

# Innovative Activities: IP, Patenting Process and Know-how Transfer related to Internationalization of Research and Innovation

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# Overview

- **Introduction**
- **Intellectual property management (IPM)**
- **International knowledge transfer (IKT)**



# Intellectual property management (IPM)

- How the IP generated through collaborative research is to be managed and/or exploited is left to the two parties of the collaborative arrangement.
- IP management is one of **the most important issues**, if not the most important issue, for KT activities for the purposes of commercialization.
- Since cooperation on the international level is complex, international research generates an even more obvious demand for effective strategies for IP creation, ownership and management in research.
- Clear **provisions for IP are essential** for any agreement governing that research relationship.



# *What is meant by “intellectual property” and “intellectual property rights”?*

- Creation or results of creative efforts from the human intellect/mind/intelligence
- Such creations cannot be materially measured

→ A particular category property: **INTANGIBLE ASSETS**

- This intangible nature of **IP presents difficulties** when compared with traditional property like land or goods.
- Unlike traditional property, intellectual property is "**indivisible**", since an unlimited number of people can "consume" an intellectual good without it being depleted.
- Additionally, investments in intellectual goods suffer from **problems of appropriation**: a producer of information or literature can usually do very little to stop their first buyer from replicating it and selling it at a lower price.



# Intellectual property → A need for IP law

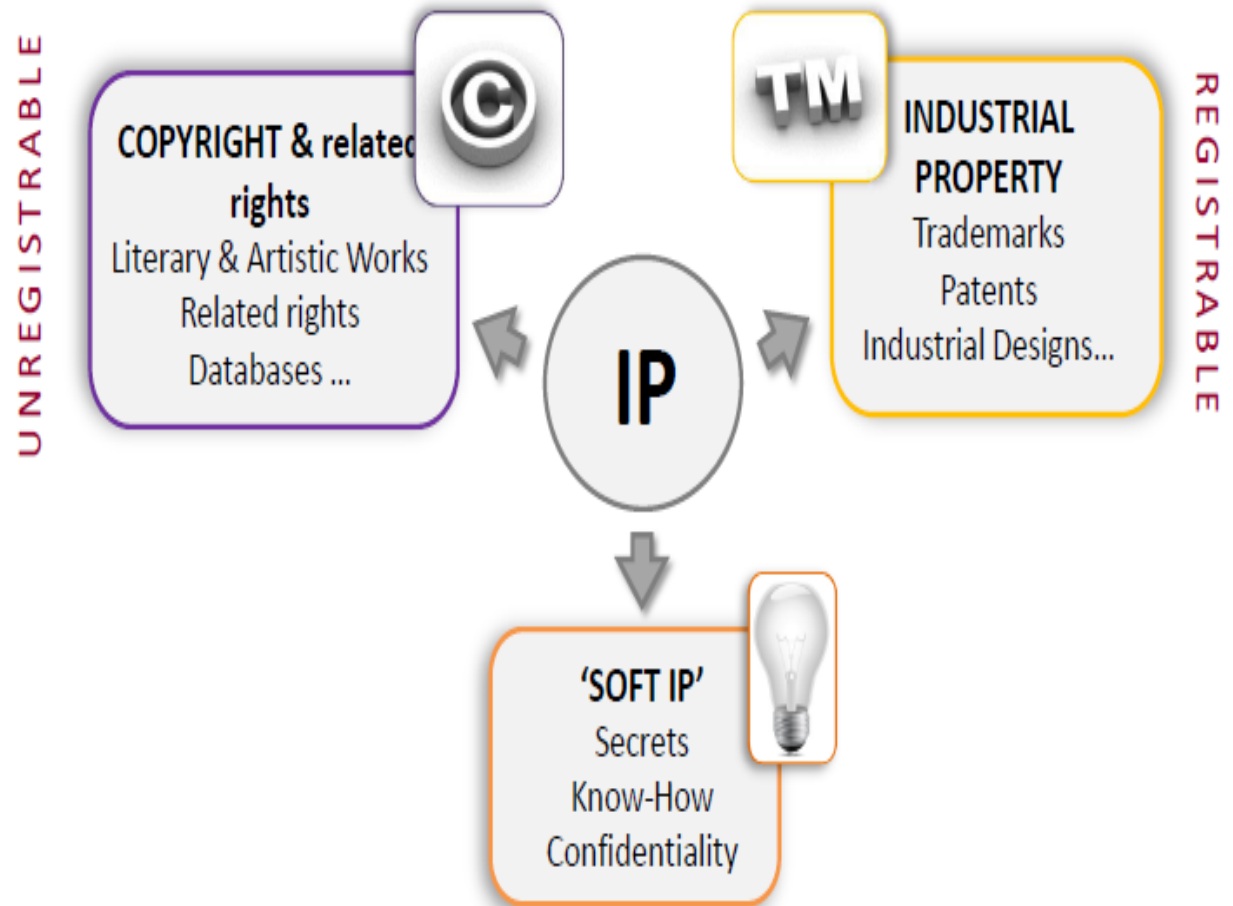
- The purpose of IP law is to encourage the creation of a wide variety of intellectual goods.
- The law gives people and businesses property rights to the information and intellectual goods they create, **usually for a limited period of time**.
- This gives economic incentive for their creation, because it allows people to profit from the information and intellectual goods they create
- These economic incentives are expected to stimulate innovation and contribute to the technological progress of countries, which depends on the extent of protection granted to innovators



# How to protect IP?

*IP protection tools:*

- *Utility Model*
- *Industrial Design*
- *Trademark*
- *Copyright*



# Industrial property

- Generally protects inventions
- Refers to industry and commerce
- can take the form of patents, industrial design, trademarks, etc.



# Patents

## *What is a patent?*

It is a title providing the **inventor** and/or the **applicant** with the **exclusive right** to prevent others from possessing, using, selling, manufacturing and importing the patented invention or offering to do any of these things within a definite geographical area.

## *What can be patented?*

Patents maybe granted for any invention concerned with the **functional** and **technical** aspects of **products** and **processes**. To qualify for patent protection the invention must fulfill the so-called **conditions of patentability**:

- *Novelty*
- *Inventive step (non-obviousness)*
- *Industrial Applicability (utility)*
- *Patentable subject matter*





# How to apply for a patent?

## NATIONAL PATENT

Patent applications need to be filed before your National Patent Office (NPO).

**Duration of protection:  
20 years, without  
renewal**

## EUROPEAN PATENT

One single application, in one official language may be filed:

- at your NPO, or
- at European Patent Office (EPO).

EPO grants patents having the effect of a national patent in designated countries (max. 38). You may decide to maintain it in force in some or all of them.

## INTERNATIONAL PATENT

By filing an international application, patent protection can be obtained in each designated states between 133 worldwide. PCT applications may be submitted:

- to your NPO,
- to the EPO, or
- to the WIPO.

# What is a Utility Model?

- It is a title of protection for certain inventions, such as inventions in the mechanical field.
- Utility models are usually sought for technically less complex inventions or for inventions that have a short commercial life and normally do not meet the patentability criteria.
- Less restrictive than patents: “novelty” requirement has to be met, but not necessary “Inventive step (non-obviousness)”
- Registration is often simpler, faster and cheaper than a patent.

Duration: 6/10 years



# Industrial design

## *What is an industrial design?*

It refers to the right granted in many countries to protect the **original, ornamental** and **non-functional features** of a product that result from design activity.

The right concerns merely the **appearance** (the 'design') of a product, not the product itself. It allows the owners to exclude others from making, importing, selling, hiring or offering articles for sale in which the design is embodied.

## *What can be protected?*

It may be granted for **visual features** of a product (i.e. shape, ornamentation, pattern, configuration, etc.). Designs that are dictated solely by the article's **function** are excluded from protection.

To qualify for protection the design must show:

- *Novelty*
- *Individual character*



# Trademark

## *What is a trademark (TM)?*

It is a **sign**, or a combination of signs, used in the trade to **identify** and **distinguish** the **goods or services** of one enterprise from those of another. A trademark owner is granted exclusive rights to:

- *use the mark in relation to the good or services with respect to which it is registered*
- *prevent others from using a substantially identical or deceptively similar mark in relation to the goods or services registered by the mark.*

## *What can be protected as trademark?*

**Words, letters, numerals, pictures, shapes and colours**, as well as any combination of the above.

It is now allowed for the registration of less traditional forms of trademark, such as **three-dimensional signs** (like the Coca-Cola bottle), **audible signs** (sounds, Nokia jingle), or **olfactory signs** (smells, such as perfumes).

Trademarks normally perform **four main functions**:

- ***Distinguishing the products or services*** of one enterprise from those of other enterprises
- ***Referring to a particular enterprise*** which offers the products or services on the market
- ***Referring to a particular quality of the product or service*** for which it is used
- ***Promoting the marketing and sale of products***, and the marketing and rendering of services.



## Which are the requirements to seek registration?

In order for a sign to be eligible for a trademark protection it must:

- ***Be distinctive***
- ***Not be deceptive***
- ***Not be descriptive***
- ***Not belong to the exclusions*** provided by the law
- ***Be in conformity with public order and morality.***

**Duration of protection:  
10 years, renewable  
indefinitely**



## *How to register a trademark?*

### **NATIONAL TM**

Applications must be filed before your National TM Office

Registrations can be cancelled if the holder is not using a mark.

### **EUROPEAN TM**

One single application, in one official language may be filed at the Office for the Harmonisation of the Internal Market (OHIM) in Alicante – Spain. A CTM is legally enforceable and enjoy uniform protection throughout the territory of the European Union

### **INTERNATIONAL TM**

By filing an international application, TM protection can be obtained in each states member of the Madrid system, designated by the applicant.

Applications may be submitted:

- to your National trademark Office
- to the OHIM
- to the WIPO.





# Copyright

- Copyright may apply to a wide range of creative, intellectual, or artistic forms, or "works" like books, research articles, movies, music, architecture...
- Does not protect the ideas themselves but only the form of expression of ideas represented in a physical embodiment.
- The creativity protected is the originality in the choice in the arrangement of words, musical notes, colors and shapes.





- There is no formal registration process required in order to obtain protection
- Copyright protection arises automatically on creation of the work, provided it is original.
- The term of copyright depends on the type of work that is protected, when it was made and whether it was published.

Generally,  
protection lasts for  
70 years after the  
death of the creator.



Thanks to the copyright, owners can **prohibit** or **authorise** that their works be:

- *copied or reproduced in various forms,*
- *distributed to the public in copy format*
- *performed in public*
- *broadcasted and used on-line*
- *translated into other languages*
- *adapted, such as novel into screenplay*

Mostly there are two types of **limitations** to copyright:

- **Free use**
- **Non-voluntary licences**



# Soft intellectual property

## Soft IP

### No specific definition

“Soft IP” are intellectual assets which are not included in industrial property or in literary and artistic works, but have an important value for organisations.

### Soft IP components

Know-how, trade secret, confidential information

### Protection of Soft IP

- **Are not protected** by registration and specific IP legislation
- Fall under the category of **intangible rights** – associated with other IPR
- **Free of charge**
- Do not involve long or complex registration-processes , **BUT** require internal management



# To protect:

- Inventions → Patents / Utility model
- Design → Industrial design
- Books, Software, Art, Music, Movies, ... → Copyrights
- Names of business, brand names, ... → Trademarks
- Confidential and valuable commercial & industrial information → Trade secrets



# International Knowledge transfer (IKT)



- **Knowledge** can take various forms. It can appear in form of a **patent-protected invention** but it may also be published in an academic article and protected by **copyright**.
- As a patent protects an intellectual asset, it may be transferred to another party by way of **licensing** or **assignment against remuneration**.
- For an academic publication, knowledge is transferred either within the framework of proprietary publications (and therefore access may be constrained by subscriptions to **copyright material**) or through open access publishing. In both cases, the rewards to the author and institution are more likely to be reputational (scientific esteem) rather than monetary.
- Knowledge may also be **exchanged** within frameworks **outside formal intellectual property rights**, such as **confidential information and know-how**. In such cases, agreements with employees, scientific and technical staff, are essential to protecting the confidential nature of that knowledge
- In knowledge transfer partnerships, such **knowledge might be part of the collaborative resources shared between partners**, and **so agreements must be in place to regulate the sharing of that knowledge**, as it similarly comprises a valuable asset which can become the subject matter of contracts on technical services.



- Thus, in terms of local and international Transfer of knowledge paths, **traditional licensing of intellectual property is an important but by far not the only form of KT.**
- We find also **cooperative research** (including exchange of personnel), contract research as forms of KT.
- In all of these cases, **obstacles to cross-border KT** include the legal and administrative infrastructure in place in partner countries for the management and enforcement of IP.
- There are also many other obstacles which are not directly related to the protection of intellectual property yet can become significant disincentives to engagement in KT. These include taxation or import/export regulations, local bureaucracy and administrative obstacles, discriminatory public procurement practices, burdensome alien registration or visa procedures which complicate the exchange of scientific personnel and, quite importantly, different perceptions and attitudes which interfere with effective collaboration between scientific personnel.



# Forms of IKT

International knowledge transfer (IKT) occurs in various identifiable and specific forms. As such, the form of IKT activities might change according to:

- the forms of cooperation;
- the transfer partners;
- the levels on which knowledge transfer occurs;
- the types of funding and infrastructure supporting knowledge transfer practices.



# *Forms of Cooperation*

IKT is provided within different cooperation forms, like:

- cooperative research
- contract research
- licensing





# *The Transfer Partners*

- Partners in international knowledge transfer arrangements usually include academic, industry and at times also different government partners.
- Such diversity in partners brings with it also greater complications and varying business cultures that must be reconciled for effective transfer agreements and collaboration activity.



- ***The Levels of Knowledge Transfer***

Substantial differences according to the levels of transfer: Knowledge transfer proceeds on the intra-EU level in interaction between member states as well as on an extra-EU level through partnerships between European PROs and partners from third countries.

- ***Funding***

Cooperative research is usually financed by external funding. This may be public, private, or mixed, via basic funding or via project funding. Despite the very few differences in the organizational and legal forms of IKT arrangements between national and international arrangements the specific handling of the arrangements will likely differ.



# How to transfer knowledge?

## IKT & Cooperation

- IKT via horizontal collaborative arrangements include:
  - cooperative research
  - alliances/joint use of research infrastructure
  - virtual institutes and
  - researcher mobility
- The significance of horizontal cooperation is the more balanced arrangement for all partners on the same level. Knowledge is created commonly through contributions of all partners, even if the individual parts may differ significantly.
- Such knowledge transfer on an international level is characterized and differentiated by the broader range of knowledge dissemination that is possible.



# Example

- A significant aspect of IKT is knowledge exchange through mobility of participating researchers. A notable example is that of the Chinese automobile industry, where IKT and technical capacity is enhanced through international training. This is where Chinese nationals are educated abroad, returning to China in a professional capacity as trainers exclusively for Chinese firms to advance and foster a sustainable Chinese automobile tradition and industry.
- This phenomenon has become known as the return of the “turtles.”
- This strategic practice of educating, training and socialising Chinese students abroad is accompanied by a distinctive tendency to return to China and transfer those new skills, knowledge and research capacity to China.



# IKT & Contract research

- Contract research is a classical vertical KT instrument to transfer specified technical solutions or other forms of knowledge against remuneration.
- The largest European organization devoted to contract research with industry is the German Fraunhofer Gesellschaft (FhG)
- The international practices of contract research show that the contractor's specialization is the first and most important reason that motivates contacts and orders.



# Licensing

- Licensing is a common form of arrangement for KT, utilized to transfer available knowledge protected as patents, copyright or other forms of IP, or to protect and transfer confidential information and know-how.



# Obstacles to effective international

- Several identified obstacles to effective IKT exist. The crucial ones may be summarized:
  - Legal differences → different approaches in patent law, national tax and import/export regulations often hinder IKT activities in some countries.
  - Funding mechanisms and public tendering; → No financing, no capacities, no research.
  - Administrative burdens; → *"To receive funding for a year, you have to work for two months. Unfortunately the chance of funding is usually below 20 %. If granted, you keep fulfilling requirements rather than working in actual research"*
  - Globalization, including socio-cultural and linguistic differences.



# Preparation phase

- In IKT, professional **IP management in the preparation phase is essential.**
- In particular, in addition to agreeing ownership of any IPR created by the project, agreements should provide for the protection of confidential information and know-how.
- Further, budgets should include financial reserves for enforcement of contractual obligations (including those of confidentiality) as well as enforcement of IP based on realistic assessments of the risks.
- Costs of litigation and enforcement will also vary between jurisdictions and can become particularly complicated and expensive if litigating abroad or in more than one country.





# Rights to the results

- In all forms of international research cooperation, the parties must pay special attention to the local IP laws and the consequences for the rights to exploit the results of the research.
- Disputes between parties to a research cooperation agreement usually concern IP ownership.
- In addition to any IP created by the cooperation, it may be the case that some of the research and its results will be confidential information or know-how that is not protected by patents or similar rights. In such cases, obligations of confidentiality may be provided by contract.
- This characterization of the assets of the cooperation (that is, both IP as well as confidential information) will be relevant to the calculation of the actual value of investment
- Consequently, successful parties in IKT will be those aware of the legal and commercial background of IP regulations which also prepare, plan and schedule appropriate strategies for contract negotiations.
- An important part of this strategic management of IKT is that IP commitments in this respect should be identified and fixed in the starting phase.



# Thank you!

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