Intellectual Property for Business Series | Number: 3

INVENTING THE FUTURE

An Introduction to Patents for Small and Medium-sized Enterprises

WORLD INTELLECTUAL PROPERTY ORGANIZATION

Publications in the "Intellectual Property for Business" series:

1. Making a Mark: An Introduction to Trademarks for Small and Medium-sized Enterprises. WIPO publication No. 900.

2. Looking Good: An Introduction to Industrial Designs for Small and Medium-sized Enterprises. WIPO publication No. 498.

3. Inventing the Future: An Introduction to Patents for Small and Medium-sized Enterprises. WIPO publication No. 917.

4. Creative Expression: An Introduction to Copyright for Small and Medium-sized Enterprises. WIPO publication No. 918. (Forthcoming)

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Preface

This is the third in the series of guides on "Intellectual Property for Business". It focuses on patents, a key tool to enhance a company's ability to draw maximum benefit from new and innovative ideas and technological capabilities. The management of knowledge resources, especially new ideas and concepts, is essential to the ability of any enterprise, to change, adapt, and seize new opportunities as it competes in a fast-changing business environment.

In the knowledge economy of today, the patent strategy of an innovative enterprise should be a key factor in its business strategy. This guide explains in a simple and practical way the business benefits of the patent system for all types of enterprises. While readers are advised to consult a patent expert when seeking to protect, exploit or enforce a patent, the guide provides practical information intended to help readers to understand the basics and to be able to ask the right questions while consulting an expert on patent matters.

Small and Medium-sized Enterprises (SMEs) are encouraged to use the guide with a view to integrating their technology and patent strategies into their overall business, marketing and export strategies. WIPO welcomes feedback to further refine the guide with a view to ensuring that it adequately meets the emerging needs of SMEs worldwide.

Nationally customized versions of the guide could be developed in cooperation with national institutions and local partners, which are welcome to contact WIPO to obtain a copy of the guidelines on customization.

Kamil Idris,
Director General, WIPO

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1. Patents

What is a patent?

A patent is an exclusive right granted by the State for an **invention** that is **new, involves an inventive step** and is **capable of industrial application.**

It gives its owner the **exclusive right** to prevent or stop others from making, using, offering for sale, selling or importing a product or a process, based on the patented invention, without the owner's prior permission. A patent is a **powerful business tool** for companies to gain exclusivity over a new product or process, develop a strong market position and earn additional revenues through licensing. A complex product (such as a camera, mobile phone, or a car) may incorporate a number of inventions that are covered by several patents, which may be owned by different patent holders.

A patent is granted by the **national patent office** of a country or a **regional patent office** for a group of countries. It is valid for a limited period of time, generally for **20 years** from the date of filing of the patent application, provided the required maintenance fees are paid on time. A patent is a **territorial right,** limited to the geographical boundary of the relevant country or region.

In return for the exclusive right provided by a patent, the applicant is required to **disclose the invention** to the public by providing a detailed, accurate and complete written description of the invention in the patent application. The granted patent and, in many countries, the patent application is made public via publication in an official journal or gazette.

An opener for sparkling beverages, conceived by Argentinian inventors Hugo Olivera, Roberto Cardón and Eduardo Fernandez, has been patented in over 20 countries. The product is commercialized worldwide by a company established by the inventors under the trademark Descorjet.

Korean motorcycle helmet manufacturer HJC holds 42 patents worldwide for its innovative helmets and has enjoyed enormous success in export markets where it sells about 95% of its products. The company reinvests 10% of its sales in R&D and attaches great importance to innovative design as a key factor of success in the helmet industry.

What is an invention?

In patent jargon, an **invention** is generally defined as a **new and inventive solution to a technical problem**. It may relate to the creation of an entirely new device, product, method or process, or may simply be an **incremental improvement** to a known product or process. Merely finding something that already exists in nature generally does not qualify as an invention; an adequate amount of human ingenuity, creativity and inventiveness must be involved.

While most inventions nowadays are the result of considerable efforts and long-term investments in Research and Development (R&D), many simple and inexpensive technical improvements, of great market value, have yielded significant income and profits to their inventors or companies.

The power of innovation

Appreciating the distinction between "invention" and "innovation" is important. **Invention** refers to a technical solution to a technical problem. It may be an innovative idea or may be in the form of a working model or prototype. **Innovation** refers to the translation of the invention into a marketable product or process. Some of the main reasons why companies innovate include:

- To improve manufacturing processes in order to save costs and improve productivity;
- To introduce new products that meet customer needs;
- To remain ahead of the competition and/or expand market share;
- To ensure that technology is developed to meet actual and emerging needs of the business and its clients;
- To prevent technological dependence on other companies' technology.

In today's economy, managing innovation within a company requires a good knowledge of the patent system in order to ensure that the company draws maximum benefit from its own innovative and creative capacity, establishes profitable partnerships with other patent holders and avoids making unauthorized use of technology owned by others. Unlike the past, many innovations nowadays are complex and are based on a number of patented inventions, which may be owned by different patent owners.

Why should you consider patenting your inventions?

Short product cycles and increasing competition put enormous pressure on enterprises to become innovative and/or obtain access to other companies' innovations, so as to become and remain competitive in domestic and export markets. The exclusive rights provided by a patent may be crucial for innovative companies to prosper in a challenging, risky and dynamic business climate. Key reasons for patenting inventions include:

- **Strong market position and competitive advantage.** A patent gives its owner the exclusive right to prevent or stop others from commercially using the patented invention, thereby reducing uncertainty, risk and competition from free riders and imitators. If your company owns or obtains the permission to exploit a valuable patented invention it may be able to create a market entry barrier for competitors in respect of the same inventions. This will help it to become a pre-eminent player in the relevant market(s).
- **Higher profit or returns on investment.** If your company has invested a significant amount of time and money in R&D, patent protection of the resulting inventions would help in recovering costs and obtaining higher returns on investments.
- **Additional income from licensing or assigning the patent.** As a patent owner you may license your rights over the invention to others in exchange for lump-sum payments and/or royalties, in order to generate additional income for the company. Selling (or assigning) a patent implies transfer of ownership whereas licensing implies only permission to use the licensed invention under specified conditions.
- **Access to technology through cross-licensing.** If your company is interested in technology owned by others you may use your company's own patents to negotiate cross-licensing agreements, by which your company and the other party agree to authorize each other to use one or more of your respective patents under conditions specified in the agreement.
- **Access to new markets.** Licensing of patents (or even pending patent applications) to others may provide access to new markets, which are otherwise inaccessible. In order to do so, the invention must also be protected in the relevant foreign market(s).

- **Diminished risks of infringement.** By obtaining patent protection you will be able to prevent others from patenting the same invention and also reduce the chances of infringing the rights of others when commercializing your products. While a patent by itself does not provide the "freedom to use", it does prevent others from patenting the same or similar inventions and provides a reasonable indication that the invention that you have patented is new and significantly different from the "prior art." (More on "prior art" on page 12).
- **Enhanced ability to obtain grants and/or raise funds at a reasonable rate of interest.** Ownership of patents (or license to use patents owned by others) may enhance your ability to raise capital to take a product to market. In some sectors (e.g., biotechnology), it is often necessary to have a strong patent portfolio to attract venture capitalists.
- **A powerful tool to take action against imitators and free riders**. In order to effectively enforce the exclusivity provided by a patent, it may occasionally be necessary to litigate, or bring your patents to the attention of those who are violating your patent rights. Owning a patent considerably improves your ability to take successful legal action against copiers and imitators of the protected invention.
- **Positive image for your enterprise.** Business partners, investors, shareholders and customers may perceive patent portfolios as a demonstration of the high level of expertise, specialization and technological capacity of your company. This may prove useful for raising funds, finding business partners and raising your company's profile and market value. Some companies mention or list their patents in advertisements to project an innovative image to the public.

Patent No. US2002137433.
An innovative award-winning drill bit used to make holes on glass and ceramics was patented by Peruvian inventor Jose Vidal Martina enabling him to commercialize the product directly as well as earn royalties from the licensing of the invention.

What other legal instruments are available for protecting your products?

This guide focuses on **patents**. However, depending on the product in question, there may be other intellectual property rights that are suitable for protecting various features of an innovative product; these include:

- **Utility models** (also known as short-term patents, petty patents or innovation patents). In many countries, some types of incremental inventions or small adaptations to existing products are protectable as utility models (see box on page 10).
- **Trade secrets.** Confidential business information may benefit from trade secret protection as long as:
  - it is not generally known to others dealing with that type of information;
  - it has commercial value because it is secret; and
  - reasonable steps have been taken by its owner to keep it secret (for example, restricting access to such information on a "need to know" basis, and entering into confidentiality or non-disclosure agreements) (see box on page 9).
- **Industrial designs.** Exclusivity over the ornamental or aesthetic features of a product may be obtained through the protection of industrial designs, in some countries referred to as "design patents."
- **Trademarks.** Trademark protection provides exclusivity over distinctive signs used to distinguish the products of one company from those of others.
- **Copyright and related rights.** Original literary and artistic works may be protected by copyright and related rights. Copyright protection applies to a wide range of works, including computer programs (see box on page 11).
- **New plant varieties.** In many countries, a breeder of a new plant variety, which fulfils the requirements of novelty, distinctness, uniformity and stability, and is designated with a suitable denomination may obtain protection in the form of "plant breeder's rights." For more information on the protection of new plant varieties, see: *www.upov.int*.
- **Layout-design (or topography) of integrated circuits.** You may be able to obtain protection for an original layout design (or topography) of an integrated circuit used in microchips and semiconductor chips. Such protection may extend also to the final product incorporating the layout design.

If an invention is patentable, is it always wise to apply for patent protection?

Not always. If an invention is patentable, it does not necessarily follow that it will result in a commercially viable technology or product. Therefore, a careful weighing of pros and cons and an analysis of possible alternatives is essential before filing a patent application. A patent may be expensive and difficult to obtain, maintain and enforce. To file or not to file a patent application is strictly a business decision. It should be based primarily on the probability of obtaining commercially useful protection for the invention that is likely to provide significant benefits from its eventual business use.

Factors to be taken into account in deciding whether or not to file a patent application include:

- Is there a market for the invention?
- What are the alternatives to your invention, and how do they compare with your invention?
- Is the invention useful for improving an existing product or developing a new product? If so, does it fit in with your company's business strategy?
- Are there potential licensees or investors who will be willing to help to take the invention to market?
- How valuable will the invention be to your business and to competitors?
- Is it easy to "reverse engineer" your invention from your product or "design around" it?
- How likely are others, especially competitors, to invent and patent what you have invented?
- Do the expected profits from an exclusive position in the market justify the costs of patenting? (see page 20 on patenting costs)
- What aspects of the invention can be protected by one or more patents, how broad can this coverage be and will this provide commercially useful protection?
- Will it be easy to identify violation of the patent rights and are you ready to invest time and financial resources for enforcing your patent(s)?

In 1994, Australian start-up company ITL Corporation filed a utility model application over its first product, a vessel with a unique design into which blood collection needles are retracted upon withdrawal from a blood donor. The utility model was later converted to a standard patent. The product, commercialized under the trademark Donorcare®, became a great success in domestic and foreign markets and obtained prestigious design awards.

Patents versus secrecy

If your invention is likely to fulfill the patentability requirements (see page 10), your company will face a choice: to keep the invention as a trade secret, to patent it or to ensure that no one else is able to patent it by disclosing it (commonly known as **defensive publication**) thereby assuring its place in the "public domain".

Depending on the legal system of your country, the protection of trade secrets may be available under legislation against unfair competition, by specific provisions of one or more laws, by case law on the protection of confidential information, by contractual provisions in agreements with employees, consultants, customers, and business partners, or a combination of the above.

Some advantages of trade secret protection include:

- Trade secrets involve no registration costs;
- Trade secret protection does not require disclosure or registration with a government office and the invention is not published;
- Trade secret protection is not limited in time;
- Trade secrets have immediate effect.

Disadvantages of protecting inventions as trade secrets:

- If the secret is embodied in an innovative product, others may be able to "reverse engineer" it, discover the secret and, thereafter, be entitled to use it;
- Trade secret protection is effective only against improper acquisition, use or disclosure of the confidential information;
- If a secret is publicly disclosed, then anyone who obtains access will be free to use it;
- A trade secret is difficult to enforce, as the level of protection is considerably weaker than for patents; and
- A trade secret may be patented by others who may independently develop the same invention by legitimate means.

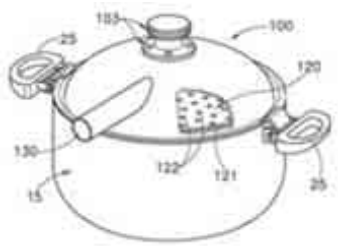
While patents and trade secrets may be perceived as alternative means of protecting inventions, they are often complementary to each other. This is because patent applicants generally keep inventions secret until the patent application is published by the patent office. Moreover, a lot of valuable know-how on how to exploit a patented invention successfully is often kept as a trade secret.

What can be patented?

An invention must meet several requirements to be eligible for patent protection. These include, in particular, that the claimed invention:

- Consists of **patentable subject matter** (page 11);
- Is **new** (novelty requirement) (page 12);
- **Involves an inventive step** (non-obviousness requirement) (page 12);
- Is **capable of industrial application** (utility requirement) (page 13); and
- Is **disclosed** in a clear and complete manner in the patent application (disclosure requirement) (page 13).

The best way of understanding these requirements is to study what has been patented by others in the technical field of your interest. For this, you may consult patent databases (more on patent databases on pages 16 and 17).



International application No. PCT/IT2003/000428. Utensil for preparing food or beverages in general by means of heated liquids.

Utility models

Some of the characteristics of utility models are:

- The conditions for granting utility models are less stringent, as the "inventive step" requirement may be lower or absent altogether;
- Procedures for granting utility models are generally faster and simpler than for patents;
- Acquisition and maintenance fees are generally lower than those applicable to patents;
- The maximum possible duration of utility models is usually shorter than it is for patents;
- Utility models may, in some countries, be limited to certain fields of technology and may only be available for products (not for processes); and
- Usually, a utility model application or a granted utility model may be converted into a regular patent application.

What is patentable subject matter?

In most national or regional patent laws, patentable subject matter is defined negatively, i.e., by providing a list of what cannot be patented. While there are considerable differences between countries, the following are examples of some of the areas that may be excluded from patentability:

- Discoveries and scientific theories;
- Aesthetic creations;
- Schemes, rules and methods for performing mental acts;
- Mere discoveries of substances as they naturally occur in the world;
- Inventions that may affect public order, good morals or public health;
- Diagnostic, therapeutic and surgical methods of treatment for humans or animals;
- Plants and animals other than microorganisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes; and
- Computer programs.

Protecting computer software

In some countries, the mathematical algorithms, which are the basis of improved functionality of a computer software, may be protected by **patents**, while in others, they are explicitly excluded as **unpatentable subject matter**. In some of the latter countries, software-related inventions may still be patentable, provided the software is considered to make a **technical contribution** to the state of the art. For more information on the patentability of computer software in your country, contact your national or regional patent office (see Annex I for a list of websites of patent offices).

In most countries, the object and source code of computer programs can be protected by **copyright**. Copyright protection is not contingent upon registration but optional registration is possible and desirable in some countries. Copyright protection is more limited in scope than patent protection, as it only covers the expression of an idea and not the idea itself. Many companies protect the object code of computer programs by copyright, while the source code is kept as a **trade secret**.

How is an invention judged to be new or novel?

An invention is new or novel if it does not form part of the **prior art**. In general, prior art refers to all the relevant technical knowledge available to the public anywhere in the world prior to the first filing date of the relevant patent application. It includes, *inter alia*, patents, patent applications and non-patent literature of all kinds.

The definition of prior art differs considerably from country to country. In many countries, any information disclosed to the public anywhere in the world in written form, by oral communication, by display or through public use constitutes prior art. Thus, in principle, the publication of the invention in a scientific journal, its presentation in a conference, its use in commerce or its display in a company's catalogue would all constitute acts that could destroy the novelty of the invention and render it unpatentable. It is important to prevent accidental disclosure of inventions prior to filing the patent application. Assistance of a competent patent agent is often crucial for a clear determination of what is included in the prior art. Prior art often includes "secret prior art" such as pending unpublished patent applications, provided they are published at a later stage.

When is an invention considered to "involve an inventive step"?

An invention is considered to involve an inventive step (or to be **non-obvious**) when, taking into account the prior art, the invention would not have been obvious to a person skilled in the particular field of technology. The non-obviousness requirement is meant to ensure that patents are only granted in respect of truly creative and inventive achievements, and not to developments that a person with ordinary skill in the field could easily deduce from what already exists.

Some examples of what may not qualify as inventive, as established by past court decisions in some countries, are: mere change of size; making a product portable; the reversal of parts; the change of materials; or the mere substitution by an equivalent part or function.

The patent over the antibiotic azythromycin of Croatian company Pliva has earned the company millions of dollars over the last decade. The patent was the basis for a successful licensing deal with a large foreign pharmaceutical company.

What is meant by "capable of industrial application"?

To be patentable, an invention must be capable of being used for an industrial or business purpose. An invention cannot be a mere theoretical phenomenon; it must be useful and provide some practical benefit. The term "industrial" is meant here in the broadest sense as anything distinct from purely intellectual or aesthetic activity, and includes, for example, agriculture. In some countries, instead of industrial applicability, the criterion is **utility**. The utility requirement has become particularly important for patents on genetic sequences for which a utility may not yet be known at the time of filing the application.

What is the disclosure requirement?

According to the national legislation of most countries, a **patent application must disclose the invention** in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the specific technical field. In some countries, patent law requires that the inventor discloses the "**best mode**" for practicing the invention. For patents involving microorganisms, many countries require the microorganism to be deposited at a **recognized depositary institution**.

Patents in the life sciences

In recent years, there has a been a significant rise in the number of patents in the life sciences (particularly in biotechnology) and significant differences between countries on what can be patented have emerged. Almost all countries allow for the patenting of inventions involving **microorganisms** and require the deposit of a sample of the organism at a recognized depositary institution when the mircoorganism is not yet publicly available and cannot be properly described otherwise. Many countries exclude **plants and animals** from patentability but allow for the patenting of biological materials that have been purified and isolated from their natural environment or produced by means of a technical process. National legislation may also list some specific types of inventions that may not be patented, such as processes for cloning human beings or processes for modifying the germ line genetic identity of human beings.

Depending on the country, **new varieties of plants** are protected either by the patent system, by a specific system for the protection of new varieties of plants (see *www.upov.int* for further information) or by a combination of the two.

What rights are granted by patents?

A patent grants its owner the **right to exclude** others from commercially using the invention. This includes the right to prevent or stop others from making, using, offering for sale, selling or importing a product or process, based on the patented invention, without the owner's permission.

It is important to note that a patent does not grant the owner the "freedom to use" or the right to exploit the technology covered by the patent but only the right to exclude others. While this may seem a subtle distinction, it is essential in understanding the patent system and how multiple patents interact. In fact, patents owned by others may overlap, encompass or complement your own patent. You may, therefore, need to obtain a license to use other people's inventions in order to commercialize your own patented invention and vice versa.

Also, before certain inventions (such as pharmacetucial drugs) can be commercialized other clearances may be required (e.g., marketing approval from the relevant regulatory body).

Who is an inventor and who owns the rights over a patent?

The person who conceived the invention is the **inventor**, whereas the person (or company) that files the patent application is the **applicant, holder or owner** of the patent. While in some cases the inventor may also be the applicant, the two are often different entities; the applicant is often the company or research institution that employs the inventor. The following specific circumstances merit further analysis:

- **Employee inventions.** In many countries, inventions developed in the course of employment are automatically assigned to the employer. In some countries, this is only so if it is so stated in the employment contract. In some cases (e.g., if there is no employment agreement) the inventor may retain the right to exploit the invention, but the employer is given a non-exclusive right to use the invention for its internal purposes (called "shop rights"). It is important to find out about the specific legislation in your own country and to ensure that employment contracts deal with issues of ownership over employee inventions to avoid future disputes.

- **Independent contractors.** In most countries, an independent contractor hired by a company to develop a new product or process owns all rights to the invention, unless specifically stated otherwise. This means that, unless the contractor has a written agreement with the company assigning the invention to that company, in general, the company will have no ownership rights in what is developed, even if it paid for the development.
- **Joint inventors.** When more than one person contributes in significant ways to the conception and realization of an invention, they must be treated as joint inventors and mentioned as such in the patent application. If the joint inventors are also the applicants, the patent will be granted to them jointly.
- **Joint owners.** Different countries and institutions have different rules concerning the exploitation or enforcement of patents that are owned by more than one entity or person. In some cases, no single co-owner may license a patent or sue third parties for infringement without the consent of all other co-owners.

Summary checklist

- **Should you patent your invention?** Consider advantages of patent protection, look into alternatives (secrecy, utility models, etc) and make a cost/benefit analysis. Read more about patents in the following sections to make sure you take an informed decision.
- **Is your invention patentable?** Consider the patentability requirements, find out details of what is patentable in your own country and conduct a prior art search (see following section).
- **Make sure there is clarity on issues relating to rights over the invention**, between the company, its employees, and any other business partner who may have participated either financially or technically in developing the invention.

2. How to get a patent

Where should you start?

Generally the first step is to perform a **prior art search**. With over 40 million patents granted worldwide, and millions of printed publications, which are potential prior art against your patent application, there is a serious risk that some reference, or combination of references, may render your invention non-novel or obvious, and, therefore, unpatentable.

A prior art patentability search can prevent you from wasting money on a patent application if the search uncovers prior art references that are likely to preclude the patenting of your invention. A prior art search should extend to all relevant non patent literature, including technical and scientific journals, textbooks, conference proceedings, theses, websites, company brochures, trade publications and newspaper articles.

Patent information is a **unique source of classified technical information**, which companies may find of great value for their strategic business planning. Most significant inventions are disclosed to the public for the first time only when the patent or patent application is published. Thus, patents and published patent applications provide means of learning about current research and innovations often long before the relevant innovative product appears on the market. Patent searches should be part of the essential inputs to any company's R&D effort.

The importance of searching patent databases

Aside from checking whether an invention is patentable, timely and effective searching of patent databases may provide very useful information and intelligence on:

- The R&D activities of current and future competitors;
- Current trends in a given field of technology;
- Technologies for licensing;
- Potential suppliers, business partners, or sources of researchers;
- Possible market niches at home and abroad;
- Relevant patents of others to ensure that your products do not infringe them ("freedom to operate");
- Relevant patents that have expired and technology that has come into the public domain; and
- Possible new developments based on existing technologies.

How and where can you conduct a prior art search?

Patents and patent applications published by many patent offices are accessible on-line, thus making it easier to conduct prior art searches. A list of IP offices that have made their **patent databases available online**, free-of-charge, may be found at: *www.wipo.int/ipdl/en/resources/links.jsp*. In addition, most national patent offices offer patent search services for a fee.

While access to patent information is considerably simpler thanks to the Internet, it is not easy to perform a high-quality patent search. Patent jargon is often complex and obscure and professional searching requires considerable knowledge and expertise. While preliminary searches may be performed through free on-line patent databases, most companies requiring patent information for making key business decisions (e.g., whether to apply for a patent or not) will generally rely on the services of patent professionals and/or use more sophisticated commercial databases.

A prior art search can be done based on keywords, patent classification or other search criteria. The prior art uncovered depends on the search strategy employed, the classification system used, the technical expertise of the person who conducts the search, and the patent database being used.

The International Patent Classification

The International Patent Classification (IPC) is a hierarchical classification system used to classify and search patent documents. It also serves as an instrument for orderly arrangement of patent documents, a basis for selective dissemination of information and a basis for investigating the state of the art in given fields of technology. The seventh edition of the IPC consists of **8 sections**, which are divided into **120 classes, 628 subclasses** and approximately **69,000 groups**. The 8 sections are:

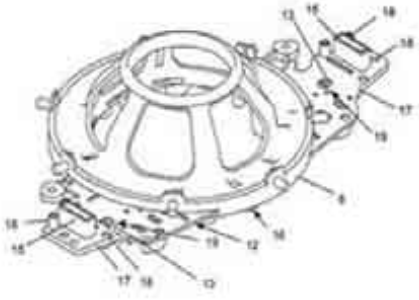
A. Human Necessities;
B. Performing Operations; Transporting;
C. Chemistry; Metallurgy;
D. Textiles; Paper;
E. Fixed Constructions;
F. Mechanical Engineering; Lighting; Heating; Weapons; Blasting;
G. Physics;
H. Electricity.

Currently, over 100 countries use the IPC to classify their patents: *www.wipo.int/classifications/en/ipc/index.html*

How to apply for patent protection?

After a prior art search has been performed and the decision to seek patent protection has been made, a **patent application** has to be prepared and submitted to the relevant **national or regional patent office**. The application will include a full description of the invention, the patent claims that determine the scope of the patent applied for, drawings and an abstract. (For more on the structure of a patent application, see page 24). Some patent offices make it possible for applicants to submit their application through the Internet. In some countries, there may be an option for filing a provisional patent application (see box on page 23).

The task of preparing a patent application is generally performed by a patent attorney or agent who will represent your interests during the application process. The box on the following page provides a basic overview of the application process. Note that there may be important variations between countries and it is always best to check with the patent office of the relevant country or a patent law firm in the relevant country to obtain up-to-date information on procedures and applicable fees.

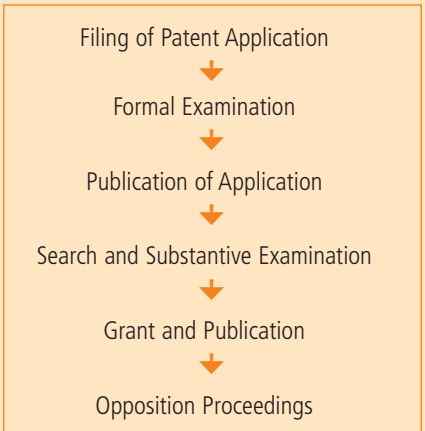


International application No. PCT/DE2003/003510. Steering wheel of a motor vehicle comprising an integrated airbag module.

Processing an application – step by step

The steps taken by a patent office to grant a patent vary but, broadly speaking, follow a similar pattern:

- **Formal examination**: The patent office examines the application to ensure that it complies with the administrative requirements or formalities (e.g., that all relevant documentation is included and the application fee has been paid).
- **Search**: In many countries, the patent office conducts a search to determine the prior art in the specific field to which the invention relates. The search report is used during the substantive examination to compare the claimed invention with the prior art.
- **Substantive examination**: The aim of the substantive examination is to ensure that the application satisfies the patentability requirements. Not all patent offices check applications against all the patentability requirements, and some only do so upon request within a specified time. The results of the examination are sent in writing to the applicant (or his attorney) so as to provide an opportunity to respond to and/or remove any objections raised during the examination. This process often results in the narrowing of the scope of the claims.
- **Publication**: In most countries, the patent application is published 18 months after the first filing date. In general, patent offices also publish the patent once it is granted.
- **Grant**: If the examination process reaches a positive conclusion, the patent office grants the patent and issues a certificate of grant.
- **Opposition**: Many patent offices provide a period during which third parties may oppose the grant of a patent, for example, on the basis that the claimed invention is not new. Opposition proceedings may be pre-grant and/or post-grant, and are possible within the specified time limits.



The above is a stylized graph of patent granting procedures at some patent offices. Note that procedures may vary amongst patent offices.

How much does it cost to patent an invention?

The costs vary considerably from country to country and within a country depending on factors such as the nature of the invention, its complexity, attorney's fees, the length of the application and objections raised during the examination by the patent office.
It is important to keep in mind and properly budget the costs related to patent application and maintenance:

- There are generally costs associated with performing a **prior art search**, particularly if you rely on the services of an expert;
- There are **official filing fees** that vary widely from country to country. The relevant national or regional patent office will be able to give you details on the fee structure. Some countries have discounts for SMEs and/or for applicants filing the application on-line. In addition, some countries allow expedited examination on payment of additional fees.
- If you rely on the services of a **patent agent/attorney** to assist you in the application process (e.g., provide the patentability opinion, draft the patent application, prepare the formal drawings and correspond with the patent office), you will incur additional costs;
- Once a patent has been granted by the patent office, you must pay **maintenance or renewal fees**, generally on an annual basis, to maintain the validity of the patent;
- In case you decide to patent your invention abroad, you should consider also the **relevant official filing fees** for the countries in question, the **translation costs** and the costs of using local **patent agents** (which is a requirement, in many countries, for foreign applicants).
- In case of inventions involving micro-organisms, where the **deposit of the micro-organism** or biological material with a recognized depositary institution is necessary, fees for filing, storage and viability testing of the deposited material will have to be paid.

OAPI Patent No. 40893. The Emergency Autotransfusion Set (EAT-SET), invented and patented by Nigerian doctor Oviemo Ovadje, facilitates the recovery of blood out of the body cavity in patients who suffer from internal bleeding. Such blood is re-infused after filtration. The product is being commercialized by EAT-SET Industries and First Medical and Sterile Products.

When should you file a patent application?

In general, it is preferable to apply for patent protection as soon as you have all the information required for drafting the patent application. However, there are a number of factors that help an applicant to decide when is the best time to file a patent application. Reasons for ensuring that your application is filed early include the following:

- In most countries worldwide (with the notable exception of the United States of America, see box on page 22) patents are granted on a **first-to-file** basis. Thus, filing an application early is important to ensure that you are the first to file an application on that particular invention so that you do not lose your invention to others.
- Applying for patent protection early will generally be useful if you are seeking **financial support** or wish to **license** your invention to commercialize it.
- You can generally only enforce a patent once it has been granted by the relevant patent office, which is a procedure that may take a few years (see page 26).

Nevertheless, rushing to file a patent application as soon as you have an invention may also be a problem for the following reasons:

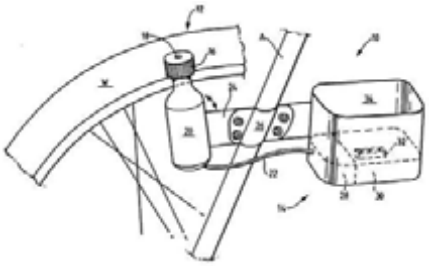
- If you apply too early and subsequently make changes to your invention it will generally not be possible to make significant changes to the original description of the invention.
- Once you have filed your application in one country or region, you normally have **12 months** to file an application for the same invention in all the countries of interest to your business in order to enjoy the benefit of the filing date of your first application. (See explanation of priority date on page 30). This may be a problem if the costs of applying in various countries and paying the maintenance fees are too high for your company. One way of mitigating this problem, is by postponing the payments of translation and national fees for a period of 30 months by using the **Patent Cooperation Treaty (PCT)** (see pages 32 and 33).

When deciding on the timing for filing a patent application, it is important to bear in mind that the application should be filed before disclosing the invention. Any disclosure before filing the application (e.g., for test-marketing, to investors or other business partners) should be done only after signing a confidentiality or non-disclosure agreement.

How important is it to keep an invention confidential prior to filing a patent application?

If you wish to obtain a patent on your invention, keeping it **confidential** prior to filing the application is absolutely necessary. In many circumstances, public disclosure of your invention prior to filing the application would destroy the novelty of your invention, rendering it unpatentable, unless the applicable law provides for a "**grace period**" (see page 23).

It is, therefore, extremely important for inventors, researchers and companies to avoid any disclosure of an invention that might affect its patentability until the patent application has been filed.



International application No. PCT/IB01/00706. Improvements in charging mobile phones.

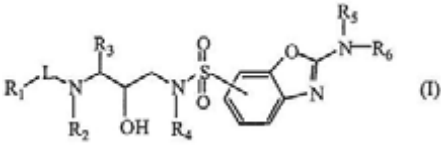
First-to-file versus first-to-invent

In most countries, patents are granted to the **first person to file a patent application** on an invention. A notable exception is the United States of America where a **first-to-invent** system applies, in which, in case of similar patent applications filed, the patent will be granted to the first inventor who conceived and reduced the invention to practice whether or not the patent application has been filed first. In order to prove inventorship within a first-to-invent system, it is crucial to have well-kept, duly signed and dated **laboratory notebooks**, which may be used as evidence in case of a dispute with another company or inventor.

What is a "grace period"?

The legislation of some countries provides a "**grace period**" of 6 or 12 months, from the moment an invention was disclosed by the inventor or the applicant until the application is filed, in which the invention does not lose its patentability because of such disclosure. In such countries, a company may disclose its invention, for example by displaying it in a trade show or publishing it in a company catalogue or technical journal, and file the patent application within the grace period without the invention losing patentability and being barred from obtaining a patent.

However, as this is not the case in all countries, relying on the grace period in your own country would preclude you from patenting the invention in other markets of interest where a grace period is not available.



International application No. PCT/EP02/05212. Broadspectrum 2-amino-benzoxazole sulfonamide HIV protease inhibitors

Provisional Patent Applications

In a few countries (including Australia, Canada, India and the United States of America) applicants have the possibility of filing a provisional patent application. The provisional patent application is intended to be a relatively low-cost entry point to the patent system. The applicant may then wait up to a year before filing a full patent application. While details of how provisional patent applications work vary from country to country, some features that are generally followed in the countries that provide this possibility include:

- Provisional patent applications generally do not undergo substantive examination;
- The official filing fees are lower than the fees requested for a full patent application;
- The provisional application need not include claims. However, it does require a full description of the invention.

What is the structure of a patent application?

A **patent application** has a range of functions:

- It determines the legal scope of the patent;
- It describes the nature of the invention, including instructions on how to carry out the invention; and
- It gives details of the inventor, the patent owner and other legal information.

Patent applications are similarly structured worldwide and consist of a **request**, a **description, claims, drawings** (if necessary) and an **abstract**. A patent document may be anywhere between a few pages to hundreds of pages long, depending on the nature of the specific invention and the technical field.

Request

It contains information on the title of the invention, the date of filing, the priority date and bibliographic data such as the name and address of the applicant and inventor.

Description

The written description of an invention must describe the invention in sufficient detail so that anyone skilled in the same technical field can reconstruct and practice the invention from the description and the drawings without putting in further inventive effort. If this is not the case, the patent may not be granted or may be revoked after it is challenged in a court action.

Claims

The claims determine the scope of protection of a patent. The claims are absolutely crucial to a patented invention since, if they are badly drafted, even a truly valuable invention could result in a worthless patent that is easy to circumvent or design around.

In patent litigation, interpreting the claims is generally the first step in determining whether the patent is valid and in determining whether the patent has been infringed. It is strongly advisable to seek the advice of an expert to draft patent applications, particularly the claims.

Examples of claims:

First two claims of Patent No. US4641349 entitled "Iris Recognition System":

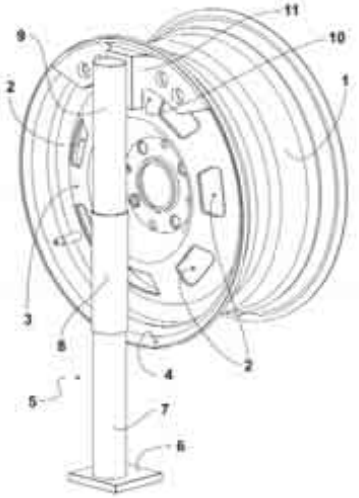
1. A method of identification of a person, comprising: storing image information of at least a portion of the iris and pupil of the person's eye; illuminating an eye, of an unidentified person having an iris and a pupil; obtaining at least one image of at least the same portion of the iris and pupil of the eye of the unidentified person; and comparing at least the iris portion of the obtained image with the stored image information to identify the unidentified person.

2. The method of claim 1 in which illuminating comprises driving the pupil of the eye to at least one predetermined size, comparing at least the iris portion of the obtained image with stored image information obtained from an eye with its pupil having the same predetermined size.

Drawings

The drawings show the technical details of the invention in an abstract and visual way. They help to explain some information, tool or result set out in the disclosure. Drawings are not always a necessary part of the application. If the invention is for a process or method of doing something, drawings usually are not required. If drawings are required, formal rules govern their acceptability.

Example of drawing:



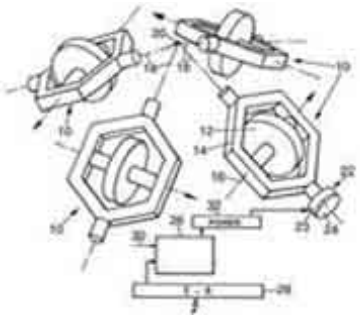
Patent No. DE10230179 for a jack or "Tire release device". The invention provides a novel jack for lifting spring-mounted wheels of a vehicle. It uses a support structure (11) that engages with the outer rim (4) of the wheels(1). The jack moves directly the wheels and not the body of the vehicle. Therefore, less length of jack lift is sufficient to free the wheels from the ground.

Abstract

The abstract is a brief summary of the invention. When the patent is published by the patent office, the abstract is included on the front page. The abstract is sometimes improved or drafted by the patent examiner in the relevant patent office.

How long does it take to obtain patent protection?

The time taken for a patent office to grant a patent varies significantly from office to office and between fields of technology and may range from a few months to a few years, generally between 2 to 5 years. Some patent offices have established a procedure for accelerated grant that can be requested by applicants in specific circumstances.



International application No. PCT/FR/2004/000264. Device for controlling the attitude of a satellite by means of gyroscopic acuators.

Proofreading a granted patent

Once a patent is granted it is advisable to proofread the patent thoroughly to ensure that there are no mistakes or missing words, particularly in the claims.

From what date is your invention protected?

Your rights effectively begin on the date of grant of your patent, as you can only take legal action against unauthorized use of the invention by third parties once it has been granted. In some countries, you may sue infringers after the grant, for infringement that occurred between the date of publication of the patent application (generally 18 months after the first application has been filed) and the date of grant. Typically, you may claim reasonable compensation for use between publication and grant. But this is not the case in all countries. (More on enforcement on pages 39 to 41).

In some countries, it is possible to file a patent application and a utility model application for the same invention. This is sometimes done in order to benefit from utility model protection (which is generally granted faster) until the patent is eventually granted.

How long does patent protection last?

The current international standard provides for a term of protection of **20 years** from the filing date of the application, provided the renewal or maintenance fees are paid on time and that no request for invalidation or revocation has been successful during this period.

While the above relates to the legal life of a patent, the **business or economic life of a patent** is over if the technology covered by it is outdated, if it cannot be commercialized or if the product based on it has not been successful in the market. In all such circumstances, the patent holder may decide to no longer pay the maintenance or renewal fees, leaving it to expire earlier than the term of protection of 20 years, and thus, let it fall into the public domain.

In some countries, protection may be extended beyond 20 years or a **Supplementary Protection Certificate** (SPCs) may be granted in very specific circumstances. This is the case, for example, for patents on pharmaceuticals, due to delayed commercialization resulting from time required to obtain marketing approval from the appropriate governmental authorities. SPCs have a limited duration and generally cannot exceed five years.

Patent pending

Many companies label their products embodying the invention with the words "Patent Pending" or "Patent Applied For", sometimes followed by the number of the patent application. Similarly, once the patent is granted, it is increasingly common for companies to place a notice indicating that the product is patented, sometimes including the patent number. While these terms do not provide any legal protection against infringement, they may serve as a warning to dissuade others from copying the product as a whole or certain innovative features.

Do you need a patent agent to file a patent application?

Preparing a patent application and following it through to the grant stage is a complex task. Applying for patent protection means:

- Making a prior art search in order to identify any prior art that renders your invention unpatentable;
- Writing the claims and full description of the invention combining legal and technical jargon;
- Corresponding with the national or regional patent office especially during the substantive examination of the patent application;
- Making the necessary amendments to the application requested by the patent office.

All these aspects require in-depth knowledge of patent law and patent office practice.

Therefore, **even if legal or technical assistance is generally not mandatory it is strongly recommended**. It is advisable to rely on a patent agent who has both the relevant legal knowledge and experience as well as the technical background in the technical field of the invention. Most laws require foreign applicants to be represented by a registered patent agent who is resident in the country.

Patent No. EP1165393.
Torben Flanbaum's patent on a "Pourer for simultaneously pouring liquid from a container and mixing air into the liquid" was licensed to Menu A/S, a Danish SME, becoming the company's best selling product.

Can you apply for protection of many inventions through a single application?

Most patent laws provide for certain limitations in respect of the number of different inventions that may be included in one patent application. These limitations include the so-called requirement of **unity of invention**. Whereas some patent laws provide for other types of requirements of unity of invention (for example, the patent law of the United States of America), others (e.g., the European Patent Convention and the Patent Cooperation Treaty) permit groups of inventions so linked as to form a single "**inventive concept**" to be included in a single application. In case of lack of unity of invention, the applicant may be required to either restrict the claims or divide the application (divisional applications). As a result of differences in the applicable law, one patent application may suffice in some countries, while in others, two or more applications may have to be filed to cover the same ground.

Summary checklist

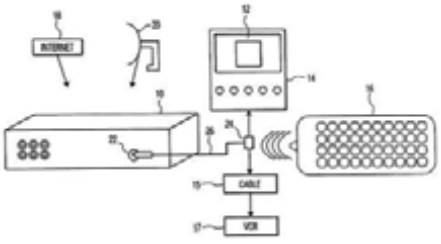
- **Is your invention patentable?** Conduct a prior art search and make good use of patent databases.
- **Filing a patent application.** Consider the importance of using a patent agent/attorney with expertise in the relevant field of technology, particularly for drafting the claims.
- **Timing of application.** Consider reasons for filing early/late and think of best timing for filing your patent application.
- **Do not disclose information** on the invention too early in order not to compromise its patentability.
- **Maintenance fees.** Remember to pay the maintenance or renewal fees in time to maintain your patent(s) in force.

3. Patenting abroad

Why apply for patents abroad?

Patents are **territorial rights**, which means that an invention is only protected in the countries or regions where patent protection has been obtained. In other words, if you have not been granted a patent with effect in a given country, your invention will not be protected in that country, enabling anybody else to make, use, import or sell your invention in that country.

Patent protection in foreign countries will enable your company to enjoy exclusive rights over the patented invention in those countries. In addition, patenting abroad may enable your company to license the invention to foreign firms, develop outsourcing relationship, and access those markets in partnership with others.



International application No. PCT/US02/12182. Apparatus for upgrading a remote control system.

When should you apply for patent protection abroad?

The date of your first application for a given invention is called the **priority date** and any subsequent applications in other countries filed by you within **12 months** (i.e., within the **priority period**) will benefit from the earlier application and will have priority over other applications for the same invention filed by others after the priority date. It is highly advisable to file your foreign patent applications within the priority period.

After the expiration of the priority period and until the patent is first published by the patent office (generally **18 months** after the priority date) you will still have the possibility to apply for protection for the same invention in other countries, but you can no longer claim priority of your earlier application. Once the invention has been disclosed or published, you may be unable to obtain patent protection in foreign countries, due to loss of novelty.

Where should you protect your invention?

As protecting an invention in many countries is an expensive undertaking, companies should carefully select the countries in which they require protection. Some of the key considerations when selecting where to patent are:

- Where is the patented product likely to be commercialized?
- Which are the main markets for similar products?
- What are the costs involved in patenting in each target market and what is my budget?
- Where are the main competitors based?
- Where will the product be manufactured?
- How difficult will it be to enforce a patent in a given country?

International application No. PCT/IT98/00133. The invention of a new process for treating linenized cork, lies behind the success of Italian company Grindi SRL., which has relied on the exclusivity provided by the patent for the commercialization of a new textile fabric.

How do you apply for patent protection abroad?

There are three main ways of protecting an invention abroad:

The national route. You may apply to the national patent office of each country of interest, by filing a patent application in the required language and paying the required fees. This path may be very cumbersome and expensive if the number of countries is large.

The regional route. When a number of countries are members of a regional patent system, you may apply for protection, with effect in the territories of all or some of these, by filing an application at the relevant regional office. The regional patent offices are:

- The African Intellectual Property Organization (OAPI) (*www.oapi.wipo.net*);
- The African Regional Intellectual Property Organization (ARIPO) (*www.aripo.wipo.net*);
- The Eurasian Patent Organization (EAPO) (*www.eapo.org*);
- The European Patent Office (EPO) (*www.epo.org*); and
- The Patent Office of the Gulf Cooperation Council (*www.gulf-patent-office.org.sa*).

The international route. If your company wants to have the option of protecting an invention in any number of member countries of the Patent Cooperation Treaty (PCT), then you should consider filing an international PCT application. To be eligible to do so, you must be a national or resident of a PCT Contracting State, or, your business must have a real and effective industrial or commercial presence in one of these countries. By filing one international application under the PCT, you may simultaneously seek patent protection for an invention in the more than 125 member countries of the PCT (see Annex II). This application may be filed either at your national or regional patent office and/or at the PCT receiving office at the World Intellectual Property Office (WIPO) in Geneva, Switzerland.

International application No. PCT/US2001/028473. EnviroScrub Technologies Corporation is an American SME using the PCT to apply for patent protection in a number of foreign markets for its technology for removing multiple pollutants from combustion and industrial processes. The use of the PCT to apply for protection abroad enabled EnviroScrub to enter into a licensing agreement for the global marketing of the technology.

Summary Checklist

- **Territorial rights.** Remember that patents are territorial rights.
- **Priority period.** Make use of the priority period to apply for protection abroad but do not miss deadlines that may impede you from obtaining patent protection abroad.
- **Where to apply.** Consider where you will benefit from protection and take into account the costs of protecting in various countries.
- **How to apply.** Consider using the PCT to facilitate the application process, gain time and receive valuable patentability information on which you can base your decisions about further pursuing patent protection.

Advantages of the PCT

The PCT provides at least **18 additional months** on top of the 12 month priority period, in which applicants can explore the commercial potential of their product in various countries and decide where to seek patent protection. Payment of the fees and translation costs associated with national applications is thus delayed. The PCT is widely used by applicants to keep their options open for as long as possible.

PCT applicants receive **valuable information** about the potential patentability of their invention in the form of the PCT **International Search Report** and the **Written Opinion of the International Searching Authority.** These documents provide PCT applicants with a strong basis on which they can make their decisions about whether and where to pursue patent protection. The International Search Report contains a list of prior art documents from all over the world, which have been identified as relevant to the invention. The Written Opinion of the International Searching Authority analyzes the potential patentability in light of the results of the International Search Report.

A single PCT application, in one language and with one set of fees, has legal effect in all PCT member countries. This effect significantly **reduces the initial transaction costs** of submitting separate applications to each patent office. The PCT may also be used to file applications under some of the regional patent systems. Guidance on how to submit an international application under the PCT can be obtained from your national patent office and at *www.wipo.int/pct*.

Outline of the PCT application process

4. Commercializing patented technology

How do you commercialize patented technology?

A patent on its own is no guarantee of commercial success. It is a tool that enhances a company's capacity to benefit from its inventions. In order to provide a tangible benefit to a company, a patent needs to be exploited effectively and will generally make money only if the product based on the patent is successful in the market or boosts the firm's reputation and bargaining power. To take a patented invention to market, a company has a range of options:

- Commercializing the patented invention directly;
- Selling the patent to someone else;
- Licensing the patent to others;
- Establishing a joint venture or other strategic alliance with others having complementary assets.

How do you take a patented product to market?

The commercial success of a new product in the market does not only hinge on its technical features. As great as an invention may be from a technical point of view, if there is no effective demand for it or if the product is not properly marketed it is unlikely to attract consumers. Commercial success, therefore, also depends on a range of other factors, including the design of the product, the availability of financial resources, the development of an effective marketing strategy and the price of the product in comparison with that of competing or substitute products.

To take an innovative product to market, it is generally helpful to develop a **business plan**. Business plans are effective tools for examining the feasibility of a business idea. A business plan is essential for approaching an investor to obtain financial resources to take a new patented product to market. Including information on your company's patents and patent strategy in the business plan is important, as it is a strong indicator of the novelty of your company's products, provides evidence of due diligence and reduces the risk of infringement of other companies' patents.

Can you sell your patent?

Yes, this is called assigning your patent, and it will permanently transfer ownership of the patent to another person. Such a decision must be very carefully considered.

By licensing your patent instead of assigning it, you obtain the benefit of royalties for the remainder of the life of the patent. Licensing can be a very financially rewarding strategy for that reason. Assignment, on the other hand, means you receive an agreed-upon payment once, with no future royalties, regardless of how profitable the patent ends up being.

There may be occasions when an assignment is advantageous. If a patent is sold for a lump sum, you get the value immediately, without having to wait up to 20 years to realize that value progressively. You also avoid the risk that the patent may be superceded by another technology. In addition, assignment of the patent to a start-up company may be a pre-condition for funding, if the patent does not belong to the company.

In each case, it is an individual decision, based on your needs and priorities. However, assigning a patent is generally not recommended and patent owners generally prefer to maintain ownership over their inventions and grant licenses.

How do you license your patent to be exploited by others?

A patent is licensed when the owner of the patent (the licensor) grants permission to another (the licensee) to use the patented invention for mutually agreed purposes. In such cases, a **licensing contract** is generally signed between the two parties, specifying the terms and scope of the agreement.

Authorizing others to commercialize your patented invention through a licensing agreement will enable your business to obtain an **additional source of revenue** and is a common means of exploiting a company's exclusive rights over an invention.

Licensing is particularly useful if the company that owns the invention is not in a position to make the product at all or in sufficient quantity to meet a given market need, or to cover a given geographical area.

As a license agreement requires skillful negotiations and drafting, it is advisable to seek the assistance of a licensing practitioner for negotiating the terms and conditions and for drafting the licensing agreement. In some countries, licensing agreements need to be registered with a government regulatory authority.

What royalty rate should you expect to receive for your patent?

In licensing deals, the owner of the right is generally remunerated through lump-sum payments and/or through recurring **royalties**, which may be based on sales volume of the licensed product (per unit royalty) or on net sales (net sales-based royalty). In many cases, the remuneration for a patent license is a combination of a lump-sum payment and royalties. Sometimes, an equity stake in the company of the licensee may replace a royalty.

While industry standards for royalty rates exist for particular industries and may usefully be consulted, it must be remembered that each licensing agreement is unique and the royalty rate depends on the particular and very distinct factors being negotiated. Therefore, industry standards may provide some useful initial guidance but too great a reliance on such standards is often misplaced.

A patent application for a heat exchanger filed by Indian inventor Dr. Milind Rane, has been the object of a license agreement with an SME based in Mumbai. As set out in the agreement, the inventor obtained a down payment at the time of signing the agreement as well as 4.5% royalties on net sales. The licensee will also bear the patent filing and maintenance costs.

What is the difference between an exclusive and non-exclusive license?

There are three types of licensing agreements depending on the number of licensees that will be allowed to work the patent:

- **Exclusive license**: a single licensee has the right to use the patented technology, which cannot even be used by the patent owner;
- **Sole license**: a single licensee and the patent owner have the right to use the patented technology; and
- **Non-exclusive license**: several licensees and the patent owner have the right to use the patented technology.

In a single licensing agreement, there may be provisions that grant some rights on an exclusive basis and others on a sole or non exclusive basis.

The patented method for treatment of wastewater developed by researchers at the National Autonomous University of Mexico (UNAM) became the object of a successful non-exclusive licensing agreement with IB-Tech, a university spin-off company set up to provide innovative solutions for the treatment of wastewater.

Should you grant an exclusive or non-exclusive license for your patent?

It depends on the product and on your company's business strategy. For example, if your technology can become a standard that is needed by all players in a specific market to perform their business, a non-exclusive, widely-held license would be the most advantageous. If your product needs one company to invest heavily to commercialize the product (e.g., a pharmaceutical product that requires investments in performing clinical trials), a potential licensee would not want to face competition from other licensees, and may rightly insist on obtaining an exclusive license.

When is the best time to license your invention?

There is no best time to license your invention, as the timing will depend on the specificities of the case. However, for an independent entrepreneur or inventor, it is often advisable to start the search for licensees as early as possible in order to guarantee a revenue stream that will be useful to cover the costs of patenting. There is no need to wait for the patent to be granted.

More than the right time, it is critical to find the right partner(s) to generate profits from the commercialization of the patented invention.

Patent valuation

There are many different reasons why it might be beneficial or necessary for a company to conduct a patent valuation, including accounting purposes, licensing, mergers or acquisitions, assignment or purchase of IP assets or fund-raising. While there is no single patent valuation method that is suitable in all circumstances, the following are the most widely used:

- **Income method:** Most commonly used patent valuation method. The method focuses on the expected income stream that the patent holder would get during the lifetime of the patent.
- **Cost method:** Establishes the value of the patent by calculating the cost of developing a similar asset either internally or externally.
- **Market method:** Based on the value of comparable transactions made in the market.
- **Option-based methods:** Based on the option pricing methods initially developed for use in pricing stock options.

There are factors that are difficult to quantify that may also impact on the value of a patent, such as the strength of the patent claims or the existence of close substitutes.

If you are interested in a competitor's patent, can you obtain permission to use it?

It may not always be easy or affordable to obtain authorization to incorporate technology owned by a competitor into your products/processes. However, if your competitor is also interested in your company's patents, then you should think of **cross-licensing**. Cross-licensing is very common in industries where a number of patents covering a wide range of complementary inventions are held by two or more competitors. Such competing companies seek to ensure their **freedom to operate** by obtaining the right to use patents owned by their competitors while providing the right to use their own patents to the competitors.

Summary Checklist

- **Commercialization.** Consider the different options for commercializing your patented invention and make sure you have a convincing business plan if you decide to take an innovative product to market.
- **Licensing.** Royalty rates and other features of licensing agreements are a function of negotiation and it is advisable to seek expert advice when drafting and negotiating licensing agreements.
- **Exclusive vs. Non-exclusive.** Consider the reasons for granting exclusive/non-exclusive licenses, particularly in the light of the maturity of the technology and your company's business strategy.
- **Cross-licensing.** See whether you can use your patent(s) to access useful technology owned by others.

5. Enforcing patents

Why should you enforce patent rights?

If you launch a new or improved product and it is successful in the market, it is likely that competitors will sooner or later attempt to make products with technical features that are identical, or very similar, to those of your product. In some cases, competitors may have the benefit of economies of scale, greater market access, or access to cheaper raw materials, and be able to make a similar or identical product at a cheaper price. This could put heavy pressure on your business, especially if it has invested significantly in R&D for creating the new or improved product.

The exclusive rights granted by a patent give the patent owner the opportunity to prevent or stop competitors from making products and using processes that infringe on its rights and to seek compensation for damages suffered. To prove that infringement has occurred, it must be shown that each and every element of a given claim, or its equivalent, is contained in the infringing product or process. Enforcing your rights when you believe that your patented invention is being copied may be crucial to maintaining your competitive edge, market share and profitability.

Who is responsible for enforcing patent rights?

The main responsibility for identifying and taking action against infringers of a patent lies with its owner. As a patent owner, you are responsible for monitoring the use of your invention in the marketplace, identifying any infringers and deciding whether, how and when to take action against them. Independent inventors and SMEs may decide to shift this responsibility (or part of it) to an exclusive licensee.

It is advisable to contact a patent lawyer to assist you in taking any steps for enforcing your patent, both domestically and/or in any export markets. A lawyer will also advise you on the costs and the risks involved and the best strategy.

What should you do if your patent is being used by others without your authorization?

If you believe that others are infringing your patent, i.e., using it without your authorization, then, as a first step, you need to collect information about infringing parties and their use of the infringing product or process. You should accumulate all available facts to determine the nature and timing of your action. Always engage a patent lawyer to assist you in making a decision on the infringement of your patented invention. In some cases, when infringement is detected, companies choose to send a letter (commonly known as a "**cease and desist letter**") informing the alleged infringer of a possible conflict between your rights and the other company's business activity. This procedure is often effective in the case of non-intentional infringement since the infringer will in many such cases either discontinue such activities or agree to **negotiate a licensing agreement**.

Sometimes, however, surprise is the best tactic in order to avoid giving the infringer time to hide or destroy evidence. In these circumstances, it might be appropriate to go to court without giving notice to the infringer and to ask for an "**interim injunction**" in order to surprise the infringer by a raid, often with the help of the police, at his business premises. The court may order that the alleged infringers stop their infringing action pending the outcome of a trial (which may take many months or years). However, the question of whether a patent has been infringed may be very complex and a decision may, therefore, only be taken in proceedings on the merits of the case.

Where the company decides to initiate **civil proceedings**, the courts generally provide a wide range of civil remedies to compensate aggrieved owners of patent rights. A patent lawyer will be able to provide you the relevant information.

In order to prevent the **importation of goods infringing patents**, measures at the international border may be available to patent holders in some countries through the national customs authorities. Many countries, however, provide for border measures in accordance with their international obligations only in cases of importation of counterfeit trademark goods and pirated copyright goods.

As a general rule, if you identify infringement, it is highly advisable to seek professional legal advice.

What are your options for settling the patent infringement out of court?

If the dispute is with a company with which there is a signed contract (e.g., a licensing agreement), then first check whether there is an **arbitration or mediation** clause in the contract. It is advisable to include a special provision in contracts for the dispute to be referred to arbitration or mediation in order to avoid long and expensive litigation. It may be possible to use alternative dispute resolution systems, such as arbitration or mediation, even if there is no clause in the contract, or no contract at all, as long as both parties agree to it.

Arbitration generally has the advantage of being a less formal and shorter procedure than court proceedings, and an arbitral award is more easily enforceable internationally. An advantage of mediation is that the parties retain control of the dispute resolution process. As such, it can help to preserve good business relations with another enterprise with which your company may wish to collaborate in the future. The **WIPO Arbitration and Mediation Center** provides services for alternative dispute resolution. More information on arbitration and mediation can be found at: *arbiter.wipo.int/center/index.html.*

Patent No. GB2266045. The "Drinking vessel suitable for use as a trainer cup", commercially known as the Anywayup® cup, was patented in 1992 by inventor/entrepreneur Mandy Haberman (UK). Following the launch of an infringing product by a competitor, Mandy Haberman obtained an injunction preventing further infringement of the patent and eventually settled the matter out of court.

Summary checklist

- **Be vigilant.** As far as possible, monitor the competition to detect infringement.
- **Seek advice.** Consult a patent attorney before you take any action to enforce your patents, as any move on your side may have an impact on the outcome of litigation.
- **Alternative dispute resolution.** Consider ways of settling disputes out of court and include relevant arbitration or mediation clauses in any license agreement.

Annex I – Useful websites

For more information on

- intellectual property issues from a business perspective
  www.wipo.int/sme

- patents in general
  www.wipo.int/patent/en/index.html

- On practical aspects relating to the filing of patent applications, see list of websites of national and regional patent offices available in Annex II or
  www.wipo.int/news/links/ipo

- On the Patent Cooperation Treaty
  www.wipo.int/pct/en/index.html

- On the International Patent Classification
  www.wipo.int/classifications/ipc/en

- On arbitration and mediation
  arbiter.wipo.int/center/index.html

- On on-line patent databases of national and regional patent offices
  www.wipo.int/ipdl/en/resources/links.jsp

- On enforcement of IP rights
  www.wipo.int/enforcement

- On membership of WIPO-administered treaties
  www.wipo.int/treaties/en/index.jsp

ANNEX II – Internet Addresses

National and Regional Patent Offices

African Organization for Intellectual Property (OAPI)	*www.oapi.wipo.net*
African Regional Industrial Property Organization (ARIPO)	*www.aripo.org*
Algeria	*www.inapi.org*
Andorra	*www.ompa.ad*
Argentina	*www.inpi.gov.ar*
Armenia	*www.armpatent.org*
Austria	*www.patentamt.at*
Australia	*www.ipaustralia.gov.au*
Barbados	*www.caipo.gov.bb*
Belize	*www.belipo.bz*
Belgium	*www.european-patent-office.org/patlib/country/belgium*
Bolivia	*www.senapi.gov.bo*
Brazil	*www.inpi.gov.br*
Bulgaria	*www.bpo.bg*
Canada	*www.cipo.gc.ca*
China	*www.sipo.gov.cn*
China: Hong Kong (SAR)	*www.info.gov.hk/ipd*
China: Macao (SAR)	*www.economia.gov.mo*
Chile	*www.dpi.cl*
Colombia	*www.sic.gov.co*
Costa Rica	*www.registronacional.go.cr*
Croatia	*www.dziv.hr*
Cuba	*www.ocpi.cu*
Czech Republic	*www.upv.cz*
Denmark	*www.dkpto.dk*
Dominican Republic	*www.seic.gov.do/onapi*
Egypt	*www.egypo.gov.eg*
El Salvador	*www.cnr.gob.sv*

Estonia	*www.epa.ee*
Eurasian Patent Office	*www.eapo.org*
European Patent Office	*www.epo.org*
Finland	*www.prh.fi*
France	*www.inpi.fr*
Georgia	*www.sakpatenti.org.ge*
Germany	*www.dpma.de*
Greece	*www.gge.gr*
Gulf Cooperatioin Council	*www.gulf-patent-office.org.sa*
Hungary	*www.hpo.hu*
Iceland	*www.els.stjr.is*
India	*www.patentoffice.nic.in*
Indonesia	*www.dgip.go.id*
Ireland	*www.patentsoffice.ie*
Israel	*www.justice.gov.il*
Italy	*www.minindustria.it*
Jamaica	*www.jipo.gob.jm*
Japan	*www.jpo.go.jp*
Jordan	*www.mit.gov.jo*
Kazakhstan	*www.kazpatent.kz*
Kenya	*www.kipo.ke.wipo.net*
Kyrgyzstan	*www.krygyzpatent.kg*
Lao People's Democratic Republic	*www.stea.la.wipo.net*
Latvia	*www.lrpv.lv*
Lithuania	*www.vpb.lt*
Luxembourg	*www.eco.public.lu*
Malaysia	*www.mipc.gov.my*
Mexico	*www.impi.gob.mx*
Monaco	*www.european-patent-office.org/patlib/country/monaco*
Morocco	*www.ompic.org.ma*
Netherlands	*www.bie.minez.nl*
Nepal	*www.ip.np.wipo.net*

New Zealand	*www.iponz.govt.nz*
Norway	*www.patentstyret.no*
Panama	*www.mici.gob.pa/comintf.html*
Peru	*www.indecopi.gob.pe*
Philippines	*www.ipophil.gov.ph*
Poland	*www.uprp.pl*
Portugal	*www.inpi.pt*
Republic of the Congo	*www.anpi.cg.wipo.net*
Republic of Korea	*www.kipo.go.kr*
Republic of Macedonia	*www.ippo.gov.mk*
Republic of Moldova	*www.agepi.md*
Romania	*www.osim.ro*
Russian Federation	*www.rupto.ru*
Serbia and Montenegro	*www.yupat.sv.gov.yu*
Singapore	*www.ipos.gov.sg*
Slovak Republic	*www.indprop.gov.sk*
Slovenia	*www.sipo.mzt.si*
Spain	*www.oepm.es*
Sweden	*www.prv.se*
Switzerland	*www.ige.ch*
Tajikistan	*www.tjpat.org*
Thailand	*www.ipthailand.org*
Turkey	*www.turkpatent.gov.tr*
Tunisia	*www.inorpi.ind.tn*
Ukraine	*www.ukrpatent.org*
United Kingdom	*www.patent.gov.uk*
United States of America	*www.uspto.gov*
Uruguay	*http://dnpi.gub.uy*
Uzbekistan	*www.patent.uz*
Venezuela	*www.sapi.gov.ve*

Note:
For up-to-date information visit website at the following url:
www.wipo.int/directory/en/urls.jsp

Annex III – PCT

Contracting States of the Patent Cooperation Treaty (PCT)

(1 January 2005)

Albania
Algeria
Antigua and Barbuda
Armenia
Australia
Austria
Azerbaijan
Barbados
Belarus
Belgium
Belize
Benin
Bosnia and Herzegovina
Botswana
Brazil
Bulgaria
Burkina Faso
Cameroon
Canada
Central African Republic
Chad
China
Colombia
Comoros (effective 3 April 2005)
Congo
Costa Rica
Côte d'Ivoire
Croatia
Cuba
Cyprus
Czech Republic
Democratic People's Republic of Korea
Denmark
Dominica
Ecuador
Egypt
Equatorial Guinea
Estonia
Finland
France
Gabon
Gambia
Georgia
Germany
Ghana
Greece
Grenada
Guinea
Guinea-Bissau
Hungary
Iceland
India
Indonesia
Ireland
Israel
Italy
Japan
Kazakhstan
Kenya
Kyrgyzstan
Latvia
Lesotho

Liberia
Liechtenstein
Lithuania
Luxembourg
Madagascar
Malawi
Mali
Mauritania
Mexico
Monaco
Mongolia
Morocco
Mozambique
Namibia
Netherlands
New Zealand
Nicaragua
Nigeria (effective 8 May 2005)
Niger
Norway
Oman
Papua New Guinea
Philippines
Poland
Portugal
Republic of Korea
Republic of Moldova
Romania
Russian Federation
Saint Lucia
Saint Vincent and the Grenadines
San Marino
Senegal
Serbia and Montenegro
Seychelles
Sierra Leone
Singapore
Slovakia
Slovenia
South Africa
Spain
Sri Lanka
Sudan
Swaziland
Sweden
Switzerland
Syrian Arab Republic
Tajikistan
The former Yugoslav Republic of Macedonia
Togo
Trinidad and Tobago
Tunisia
Turkey
Turkmenistan
Uganda
Ukraine
United Arab Emirates
United Kingdom
United Republic of Tanzania
United States of America
Uzbekistan
Viet Nam
Zambia
Zimbabwe

Note:
For more up-to-date information on Contracting States of the PCT, see: *www.wipo.int/pct*

For more information contact the
World Intellectual Property Organization

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P.O. Box 18
CH-1211 Geneva 20
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