral-studies-school/en/industrial-doctorates//what-is-an-industrial-doctorate-1286221083996.html> (18.10.2023)

ANNEX 1: Moderators and Notetakers

With special thanks to the moderators and note takers that volunteered for the workshop.

Moderators of the break-out rooms:

- András Haszonits, Danubia, Hungary
- Péter Káldos, intellectual property valuation specialist, Hungary
- Ádám Mészáros, IFUA Horváth, Hungary
- Laszlo Koranyi, Ministry of Culture and Innovation, Hungary
- Justyna Ciegotura,
- Catalina Martinez, Spanish National Research Council (CSIC), Spain
- Stefanie Kalff-Lena, EC DG RTD
- Ioannis Sagias, EC DG RTD
- Manfred Spiesberger, ZSI, Austria
- Sasa Zelenika, UNIRI, YERUN

Note takers of the break-out rooms:

- Krisztina Varga, Hungarian Intellectual Property Office (HIPO), Hungary
- Sanja Terlevic, YERUN
- Reka Bozoki-Gal, National Research Development and Innovation Office (NRDIO - NKFIH), Hungary
- Ágota Dávid, Permanent Representation of Hungary to the European Union
- Federica Baldan, EC DG RTD
- Florentina Golisteanu, EC DG RTD
- Manon Prado, EC DG RTD
- Iiro Eerola, EC DG RTD
- Tess Landon, ZSI, Austria
- Chiara Colella, YERUN

ANNEX 2: Participants

Countries represented in the workshop:

Algeria, Argentina, Austria, Belgium, Bosnia and Herzegovina, Brazil, Chile, China, Estonia, Finland, France, Georgia, Germany, Hungary, Ireland, Japan, Lithuania, Luxembourg, Malta, Morocco, The Netherlands, Norway, Portugal, Romania, Slovenia, South Africa, Sweden, Switzerland, United Kingdom, USA

Stakeholder – and international organisations represented in the workshop

ALLEA, AURORA, EU-LIFE, OECD, The Guild, YERUN

European Commission

ANNEX 3

List of abbreviations

ERA	European Research Area
IP	Intellectual Property
MLD	Multilateral Dialogue
SMEs	Small and Medium sized Enterprises
TTO	Technology Transfer Office
UAS	Universities of Applied Sciences