



European IPR Helpdesk

Fact Sheet

Exploitation channels for public research results

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Introduction

Public research is the activity carried out by publicly funded research centres. These can be considered institutions, universities, enterprises, whose activity is primarily funded with public resources, and that here are referred to as public research organisations (PROs).

This fact sheet has the aim to present tools, tips and practices for PROs to convert the knowledge resulting from publicly funded research activities into

socio-economic benefits. This can be achieved in different ways, not only through direct commercialisation tools, but also via collaborative or contract research conducted in co-operation with or commissioned by the industry. In so doing, the dissemination and transfer of the generated knowledge to the market would therefore be ensured, with the objective of creating products and services to enhance social welfare.¹

1. Exploitation impact

The PROs' research activity plays a fundamental role in the innovation field and can stimulate the links between the PROs and industry for knowledge spill over. The flow of knowledge and technology between the public research and business can be achieved through the exploitation of research results.² This latter can among others:

- Generate additional revenues for PROs;
- Promote open innovation;
- Increase access to and sharing of research data and publications;
- Engender possibilities for collaboration in research and teaching;
- Raise the PRO profile and get publicity;
- Broaden the job market for students.

All the above could finally create a more competitive EU market, capable of attracting new students, scientists and further research funding – in particular from the private sector³ – at the international level.

To this end, commercialisation and transfer of knowledge are indeed two mainstream tools to turn science into business. However, it is worth noting that they can be complementary, as they often operate simultaneously.

Nevertheless, an effective exploitation of the research results would entail a proper management of intellectual property rights (IPR), not limited to patents or trade marks, but extended *inter alia* to copyright and trade secrets⁴. In order to

¹ This fact sheet is based on two major documents: the Knowledge Transfer Study 2010-2012, final report, available at <http://knowledge-transfer-study.eu/norm/home/>, a service for the European Commission's DG Research and Innovation to support the monitoring and reporting process of the [European Commission's Recommendation and Code of Practice on Knowledge Transfer](#); OECD (2013), *Commercialising Public Research: New Trends and Strategies*, OECD Publishing, an OECD report describing recent trends in government and university level policies to enhance the transfer and exploitation of public research and benchmark the patenting and licensing activities of PROs in a number of OECD countries and regions, available at <http://dx.doi.org/10.1787/9789264193321-en>.

² A fundamental role in the exploitation of research results is certainly played by Technology Transfer Offices (TTOs) within research centres and the IP department in companies.

³ For an overview of the financing avenues available to raise funding, you can read the European IPR Helpdesk fact sheet on "IP assets for financial advantages", available in its [library](#).

⁴ A proper management of trade secrets is the object of the "Confidential business information" fact sheet developed by the European IPR Helpdesk and available in its [library](#). Also concerning trade secrets, the European Commission has recently proposed a directive for confidential business

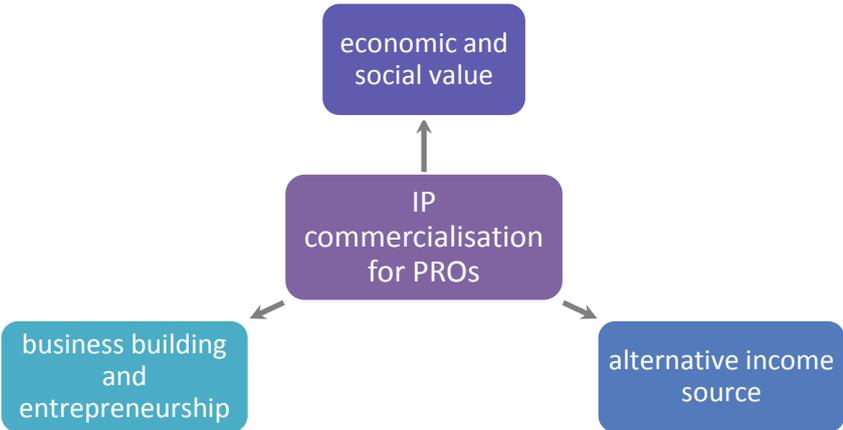
do so, PROs should develop an intellectual property (IP) policy, wherein to set principles and clear rules regarding in particular the disclosure of new ideas with potential commercial interest, the ownership of research results, record keeping, and so forth. Likewise, the IP policy should foster the identification and protection of IP (where appropriate), in line with the strategy and mission of the PRO and with a view to maximising socio-economic benefits.

It is crucial for PROs to monitor IP protection and knowledge transfer activities and related achievements, and publicise these regularly. Besides, PROs' research results, any related expertise and IPR should be made more visible to the private sector, in order to promote their exploitation.

In addition to that, other factors should be taken into account by PROs to promote commercialisation and transfer of knowledge, such as student and faculty mobility⁵, the development of entrepreneurial culture and associated skills for students and PROs staff, and a strengthened interaction with the private sector, i.e. public-private partnerships (PPPs).

2. Commercialisation channels

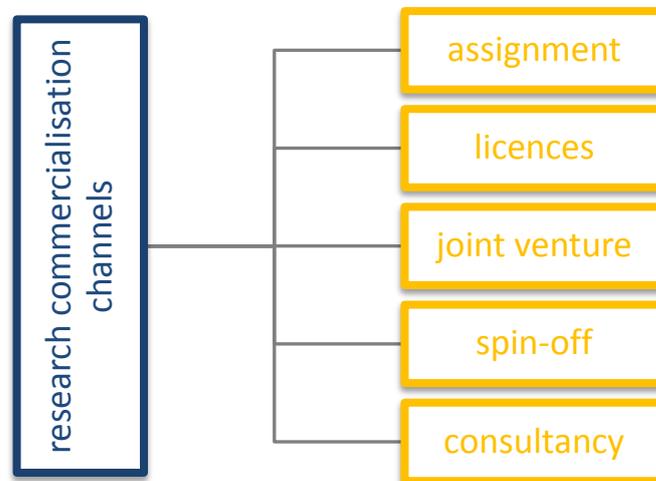
The importance of commercialising public research results can be justified by several reasons. Firstly, it would generate economic and social value and improve the competitiveness of national industry. Secondly, since the increasing costs of scientific research and national budgetary restrictions have significantly hit PROs, results commercialisation could constitute an alternative income source to fund their R&D activity. Thirdly, it would allow rooting an entrepreneurial culture within PROs. This is of particular importance for a successful exploitation of publicly funded knowledge. In view of that, PROs could offer business building and entrepreneurship as part of their study programme, to raise grass-roots human capital with the aim of establishing and growing start-ups.



information to be protected at the same level as other IPR. For more information see http://ec.europa.eu/internal_market/iprenforcement/trade_secrets/index_en.htm.

⁵ Industry hiring, secondments, student placement, and the like.

Channels at the disposal of PROs to commercialise public research are essentially the same as those used in business⁶, with some differences deriving from the objectives to be achieved, normally set in the IP policy.



2.1. Assignment

Through an assignment the ownership of IP is permanently transferred from one party (the assignor) to another party (the assignee). Consequently, the assignee becomes the new owner of the IPR.

The advantages of a permanent assignment are the availability of immediate cash flow return to be invested in further R&D activity, as payments usually take the form of a lump sum payment. Besides, the PROs would have no further responsibility for the management of the IP title, including the payment of fees or the monitoring of infringements.

On the other hand, an assignment causes the loss of control over the IPR. Therefore, any use by the assignor would amount to an infringement once the assignment is in force, except if certain uses are provided for in the agreement (such as for further research). An assignment could also be non-beneficial in terms of socio-economic benefits if the assignee does not have the skilled employees or the established business network to valorise it.

2.2. Licence

A licence agreement is a contract under which the holder of IP (licensor) grants permission for the use of the intangible asset concerned to another person

⁶ The following description of the channels will be rather concise, and for a deeper explanation of the individual commercialisation tools, reading the fact sheet series on "Commercialising Intellectual Property", available in the European IPR Helpdesk [library](#), is suggested.

(licensee), within the limits set by the provisions of the contract. When it comes to negotiate licence agreements, it is important to understand why PROs wish to license their IP, and which licence is more suitable to the specific case, as well as the potential risks of entering in such deal.

PROs should set a licensing policy, in order to harmonise practices and ensure fairness in all deals. In particular, transfers of ownership of IP owned by the PRO and the granting of exclusive licences should be carefully assessed, since this can diminish or eliminate altogether the control over the IP asset. Licences for exploitation purposes should involve adequate financial compensation, as well as other types of benefits.

Licences can provide research results with faster access to markets, PROs with additional source of income and control over their IP, all at once. On the contrary, PROs can lose control of information flowing from further development of the technology by virtue of the licence. The latter can affect the income streaming if lacking the skills and business network needed, which is particularly dangerous in exclusive licences.

2.3. Joint venture

Joint venture is a type of collaborative commercialisation. It is a situation where scientists and private companies jointly commit resources and research efforts to projects; research activities are carried out jointly and may be co-funded. Joint venture may range from short-term projects (non-incorporated joint venture), normally narrow in scope, to long-lasting strategic partnerships with multiple members and stakeholders (joint venture company).

More specifically, the parties to the joint venture share risks and contribute with their intellectual capital to technology research and development, production, marketing and further commercialisation.

The most significant advantage can be considered as the ability of PROs to reap economic benefits from the commercialisation of their already existing IP, or the one resulting from the joint venture.

Other associated advantages can be summarised as follow:

- Access to technology at affordable prices
- Access to resources not present on the market
- Sharing of R&D, marketing and commercialisation costs
- Utilisation of unused or not-usable IP assets
- Reduced investment risks
- Development of new products
- Access to new markets

Since a few IPRs are involved in a joint venture, PROs need to carefully define through licences the access to their and other parties' pre-existing IP, i.e. background, as well as the access to the generated IP, i.e. project results, that will be owned by the author-party and used by other parties in the venture.

2.4. Spin-off

A spin-off refers to a separate company usually established to bring IP, in this case resulting from public funding, onto the market. It is deemed to be a valuable channel to transform the PROs' technology into product and service, as well as to license out technology. Most importantly, spin-offs are considered as a fundamental mediator between the research environment and industries as they are a powerful means of technology transfer between these two sectors. This is most of the time achieved through the acquisition of the spin-out company by larger companies.

Besides these general scopes, creating spin-off companies would allow PROs to:

- Outsource the development process that might not fit with the PRO's scientific objectives;
- Obtain funding not available for purely research institutions to partially cover development costs;
- Participate in a European-funded research programme as an industrial partner;
- Endow research staff with entrepreneurial skills.

The creation of a spin-off is a complex process entailing the development of a separate business with the subsequent allocation of IPR and responsibilities, project and risk management and, in certain circumstances, fund raising to attract investors for financial contribution.

In the early stages when a spin-off is founded, a strategic decision should be taken on how the new company will acquire the IP belonging to the PRO. Two main methods exist: the contribution in kind from the PRO or the licensing of its intangible assets.

PROs should develop and publicise a spin-off policy, allowing and encouraging their staff to engage in the creation of spin-offs, where appropriate, and clarifying long-term relations between spin-offs and PROs.

2.5. Consultancy

This type of commercialisation comprises contract research and/or faculty consulting. The first channel consists of a research commissioned by a private company to pursue a solution to a problem of interest. It is distinct from most

types of consulting as it involves the creation of new knowledge according to the specifications or goals of the client. In the case of contract research, the results generated by the PRO should be owned by the private-sector party. The ownership of background should not be affected by the project. Contract research has great significance for industry and is considered an important tool to foster PPPs.

Faculty consulting encompasses research or advisory services provided by researchers to industry clients. This is one of the most widespread activities in which industry and academics engage. Three different types of consulting are normally offered: research-, opportunity- and commercialisation-driven consulting. This channel is very important to industry and usually does not compromise university objectives.

3. Knowledge transfer channels

As explained above, commercialisation and knowledge transfer tools are not unidirectional and cannot be completely separated, as they often converge and operate in a complementary fashion.

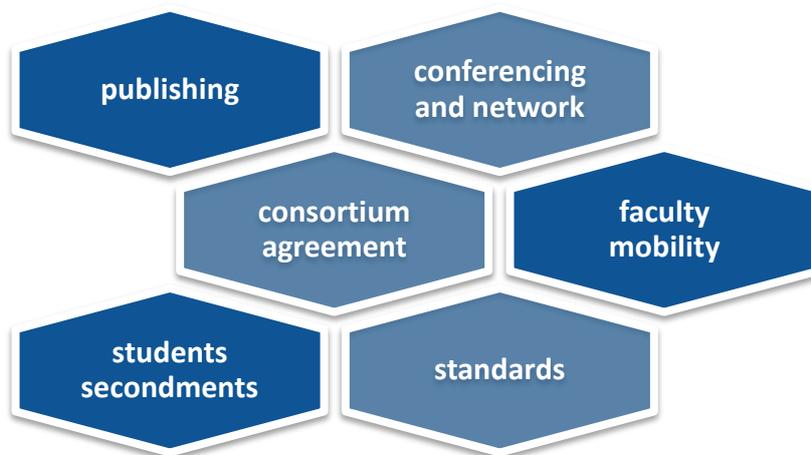
However, while commercialisation can be connected to the mere market exploitation of public research, knowledge transfer is more disposed to the flow of knowledge from PROs to industry⁷, with all the benefits related to social-economic growth. Although licences and spin-offs are deemed to be the most important commercialisation channels, knowledge spill-over can be achieved also by student and faculty mobility, academic consulting and research contracts. Student entrepreneurship is also gaining importance to promote the transfer of publicly funded knowledge.

These knowledge transfer tools can be translated in public-private partnerships, thanks also to the increasing practice for industry to source external knowledge to widen their knowledge base. In order to do so, industry is more and more engaging into co-operative R&D alliances with PROs to access their research, following the so-called *open innovation* process. In a few words, open innovation is intended as the use of internal and external technology sources to accelerate internal innovation, and expand the markets for external use of innovation. In this sense, companies who cannot afford internal R&D are progressively relying on external knowledge and profit from outsourced technology, by acquiring or licensing innovation (under the form of patents) from other organisations.

Beside the commercialisation tools⁸, which undoubtedly are forms of knowledge spill-over, other knowledge transfer channels are recognised as crucial in stimulating innovation:

⁷ This does not mean that knowledge flow cannot be multidirectional, as it can certainly run in the opposite direction, that is, from the private to the public sector.

⁸ Note that the tools examined under Commercialisation channels, chapter 2, are to be entirely transposed here as knowledge transfer tools.



3.1. Publishing

Publication is deemed to be the most suitable means of knowledge dissemination for PROs as it permits the fastest and open diffusion of research results.

The protection granted by the IP system to an article or publication is copyright, which arises automatically when the researcher writes it. It is worth mentioning that copyright only protects expression of the words contained in the text and its originality, but not the idea underlying the research findings. Therefore, before publishing PROs should carefully consider the objectives set out in the IP policy, to see whether the research results need to be protected by other IPR (e.g. patents, design, etc.), or the transmission of knowledge is carried through the open access model.⁹

3.2. Conferencing and networking

Alongside publications, professional conferences, informal relations, casual contact and conversations are among the channels ranked as most important by industry for the flow of knowledge between private and public sectors. As with publications, PROs should pay attention to the information disclosed in networking, as this could hamper further IP protection of the results generated.

⁹ A more comprehensive analysis of the IP issue related to publishing can be found in the fact sheet "Patenting v. Publishing", available in the [library](#) of the European IPR Helpdesk website. An overview on the Open Access model is provided by the article "Open access in the European Research Area: FP7 and Horizon 2020", published in the European IPR Helpdesk Bulletin, N°11, October - December 2013, available in the [library](#).

3.3. Consortium agreements

Collaborations between industry and PROs may take several forms. When a public-private partnership for conducting a R&D project is created, the parties usually sign a so-called consortium agreement.

This agreement aims to clarify the relationship among the project partners, including in particular the obligations between them, the organisation of the work, the management of the project and the generated IP. This partnership enables companies to gain access to new knowledge and new business relationships by establishing cross-licences between partners to the intellectual property shared and developed within the project.

IP-related issues that are to be addressed within consortium agreements include at least:

- ✓ Allocation of the ownership of intellectual property which is generated in the framework of the project,
- ✓ Identification of the intellectual property which is possessed by the parties before starting the project and which is necessary for project implementation (i.e. background),
- ✓ Access rights to the above for project execution or exploitation purposes, and
- ✓ The sharing of revenues.

3.4. Personnel mobility

The deployment and flow of publicly funded knowledge can also be fostered by student and faculty mobility between different science and technology sectors. Personnel exchanges and inter-sectoral mobility can certainly increase companies' research productivity. This may be particularly beneficial to small enterprises as they seem more likely to use personal contracts to interact with university researchers. Personnel mobility may take many forms; usually is realised by university or industry researchers spending time in the alternate settings. The most important form is however considered hiring by industry.

Students' secondment and placement are also important for knowledge spill-over and also represent major motivations for companies to engage in private-public linkages, with in this case the main benefit for academia. This may occur through, for example, joint supervision of theses, internships, or collaborative research.

3.5. Standards

A standard¹⁰ is a document, established by consensus and approved by a recognised body, which provides for common rules, guidelines or characteristics for activities or their results and having the purpose of achieving an optimum degree of order in a given context.

Various standards along the innovation chain – such as terminology, measurement, testing and interface standards – have been identified as knowledge transfer channels.¹¹ Depending on the current research stage, the standardisation activities are initiated by the various stakeholders involved – i.e. researchers in PROs in defining the terminology, and industry in the later phases of the technology development.

Useful Resources

For further information on the topic please also see:

- “Creating markets from research results”, EPO conference report:
[http://documents.epo.org/projects/babylon/acad.nsf/0/BDB209F69A00FB15C1257C3100513A11/\\$File/EPO_ConferenceReport_FINAL.pdf](http://documents.epo.org/projects/babylon/acad.nsf/0/BDB209F69A00FB15C1257C3100513A11/$File/EPO_ConferenceReport_FINAL.pdf)
- “Enhancing technology transfer at universities through collaboration with patent offices – Best practices and emerging needs”:
<http://www.curie.asso.fr/Enhancing-technology-transfer-at.html>
- Knowledge Transfer Study 2010-2012, final report:
<http://knowledge-transfer-study.eu/norm/home/>
- OECD (2013), *Commercialising Public Research: New Trends and Strategies*, OECD Publishing: <http://dx.doi.org/10.1787/9789264193321-en>
- Fact sheet series on “Commercialising Intellectual Property”:
http://www.iprhelpdesk.eu/library/fact-sheets?field_tags_tid%5B%5D=168
- Spichtinger, D., “Open access in the European Research Area: FP7 and Horizon 2020”, European IPR Helpdesk Bulletin, N°11, October - December 2013: http://www.iprhelpdesk.eu/bulletin_issue_11

¹⁰ The reading of the fact sheet “How to reap the benefit of standardisation in R&D” is suggested to better understand the importance of standards in the R&D field. The document, developed in collaboration with CEN-CENELEC, is available in the European IPR Helpdesk [library](#).

¹¹ Blind K. and S. Gauch (2009), “Research and standardisation in nanotechnology: Evidence from Germany”, *Journal of Technology Transfer*, Vol. 34, pp. 320-342, in OECD (2013), *Commercialising Public Research: New Trends and Strategies*, OECD Publishing, cited.

GET IN TOUCH

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ABOUT THE EUROPEAN IPR HELPDESK

The European IPR Helpdesk aims at raising awareness of Intellectual Property (IP) and Intellectual Property Rights (IPR) by providing information, direct advice and training on IP and IPR matters to current and potential participants of EU funded projects focusing on RTD and CIP. In addition, the European IPR Helpdesk provides IP support to EU SMEs negotiating or concluding transnational partnership agreements, especially through the Enterprise Europe Network. All services provided are free of charge.

Helpline: The Helpline service answers your IP queries within three working days. Please contact us via registration on our website – www.iprhelpdesk.eu – phone or fax.

Website: On our website you can find extensive information and helpful documents on different aspects of IPR and IP management, especially with regard to specific IP questions in the context of EU funded programmes.

Newsletter and Bulletin: Keep track of the latest news on IP and read expert articles and case studies by subscribing to our email newsletter and Bulletin.

Training: We have designed a training catalogue consisting of nine different modules. If you are interested in planning a session with us, simply send us an email at training@iprhelpdesk.eu

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