



European IPR Helpdesk

Fact Sheet

Patenting v. publishing

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Introduction

Usually, the two main means to bring technical and scientific knowledge to the public are patent applications and journal publications. With the advent of the internet two alternative means are available: the defensive publications and the open access model.

This fact sheet examines the different aspects of these knowledge dissemination tools, also taking into account the different needs and objectives of research organisations/universities (ROs) and small and medium sized enterprises/industry (SMEs). It is important to note that there is not a general rule to apply when choosing the right tool as they all serve different purposes

and can also be used simultaneously. Yet, one needs to ensure that the chosen tools are in line with the overall organisation strategy.

1. Publishing v. patenting

1.1. Traditional distinction

Traditionally, academic research is deemed to be focused on questions of essential scientific interest, the so-called *basic research*. This is usually intended to merely disclose new scientific and technical knowledge through publications. On the other hand, the *applied research* performed by the industry is normally aimed at commercialising the resulting innovation and therefore intended to increase the company value. To this end, research results are protected through patents and trade secrets.

	ROs	Industry
Type of research	Basic research	Applied research
Interest	Scientific application	Commercial application
Aim	Improve science	Improve company value
Outcome	Open	Protected
Dissemination	Publishing	Patenting

Table 1 – traditional view of the different research carried out by ROs and industry

According to the traditional distinction shown in Table 1, publication is the most suitable means of knowledge dissemination for ROs as it permits the fastest and open diffusion of research results. On the contrary, patents offer the industry the strongest protection to commercialise their innovation and recover the costs of the research investments.

1.2. New approach

In the last two decades, however, this scenario has dramatically changed, and expectations of how ROs create and manage their knowledge are changing fast, as this is increasingly considered by academic personnel as a source of income. This is also due to the fact that universities are more and more encouraged to collaborate with private companies on research projects in different areas, which

constitutes an expansion of their research interests into other sectors, such as biotechnology, nanotechnology, ICT and so forth. As a consequence, the boundary between scientific and applied research has blurred and, while the industry dissemination approach did not go through any significant transformation¹, the ROs' strategy moved away from the traditional "publishing". ROs have in fact started focusing on the opportunity to patent research results, and extract as much value as possible from intellectual property (IP).

This changed course of action is also due to two other factors. Firstly, the pressure for accountability and cost reduction has seen the redirection of research priorities towards more practical research. As a second point, the budget restrictions applied by governments all over Europe has forced universities to review their policy on IP and, at the same time, has led to new public support for the commercialisation of *publicly funded research results*. This last aspect has received particular attention by European and international institutions and organisations and driven them to help EU funded project beneficiaries to better exploit research results.²

1.3. Publishing

Dissemination of scientific knowledge through publication is one of the most common and rapid instruments. Publishing, however, is not always as timely as it may appear as the peer review process can delay the final article publication. Moreover, publishers are often not prone to pay authors of scientific articles³ who, in turn, are willing to publish for reasons related to their career path, besides the primary wish of disseminating knowledge.

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, the best ways to prevent others from reusing the inventions stemming from the research is patenting⁴ or keeping it as a secret.

¹ It must be said that during recent decades companies, mainly R&D-oriented ones, have also been publishing in technical and scientific journals.

² On this issue see Jolly A., "New horizons on university IP", European IPR Helpdesk Bulletin N°10, July - September 2013, available in the [library](#).

³ There might nonetheless be contractual arrangements providing for remuneration or royalty payments.

⁴ In some countries, ROs and SMEs could also apply for utility models in alternative to patents, compared to which the requirements are generally less strict, allowing for a faster and cheaper registration process. To understand the main characteristics of this IP tool see, d'Erme R., "Utility Models: A useful alternative to patents for small businesses", European IPR Helpdesk Bulletin N°8, January - March 2013, available in the [library](#).

Assignment

In addition to that, the author of the contribution is normally required to assign all the rights related to its printing, publication and translation to the publisher.⁵ Therefore, once the contribution is published the author will lose most of the rights related to copyright⁶ and will need to ask the publisher's permission to publish their article in other journals and websites, or to make any adaptation to the original text, amongst others.

Licence

Licences give the author more flexibility as they retain copyright on their work and can therefore provide other publishers with the right to use the same contribution. Yet, in the case of an exclusive licence, publishers are given full rights so that the effects are similar to those of an assignment.

Summing up, scientific publication can be a valuable means of knowledge dissemination and it is faster than patenting. However, the consequent copyright protection does not ensure the safeguard of the technical information of the invention contained therein. On the other hand, publishing can be used to lock competitors out by disclosing the state of the art. This is the case of the defensive publications⁷. Accordingly, ROs and R&D SMEs should consider patenting if the research results are likely to have potential market impact.

1.4. Patenting

Patenting entails the grant of a set of rights to exclusively use a certain invention (i.e. product or process) for a certain period of time. In return for this monopoly, the IP system asks the patent owner to disclose the technical information describing the invention in order for others to access it and continue to innovate based on it.

The patent application, wherein the disclosure is contained, is normally published after eighteen months from the filing date, although applicants can ask for an earlier publication. In any case, once a patent has been filled, the claimed invention forms part of the state of the art and enters into the common knowledge. This can have several repercussions, depending on the **strategy** chosen:

⁵ The extent of such assignment depends of course on the contract arrangements.

⁶ The majority of the legislation in EU countries however gives consent to the author to retain its moral rights to claim authorship and integrity of their work. In some cases, it is also possible to waive these rights. For a deeper examination of the authorship issue, you can read the fact sheet developed by the European IPR Helpdesk on "Inventorship, Authorship and Ownership", available in the [library](#).

⁷ See below paragraph 2.

Commercial exploitation

If the research findings result in a ground-breaking innovation, ROs and SMEs should consider applying for a patent in order to commercially exploit the invention and have in return financial gain. Yet, incomes generated from patent exploitation should not be overestimated. It should be borne in mind that the value of a patent is not linked to its ownership but essentially to the market demand. Therefore, before filing any patent, it is advisable to ascertain how the new technology fits into the market.

Organisations wanting a monopoly on a new technology should however be careful not to publish any information about the invention before filing a patent application as this would undermine their capacity to obtain a patent⁸. Publications should therefore be delayed until after the patent filing. It is important to note that once a patent is filed, applicants receive a filing date to be claimed as priority date. This means that novelty will no longer be destroyed by publishing the technology features, so that publications are certainly possible after the patent filing.

The practice of combining patenting and publishing is more and more used in the ROs because it permits researchers to benefit from the two activities. In fact, they can take advantage of prospective patent profits and be recognised at academic level for the quality of their papers.

Knowledge dissemination

Where organisations are not interested in acquiring a monopoly, they can use the patenting process to publish their technology⁹ – without acquiring patent – to obstruct the later patenting ambitions of competitors. More precisely, ROs and SMEs can file a patent application and later abandon it to save costs. The application will be published and appear in patent databases forever. By disclosing the technology specifications, researchers can ensure that their findings are placed in the public domain and accessible to everyone without any restriction.

⁸ In the EU there two cases of “non-prejudicial disclosures” where novelty is not destroyed by public disclosure which are: *evident abuse* by a third party and *presentation in official international exhibitions*. A third type amounts to the *grace period* which is allowed in the USA, Canada, Japan and Australia but not in the EU, with the exception of Estonia and Romania. For the purpose of this fact sheet it is not possible to go into more details, but the first two exceptions can be found in article 55 of the European Patent Convention and article 11 of the Paris Convention for the Protection of Industrial Property. For a list of the officially recognised international exhibitions visit: Bureau International des Expositions at <http://www.bie-paris.org/site/en/>.

⁹ This is again what is referred to as defensive publication, which is the subject of paragraph 2.

In addition, this could be useful in attracting partners, customers and even investors who are using the patent database as part of a *commercial intelligence*¹⁰ search.

COMPARISON	PATENTING	PUBLISHING
APPLICABILITY	For commercially exploitable technology	For knowledge sharing purposes
RIGHTS GRANTED	Exclusive rights	Copyright
PROCEDURE	Yes	No
COSTS	High	Low to none
USE OF THE TECHNOLOGY	Only the patent owner, unless licensed	Everyone
TECHNOLOGY PROTECTION	Yes, on the patent claims	No, only the article text
FINANCIAL GAIN	Yes	Likely, but only on the paper publication
TECHNOLOGY DISCLOSURE	After 18 months	Immediately

2. Alternative tools

Several tools, alternative to publishing and patenting, are available for scientists and research companies either to maximise their IP value or to disseminate scientific and technical knowledge.

2.1. Defensive publication

As indicated above, when an invention is publicly disclosed it immediately enters into the state of the art. Consequently, no one else will be able to patent the same invention as the novelty requirement will impede it.

If ROs and SMEs chose not to protect their technology as, for instance, it does not meet the patentability criteria or is not worth the price of a patent, they can choose a different strategy against competitors and in favour of the public access to knowledge. This can be done through the so-called *defensive publication*. Such

¹⁰ Commercial intelligence is a search activity carried out by business actors to understand competitors and their capabilities within shared market places.

a tool is a cheaper alternative for scientists and research enterprises to exploit their IP and should not be used alone but included in a more comprehensive strategy.

This form of public disclosure is considered to have several advantages, among which:

- It is cheaper than patents
- It is searched by patent examiners
- It would reduce IP litigation risks by ensuring freedom to operate
- It is reliable in court proceedings
- It would ensure free dissemination of knowledge
- It would reward researchers
- It would ensure patent quality by reducing poor quality patent applications

Despite being less demanding than a patent application, to make a good defensive publication it is extremely important to take care of the:

Form

The innovation description must be as complete as possible in order to cover all the aspects and concepts related to it. Although extremely flexible, the drafting should reflect a patent claim as a partial description would allow competitors to patent some technology features. Accordingly, a field of practical application should also be included.

Relevance

Before going for defensive publication, it is important to determine whether some aspects related to the invention should be kept confidential and thus not be published or delayed.

Accessibility

For a prior art disclosure to take place, the description of the invention must be available to the public. To this end, several routes are at the disposal of ROs and SMEs. They can publish the technology details in an academic or technical journal¹¹, but the best place is in a patent application – which they later abandon – to be sure that patent examiners find their technology and cite it against their rivals' patent applications in the future.

¹¹ In such cases the scenario depicted in paragraph 1.3 also applies.

The application is in fact published after eighteen months from the filing date, although applicants can ask for an earlier publication, and it will appear in patent databases forever. This is also called “prophylactic disclosure” as it protects you from being subject to someone else's later patent and from being sued for prospective patent infringements.

Thanks to the advent of the Internet, other commercial forms of public disclosures are now available. Two of the most common are:

- [Defensive Publications](#)¹² – a *free* service component of Linux Defenders
- [Research Disclosure](#)¹³ – a *fee-based* specialised service

2.2. Open access model

Open Access (OA) refers to the practice of granting free Internet access to research articles. This model is deemed to be an efficient system for broad dissemination of and access to research data and publications, which can indeed accelerate scientific progress.

Although this model foresees that the knowledge dissemination is on free-of-cost basis, this does not mean that the publication process is entirely free of costs. The underlying philosophy, in fact, focuses on the shift of costs from the reader to the author/publisher, in order to readily access and disseminate publications.

There exist two main OA publishing models:

- Immediate or delayed OA that is provided through the author self-archiving. This is also named **Green OA** and it foresees that the authors deposit (self-archive) the final peer-reviewed manuscript in a repository (open archive) to be made available in open access mode, usually after an embargo period allowing them to recoup the publishing costs (e.g. via subscriptions or pay per download).
- Immediate open access that is provided by a publisher. For this other model named **Gold OA**, costs of publishing are covered usually by the publisher so that research articles are immediately available free of charge upon publication.

Public institutions are also very interested in the OA system. The European Commission is strongly committed to optimising the impact of publicly-funded

¹² Linux Defenders is a first-of-its-kind programme which combines free online IP publication with defensive patent tools to provide the Linux and open source community with an effective vehicle to reduce future patent concerns. Linux Defenders uses IP.com - www.ip.com - to provide a fast, effective, centralised outlet for publishing and searching technical disclosures. The ip.com database is searched and cited daily by patent examiners worldwide.

¹³ Research Disclosure is recognised globally by the courts as an independent source of evidence of publication, reducing the costs of expensive and difficult objection proceedings in overseas courts. Research Disclosure charges a one-off fee for each A4 or US Letter page you submit for publication. This fee (90 € per page) covers publication in both the paper Research Disclosure Journal and online database.

scientific research, both at European level (FP7, Horizon 2020) and at Member State level.¹⁴ Indeed, the European Commission acts as the coordinator between member states and within the European Research Area (ERA) in order for results of publicly-funded research to be disseminated more broadly and faster, to the benefit of researchers, innovative industry and citizens. OA can also boost the European research, and in particular offers SMEs access to the latest research for utilisation.

The central underlying reasons for an OA system are that:

- “The results of publicly-funded research should be publicly available;
- OA enables research findings to be shared with the wider public, helping to create a knowledge society across Europe composed of better-informed citizens;
- OA enhances knowledge transfer to sectors that can directly use that knowledge to produce better goods and services. Many constituencies outside the research community itself can make use of research results. These include small and medium-sized companies that do not have access to the research through company libraries, organisations of professional (legal practices, family doctor practices, etc.), the education sector and so forth”.¹⁵

2.3. Secrecy

Instead of publishing or patenting, scientists and research companies may also opt to keep their technology secret, mainly for those inventions that do not qualify for patent protection or have a very short lifecycle. Such a tool is very suitable for new production processes, the end products of which give no clues about the process innovation and thus cannot be easily reverse-engineered.

For some inventions, secrecy can also be used in parallel with patent applications, in the sense that specific technical details can be kept secret while those that could be easily worked out by competitors should form part of patent claims.

Keeping an invention secret can indeed constitute a cheaper, although less reliable, alternative to patenting. The invention protected by confidentiality can in fact be patented by competitors that have been developing similar technology or simply because they have been informed of the leaked secret. Another shortcoming is that, when a product is placed on the market, it could be reverse-engineered by a competitor and its secrets uncovered.

¹⁴ For further information on the European Commission strategy on OA you can visit <http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.topic&id=1294&lang=1>

¹⁵ EC and national experts workshop report, “Sharing knowledge: open access and preservation in Europe”, available at http://ec.europa.eu/research/science-society/document_library/pdf_06/oa-preservation-2011_en.pdf.

Therefore, it is important to set up proper and firm confidentiality management. Although the IP system does not provide any enforcement, in most of the EU countries misappropriation of confidential business information is protected under contract law and competition law, which offer the option to seek damages from anyone who discloses the secret in breach of a contract or otherwise unlawfully.¹⁶

ALTERNATIVE TOOLS	Pro	Cons
DEFENSIVE PUBLICATIONS	<ul style="list-style-type: none"> – Cheap – Locks competitors out – Free dissemination of knowledge – Freedom to operate 	<ul style="list-style-type: none"> – Discloses inventions to competitors – No exclusivity – Less market impact
OPEN ACCESS	<ul style="list-style-type: none"> – Freely accessible for users – Free dissemination of knowledge – No management required 	<ul style="list-style-type: none"> – Costs for authors – Less impact in terms of paper visibility
SECURITY	<ul style="list-style-type: none"> – Cheap – No invention disclosure – Damages relief 	<ul style="list-style-type: none"> – High level management – No protection against reverse-engineering – No IP infringement

Useful Resources

For further information on the topic please also see:

- Factsheet on “Inventorship, Authorship and Ownership”:
http://www.iprhelpdesk.eu/sites/default/files/newsdocuments/Inventorship_Authorship_Ownership_final_1.pdf
- Factsheet on “Confidential business information”:
http://www.iprhelpdesk.eu/sites/default/files/newsdocuments/How_to_manage_confidential_business_information.pdf
- Monitoring and analysis of technology transfer and intellectual property regimes and their use: Results of a study carried out on behalf of the European Commission (DG Research): <http://ec.europa.eu/invest-in->

¹⁶ For a deeper analysis of trade secrets you can read the European IPR Helpdesk factsheet on “Confidential business information”, available in the [library](#).

research/pdf/download_en/monitoring_and_analysis_of_technology_transfer_and_intellectual_property_regimes_and_their_use.pdf

- EC and national experts workshop report, "Sharing knowledge: open access and preservation in Europe": http://ec.europa.eu/research/science-society/document_library/pdf_06/oa-preservation-2011_en.pdf
- Adams S., and Henson-Apollonio V., "Defensive publishing: a strategy for maintaining intellectual property as public goods": <ftp://ftp.cgiar.org/isnar/publicat/bp-53.pdf>

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.

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