

Inventing the Future

An Introduction to Patents
for Small and Medium-sized Enterprises



Intellectual Property
for Business Series
Number 3



**Publications in the
“Intellectual Property for Business” series:**

1. Making a Mark:

An Introduction to Trademarks and Brands for Small and Medium-sized Enterprises. WIPO publication No. 900.1.

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. 917.1.

4. Creative Expression:

An Introduction to Copyright and Related Rights for Small and Medium-sized Enterprises. WIPO publication No. 918.

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Introduction

Introduction

This is the third in the series of guides on Intellectual Property for Business. It focuses on patents, a crucial tool to enable a company to draw maximum benefit from new technological ideas.

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 today's knowledge economy, almost every enterprise that relies on making improvements to technology needs to consider patenting as a key factor in its business strategy. This guide explains in simple and practical terms the business benefits of the patent system for all types of firms. While it is advisable to consult a patent expert when seeking to protect, exploit or enforce a patent, this guide provides practical information that should be helpful for understanding the basics and asking the right questions when consulting an expert.

Small and medium-sized enterprises (SMEs) are encouraged to use the guide to integrate their technology and patent strategies into their overall business, marketing and export strategies. The World Intellectual Property Organization (WIPO) welcomes feedback to refine the guide so that it adequately meets the emerging needs of SMEs worldwide.

This guide provides a comprehensive introduction to patents. Other WIPO publications referred to in the text can be downloaded from www.wipo.int/publications, and the e-learning resource IP PANORAMA™ can be accessed at www.wipo.int/sme/en/multimedia. All these resources are available free of charge. However, neither this guide nor the other sources referred to are a substitute for professional legal advice.

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Patents

1. What is a patent?

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

It gives its owner the legal right to exclude or stop others from making, using, offering for sale, selling or importing a product or process based on the patented invention.

A patent is a **powerful business tool** to gain exclusivity over a new product or process while developing a strong market position or earning revenues through licensing. A complex product such as a camera, mobile phone or car may incorporate many different patented inventions owned by various 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 **20 years** from the date of filing the 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 (see No. 11). The granted patent and, in many countries, the patent application are published in an official journal or gazette.



An opener for sparkling beverages conceived by Argentinean 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 percent of its products. The company reinvests 10 percent of its sales in research and development (R&D) and attaches great importance to innovative design as a prerequisite for success in the helmet industry.

The power of innovation

Appreciating the distinction between “invention” and “innovation” is important. In this guide, the word **innovation** is used to mean the process of **creating a commercial product from an invention**. In other words, an invention brings something new into being, while an innovation brings something new into use. Accordingly, technical criteria are used to determine the success of an invention, whereas commercial criteria are used to determine the success of an innovation. Invention occurs when the technical solution to a problem meets the specific legal requirements for patenting. Innovation may or may not be based on patentable ideas.

Some of the main reasons why companies are interested in technological innovations include:

- to improve manufacturing processes in order to save costs and increase 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; and
- to prevent technological dependence on other companies’ technology.

In today’s economy, managing technological innovations requires a good knowledge of the patent system in order to ensure that the company draws maximum benefit from its own inventive and

creative capacity, establishes profitable partnerships with other patent holders and avoids making unauthorized use of technology owned by others.

Historically, businesses managed the development of their inventions in-house. This **“closed” innovation** method ensured that the business had complete control over its invention process and relied solely on its own development of ideas for success in the market. In contrast, **“open” innovation** recognizes that developing inventions solely in-house does not take advantage of external experts, other innovative businesses and the enormous wealth of worldwide R&D. Small and medium-sized businesses should keep the “open” innovation concept in mind when developing their business strategy. If more profits can be realized, risk reduced and time to market saved because of ideas accessed within the framework of trusted environments created through the application of trade secret management principles (see box after No. 5) then the concept of “open” innovation may be of value.

2. What is an invention?

An **invention** is generally defined in patent law 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** of a known product or process. Merely finding something that already exists in nature generally does not qualify as an invention; a substantial amount of human ingenuity, creativity and inventiveness must be involved.

While most inventions are the result of considerable effort and long-term investment in R&D, many simple and inexpensive technical improvements have yielded significant income and profits for their inventors or companies.

3. Why should you consider patenting your inventions?

The exclusivity provided by a patent may make the difference between success and failure in a challenging, risky and dynamic business climate.

Key reasons for patenting include:

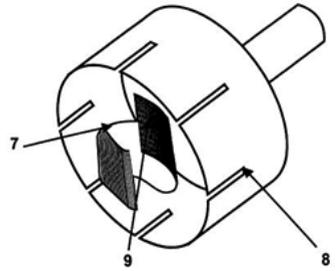
- **Preventing others from patenting.** By obtaining a patent, the patent holder will be able to prevent others from obtaining a patent for the same invention anywhere in the world.
- **Strengthening market position.** A patent gives its owner the exclusive right to prevent or stop others from using the patented invention, thereby reducing uncertainty, risk and com-

petition from free riders and imitators. Rights to a patented invention may make it more difficult for new competitors to enter the market. This will help stretch lead time and enable the patent holder to become well established.

- **Increasing profit or return on investment.** If the company has significantly invested in R&D, patent protection can help recover that cost and increase return on investment.
- **Gaining additional income from licensing.** A patent owner may license the rights in the invention to others in exchange for lump-sum payments and/or continuing royalties. Selling (or assigning) a patent transfers ownership, whereas licensing implies only permission to use the invention under specified conditions (see Nos. 31–39).
- **Gaining access to technology through cross-licensing.** If a company needs access to technology owned by others, it may use its own patents to negotiate cross-licensing agreements, meaning each party agrees to authorize the other to use all relevant patents under specified conditions (see No. 39).
- **Accessing new markets.** Licensing out patents to other businesses (or even pending patent applications) may provide access to new markets which are otherwise inaccessible due to business regulatory barriers. In order to take advantage of new international markets, the invention must also be protected in the relevant foreign market(s). The Patent Cooperation Treaty (PCT) provides an option for seeking protection for an invention in member

countries of the PCT through a single application (see Nos. 27–30).

- **Reducing the risk of others copying the invention unlawfully.** Obtaining patent protection entails publishing information about the invention so that other people can see that it is patented. This may reduce the chances of infringement or, at the very least, provide a basis to stop competitors from infringement and seek compensation for damages (see No. 40).
- **Enhancing the ability to raise funds.** Investors value the certainty that comes with patenting. Securing patent rights – or even pending applications – can enhance the ability of a company to raise the capital required to take a product to market. Indeed, in some sectors such as biotechnology, a strong patent portfolio is often a requirement to attract investors.
- **Gaining a powerful tool against imitators and free riders.** In order to effectively enforce patent exclusivity, notice of infringement may have to be given or a lawsuit filed. Owning a patent improves the ability to take successful legal action against copiers and imitators (see No. 42).
- **Boosting the corporate image.** Business partners, investors and customers will often see patent portfolios as a demonstration of the high level of expertise, specialization and technological capacity of the company. This may prove useful in finding business partners and otherwise raising the company’s profile and market value. In fact, some companies describe 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 by licensing the invention.

4. What other legal instruments are available to protect the assets of a business?

This guide focuses on **patents**. However, depending on what goods or services are by offered by the business, there may be other intellectual property (IP) rights suitable for protecting innovative features, including:

- **Utility models** (also known as “short-term patents,” “petty patents” or “innovation patents”). In many countries, some types of incremental inventions or small adaptations of existing products are protectable as utility models (see box after No. 6).
- **Trade secrets**. All sorts of confidential business information, including secret designs, machines and processes, may be protected as trade secrets so long as the information is not generally known, its commercial value derives from its secrecy, and reasonable steps have been taken to keep it secret (for example, restricting access on a “need to know” basis, and entering into confidentiality or non-disclosure agreements; see box after No. 5).¹
- **Industrial designs**. Exclusivity over the ornamental or aesthetic features of a product can be protected through laws on industrial designs, in some countries referred to as “design patents.”²

- **Trademarks**. Trademark protection provides exclusivity over words, marks and colors used to distinguish the products of one company from those of another.³
- **Copyright and related rights**. The form of expression of original literary, artistic and technical works (such as software) may be protected by copyright and related rights.⁴
- **New varieties of plants**. In many countries, a breeder of a new plant variety may obtain protection in the form of “plant breeder’s rights.”⁵
- **Layout-design (or topography) of integrated circuits**. An original layout-design of an integrated circuit may be protected against copying.

1 See IP PANORAMA Module 04.

2 See Looking Good, WIPO publication no. 498, and IP PANORAMA Module 02.

3 See Making a Mark, WIPO publication no. 900.1, and IP PANORAMA Modules 02 and 12.

4 See Creative Expression, WIPO publication no. 918, and IP PANORAMA Module 05.

5 See www.upov.int.

5. If an invention is patentable, should you apply for a patent?

Not always. Just because a technological idea is patentable doesn't mean that it will be a commercial success. In fact, the vast majority of patented inventions are not commercialized, and a product or technological innovation can often be protected more effectively by other means. Therefore, a careful cost/benefit analysis, including consideration of possible alternatives, is essential before filing a patent application. A patent may be expensive and difficult to obtain, maintain and enforce. The decision should be based primarily on the probability of obtaining commercially useful protection for the invention.

Questions to ask when deciding to file a patent application include:

- Do the expected profits from an exclusive position in the market justify the costs of patenting (see No. 17 on patenting costs)?
 - How broadly can patent coverage be claimed, and will this provide commercially useful protection?
 - Will it be easy to identify infringement of the patent (process patents, for example, are easier to infringe secretly), and are you ready to invest time and financial resources in enforcing it?
- Is there a market for the invention?
 - What are the alternatives, and how do they compare with the invention?
 - Is the invention useful for improving an existing product or developing a new product? In the latter case, does that fit with the company's business strategy?
 - Are there potential licensees or investors who would be willing to help take the invention to market?
 - How valuable will the invention be to the business and to competitors?
 - Is it easy to "reverse engineer" the invention from a marketed product or to "design around" it?
 - How likely are others, especially competitors, to invent and patent what has been invented?

Patents versus secrecy versus disclosure

If the invention is likely to fulfill the patentability requirements (see No. 6), the company will face a choice: keep the invention as a trade secret, patent it, or 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 the country, trade secrets may be protected under legislation against unfair competition, through specific provisions of one or more laws, through case law on the protection of confidential information, through contractual provisions in agreements with employees, consultants, customers and business partners, or through a combination of the above.

Trade secret protection has several potential **advantages**:

- It involves no registration costs.
- It does not require disclosure or registration with a government office and the invention is not published.
- It is not limited in time.
- It has immediate effect.

But it also has significant potential **disadvantages**:

- Trade secret laws do not prohibit independent invention or discovery, only improper acquisition, use or disclosure.
- If a secret is publicly disclosed, anyone who obtains access will be free to use it.
- If the secret is embodied in an innovative product, others may be able to “reverse engineer” it, discover the secret and use it without permission.
- A trade secret can be difficult to enforce, depending on the laws that apply.
- A trade secret may be patented by others who might then seek to stop your use of it.

While patents and trade secrets may be perceived as alternative means of protecting inventions, they are often complementary. 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 successfully exploit a patented invention is often kept as a trade secret.

Case study: using trade secrets alongside patents – Ecoflora

Ecoflora SAS Corporation of Colombia develops plant-based products for personal, household, agricultural and industrial use. Drawing on the rich horticulture of South America, the company has created an innovative portfolio of industrial and household products, including dyes, pesticides and soaps, among other things.

To grow its product portfolio, Ecoflora invests heavily in R&D, and it protects that valuable investment through careful use of the intellectual property system. The various companies in the Ecoflora corporate family own numerous patents, including several filed through the PCT.

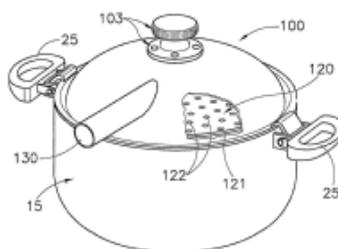
But these patented inventions are not its only IP assets. The processes by which the products are made are also crucial, and Ecoflora protects many of those through trade secrets.⁶

6. What can be patented?

To be eligible for patent protection, the claimed invention must:

- consist of **patentable subject matter** (see No. 7);
- be **new** (novelty requirement) (see No. 8);
- **involve an inventive step** (non-obviousness requirement) (see No. 9);
- be **capable of industrial application** (or be useful) (see No. 10); and
- be **disclosed** in a clear and complete manner in the patent application (disclosure requirement) (see No. 11).

The best way to understand these requirements is to study what has been patented by others in a technical field of interests. For this, patent databases may be consulted (see Nos. 14–15).



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

6 See IP Advantage, WIPO's database of case studies on IP, at www.wipo.int/ipadvantage.

Utility models

Some key characteristics of utility models:

- The conditions for granting utility models are less stringent than patent requirements, as the “inventive step” requirement may be lower or absent altogether.
- Procedures for granting utility models are generally faster and simpler than patenting.
- Acquisition and maintenance fees are generally lower.
- The maximum duration of utility models is usually shorter.
- Utility models may, in some countries, be limited to certain fields of technology and may only be available for products rather than processes.
- Usually, a utility model application or a granted utility model may be converted into a regular patent application.



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 into a standard patent. The product, commercialized under the trademark Donorcare®, became a great success in domestic and foreign markets and obtained prestigious design awards.

7. 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 are excluded from patentability in many jurisdictions:

- abstractions and scientific theories;
- aesthetic creations;
- schemes, rules and methods for performing mental acts;
- substances as they naturally occur in the world;
- inventions the exploitation of which 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 that are the basis of improved functionality of a computer program may be protected by **patents**, while in others they are expressly 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 a particular country, contact the relevant national or regional patent office (see www.wipo.int/directory/en/urls.jsp 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**.

8. 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 patents, patent applications and non-patent literature of all kinds.

The definition of prior art can differ from country to country. In many countries, any information disclosed to the public anywhere in the world in written or oral form, by display or through public use constitutes prior art. As such, for example, the publication of the invention in a scientific journal, its presentation at a conference, its use in commerce or its display in a company's catalogue could thus destroy the novelty of the invention and render it unpatentable. It is therefore important to treat inventions from the outset as trade secrets and to prevent their accidental disclosure before filing the patent application. To get a reliable understanding of what is included in the prior art, consult a competent patent agent. Prior art often includes "secret prior art" such as pending unpublished patent applications, provided they are published later.

9. When does an invention 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 that particular field of technology. The non-obviousness requirement is meant to ensure that patents are granted only for truly creative and inventive achievements, and not for 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, include: 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.



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

10. What is “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, this criterion is expressed as **utility**. The utility requirement has become particularly important for patents on genetic sequences, because at the time the patent is filed it may not be known what they are useful for.

11. 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 it to be carried out by a person skilled in the specific technical field. In some countries, patent law requires the inventor to disclose 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 been a significant rise in the number of patents in the life sciences, particularly in biotechnology. Countries differ on what can be patented in this area.

Almost all countries allow patenting of inventions involving **microorganisms**, requiring the deposit of a sample of the organism at a recognized depositary institution when the microorganism is not yet publicly available and cannot be properly described otherwise. Many countries exclude **plants and animals** from patentability but allow the patenting of biological materials that have been purified and isolated from their natural environment or produced by means of a technical process. Other types of invention may be excluded, such as processes for cloning human beings or modifying the germ line genetic identity of human beings.

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

12. 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.

Importantly, a patent does not grant the owner the “freedom to use” or the right to exploit the technology covered by the patent, 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 the patent. The patent holder may therefore need to obtain a license to use other people's inventions in order to commercialize its own patented invention.

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

13. 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.

- **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 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 for its internal purposes (called “shop rights”). It is important to find out about the specific legislation in the relevant country and to ensure that employment contracts deal with issues of ownership over employee inventions to avoid possible 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 otherwise specifically agreed in writing. This means that unless the contractor has a written agreement with the company assigning the invention to that company, the company will have no ownership rights in what is developed, even if it paid for its development.

- **Joint inventors.** When more than one person contributes in significant ways to the conception 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 an invention be patented?**
Consider the 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 an informed decision is reached.
- **Is the invention patentable?**
Consider the patentability requirements, find out details of what is patentable in the country and conduct a prior art search (see No. 14).
- **Make sure you understand who has 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.
- **More information.** See IP PANORAMA Module 03, Learning Points 1–2.

How to Obtain a Patent

14. 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 the patent application, there is a serious risk that some reference, or combination of references, may render the invention non-novel or obvious and therefore unpatentable.

A prior art patentability search can prevent money being wasted on a patent application if the search uncovers prior art references that are likely to preclude patenting. A prior art search should cover both patent and 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 organized technical information which can be valuable for strategic business planning.⁷ Patents and published patent applications often provide a means of learning about current research and technological innovations long before the relevant innovative product appears on the market.

The importance of searching patent databases

Aside from revealing whether an invention is patentable, searching patent databases may provide very useful information on:

- the R&D activities of current and future competitors;
- current trends in a given field of technology;
- technologies available for licensing;
- potential suppliers, business partners or researchers;
- possible market niches at home and abroad;
- relevant patents of others to ensure that your products do not infringe them ("freedom to operate");
- expired patents that have contributed technology to the public domain; and
- possible new developments based on existing technologies.

⁷ See IP PANORAMA Module 06, Learning Point 1.

**Case study:
smart IP management –
L&R Ashbolt**

L&R Ashbolt is a highly specialized surface engineering company based in Australia whose core business consists of identifying potential cost-saving areas for companies through enhancement of the surface characteristics of components. Its clients save large sums of money by reducing wear and tear and corrosion and increasing the durability of surfaces in heavy engineering environments such as mining, paper mills, petroleum, plastic extrusion and power stations.

L&R Ashbolt has invested resources in IP and protects some inventions through patents. Still, patenting decisions should be evaluated carefully: “It is about being sensible. For example, a company should lodge a patent only in the specific countries where it will be doing business because it may be a complete waste of money lodging it around the world. You have to be sensible and realistic about where the future of the product lies,” says the company’s general manager.⁸

15. How and where can you conduct a prior art search?⁹

Patents and patent applications published by many patent offices are accessible online, making it easier to conduct prior art searches.

WIPO offers free online access to all published international patent applications processed through the PCT System, together with millions of patents from the collections of many national and regional offices, through its **PATENTSCOPE search service** at www.wipo.int/patent-scope.

Many IP offices have also made their **patent databases freely available online**. In addition, most national patent offices offer patent search services for a fee.

Access to patent information is considerably simpler thanks to the Internet. However, 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 online patent databases, most companies requiring patent information to make key business decisions (e.g., whether or not to apply for a patent) will generally rely on the services of patent professionals and/or use more sophisticated commercial databases.

⁸ See IP Advantage, WIPO’s database of case studies on IP, at www.wipo.int/ipadvantage.

⁹ See IP PANORAMA Module 03, Learning Points 2–3.

The PATENTSCOPE search service

The PATENTSCOPE search service provided by WIPO is free of charge. Its main features include:

- access to the **first publication world-wide** of PCT applications and patent documents from participating **national and regional** offices;
- **full-text search**;
- **cross-lingual search and translation tools** to allow searching of foreign language databases;
- **word stemming** (automatically generating common variants from the stem of a word, e.g., “electric, ” “electrical” and “electricity”);
- **graphical analysis** of search results;
- **national phase entry data** to track the status of an international application at the national level in specific countries;
- **embedded images**; and
- **RSS feeds** to monitor patenting activities and updates in areas of interest.¹⁰

A prior art search can be done based on keywords, patent classification or other search criteria. The prior art uncovered will depend 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 the orderly arrangement of patent documents, a basis for selective dissemination of information and for investigating the state of the art in given fields of technology. The IPC consists of **eight sections**, which are divided into **120 classes, 628 subclasses** and approximately **70,000 groups**. The eight sections are:

- Human Necessities;
- Performing Operations; Transporting;
- Chemistry; Metallurgy;
- Textiles; Paper;
- Fixed Constructions;
- Mechanical Engineering; Lighting; Heating; Weapons; Blasting;
- Physics; and
- Electricity.

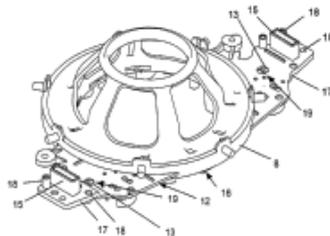
Currently, over 100 countries use the IPC to classify their patents. For more information, see: www.wipo.int/classifications/ipc.

¹⁰ RSS stands for “Really Simple Syndication” and is used to share content from a website or web log.

16. How do you 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 protection, drawings and an abstract (see No. 21). Some patent offices make it possible to submit applications through the Internet. In some countries, there may be an option for filing a “provisional” patent application that requires fewer formalities (see box after No. 20).

Patent applications are usually prepared by a patent attorney or agent who will represent your interests during the application process. The box on the next page provides a basic overview of the application process, step by step. Note that there may be important variations between countries, and it is always best to check with the national patent office or with a patent law firm in the relevant country to obtain up-to-date information on the 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

Patenting generally involves these steps:

- **Formal examination.** The patent office examines the application to ensure that it complies with the administrative requirements or formalities (e.g., that all the relevant documentation has been 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 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 their attorney) to provide an opportunity to respond to and/or remove any objections raised during the examination. This process often results in a narrowing of the scope of the patent application.

- **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 specified time limits.

Patent procedures in outline¹¹



¹¹ This is a stylized representation of the patent procedure at some patent offices. Procedures may vary among patent offices.

17. 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, the 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 the costs related to patenting, including payment of maintenance fees after the patent is granted, and to budget properly for them:

- 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 provide details of their fee structure. Some countries have discounts for SMEs and/or for online filing. In addition, some countries allow expedited examination on payment of additional fees.
- If a **patent agent/attorney** assists in the application process (e.g., to provide an opinion on patentability, draft the patent application, prepare the formal drawings and correspond with the patent office), additional costs will be incurred.
- Once a patent has been granted by the patent office, **maintenance or renewal fees must be paid**, generally on an annual basis, to maintain the validity of the patent.
- Patenting the invention abroad is likely to entail extra costs including

the **relevant foreign filing fees** for the countries in question, the translation costs and the costs of using local **patent agents** (a requirement for foreign applicants in many countries; see No. 25).

- In case of inventions involving microorganisms, where the **deposit of the microorganism** 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.



Photo: Bernard Dupont/ CC BY-SA 2.0. Maruline is a natural oil with enhanced antioxidant properties extracted from the marula tree (*Sclerocary birrea*), which grows throughout southern Africa. There is no patent on the oil itself, but the innovative process by which it is produced, known as Ubuntu, is protected. The patent is coowned by French company Aldivia and the primary African producers, who are represented by the Southern African Natural Products Trade Association.

18. When should a patent application be filed?

In general, an application for patent protection should be made as soon as all the information required to draft the application is available. In addition, there are a number of other reasons to file early:

- In virtually all countries (with, until recently, the notable exception of the United States of America;¹² see box after No. 19) patents are granted on a **first-to-file** basis. Thus, filing an application early helps to ensure that the invention is not lost to others.
- Applying for patent protection early will make it easier to get **financial support** or to **license** the invention to others.
- Generally speaking, the earlier an application is filed, the earlier the patent will be issued and the earlier the rights can be enforced; getting an application through to issuance can take a long time (see No. 22).

Nevertheless, rushing to file a patent application may also create problems:

- If the application is made too early and the invention evolves, it will generally not be possible to make significant changes to the original description of the invention.

- Once an application has been filed in one country or region, the applicant normally has **12 months** to file for the same invention in other countries in order to enjoy the benefit of the filing date of the first application (see No. 28). But filing in multiple foreign countries, especially before it is known whether the invention will be commercially successful, may be too expensive. One way of mitigating this problem is by **postponing** payment of translation and national fees for an additional 18 months by using the **PCT** (see box after No. 30).

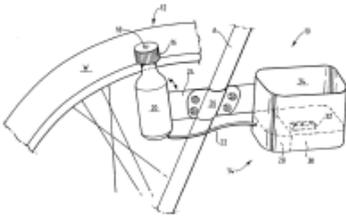
As important as any other consideration, the application should be filed **before** the invention is disclosed to anyone. Any pre-filing disclosure (e.g., for test-marketing, to investors or other business partners) should be made only after signing a confidentiality or non-disclosure agreement.

¹² The America Invents Act, enacted on September 16, 2011, changed the U.S. patent system from a first-to-invent to a first-to-file system, effective from March 16, 2013.

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

Keeping an invention **confidential** prior to filing the application is absolutely essential. In many circumstances, pre-filing public disclosure can destroy the novelty of the invention, rendering it unpatentable, unless the applicable law provides for a “**grace period**” (see No. 20).

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



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

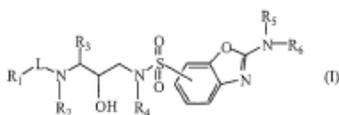
First-to-file versus first-to-invent patent systems

In almost all countries, patents are granted to the **first person to file a patent application** on an invention. A notable exception was the United States of America, where a first-to-invent system applied until March 15, 2013, under which the patent was granted to the **first inventor** who conceived and reduced the invention to practice, whether or not their patent application has been filed first. In order to prove inventorship within a first-to-invent system, it is crucial to maintain bound, duly witnessed and dated **laboratory notebooks**, which may be used as evidence in case of a dispute with another company or inventor.

20. What is a “grace period?”

The legislation of some countries provides for a “**grace period**” of six or 12 months, from the moment an invention was disclosed by the inventor or 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.

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



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

Provisional patent applications (PPAs)

In a few countries (including Australia, Canada, India and the United States of America), applicants have the opportunity to file a provisional patent application (PPA). The PPA is intended as a relatively low-cost entry point to the patent system. While details of how PPAs work vary from country to country, common features include:

- **Early priority date.** In order to obtain patent protection, the inventor who files a PPA must file a regular patent application within one year of the filing date of the PPA. That regular patent application can “claim the benefit” of the corresponding PPA, meaning that it will be treated as if it had been filed on the filing date of the PPA.
- **A relatively low-cost entry point** to the patent system. PPAs are less expensive to file, since they generally do not undergo substantive examination and need not include claims, although they do require a full description of the invention.
- **Extra time to decide if a patent makes sense.** Once a PPA is filed, the applicant has 12 months to test the idea and seek funding before filing a corresponding regular patent application. PPAs can provide significant value for start-up businesses which have something that could be protected immediately but are continuing to work on refining, perfecting and supplementing it. Protecting what they have establishes their rights before they seek outside assistance, funding or partnerships.
- **Stake a claim on your invention.** PPAs allow the term “Patent Pending” to be used on the invention or in advertisements so as to deter others from copying the invention.

However, there are also certain risks and disadvantages associated with PPAs. These include a possible increased overall cost of obtaining a patent, potential loss of trade secrets and a false sense of security.

21. What is the structure of a patent application?

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

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

Patent applications follow a similar structure all over the world and consist of a **request**, a **description**, **claims**, **drawings** (if necessary) and an **abstract**. A patent document may be a few pages or hundreds of pages long, depending on the nature of the specific invention and the technical field.

Request

The Request shows the title of the invention, date of filing, priority date and “bibliographic data” such as the name and address of the applicant and inventor.

Description

The written description of an invention must provide sufficient details so that anyone skilled in the same technical field can reconstruct and practice the invention from the description and the drawings without putting in any inventive effort. If the description falls short of this standard, the patent may be denied or may be revoked after it is challenged in court.

Claims

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

In patent litigation, interpreting the claims is generally the first step in deciding whether the patent is valid and whether it has been infringed. The advice of an expert should be sought to draft patent claims.

Example of claims

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

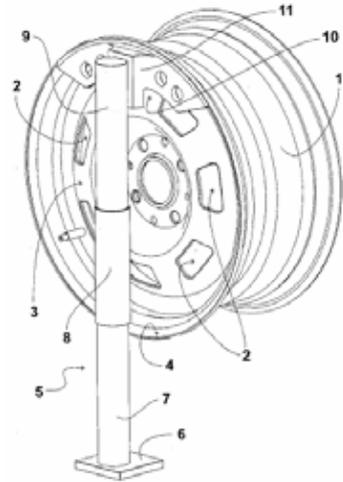
- A method of identification of a person, comprising: storing image information of at least a portion of the iris and pupil of the person's eye; illuminating an eye, of an unidentified person having an iris and a pupil; obtaining at least one image of at least the same portion of the iris and pupil of 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.
- 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 are usually not required. If drawings are required, formal rules govern their acceptability.

Example of a drawing



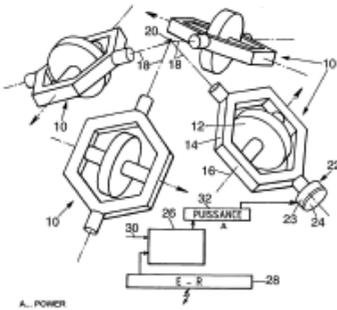
Patent No. DE10230179 for a jack or "Tire release device." The invention provides a novel jack for lifting spring-mounted wheels of a vehicle. It uses a support structure (11) that engages with the outer rim (4) of the wheels (1). The jack directly moves the wheels, and not the body, of the vehicle. Therefore, less 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 can sometimes be improved or drafted by the patent examiner in the relevant patent office.

22. How long does it take to obtain patent protection?

The time for processing a patent application varies significantly from country to country and between fields of technology and may range from a few months to a few years – generally from two to five years. Some patent offices have established a procedure for accelerated examination 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 actuators.

Proofreading a granted patent

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

23. When does patent protection begin?

Patent rights are effective from the date of **grant** of the patent. In some countries, infringers may be sued at that time for infringement that occurred since the date of publication of the patent application (generally **18 months** after filing). But this is not the case in all countries (see Nos. 40–43).

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 granted.

24. How long does patent protection last?

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

While this defines the legal life of a patent, the **business or economic life of a patent** is limited by the commercial success of the covered technology. It often turns out that an apparently valuable invention has become obsolete or cannot be successfully commercialized for some other reason. In such circumstances, the patent holder may decide to stop paying maintenance or renewal fees, leaving the patent to expire earlier and allowing the product or technological innovation to fall into the public domain.

In some countries, protection may be extended beyond 20 years, or in very specific circumstances a **Supplementary Protection Certificate (SPC)** may be granted. Such extensions are typically available for patents suffering from delayed commercialization resulting from the time required to obtain marketing approval from the appropriate governmental authorities (e.g., pharmaceuticals or agrochemicals). 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 or its innovative features. They may also affect the remedies available for infringement, depending on the law of the country where enforcement is sought.

25. Is a patent agent needed 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 involves:

- making a **search** to identify any prior art that may render the invention unpatentable (this step is often desirable but not required as a patent office that does substantive examination will conduct its own search);
- writing the **claims** and a full **description** of the invention that may combine legal and technical terminology;
- **corresponding** with the national or regional patent office, especially during the substantive examination of the patent application; and
- making **amendments** to the application as requested by the patent office.



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

All these aspects require in-depth knowledge of patent law and patent office practice and a full understanding of the invention. Therefore, **even if legal or technical assistance is generally not mandatory, it is strongly recommended.** The assistance of a patent agent who has both the relevant legal knowledge and experience and a technical background in the field of the invention should be relied upon. Most laws require foreign applicants to be represented by a registered patent agent who is resident in the country.

Dedicating a staff member to manage the business's IP assets

Depending on the size of the business, it may be beneficial to have an in-house patent supervisor or coordinator to manage the business' patents in addition to an outside patent agent. Such a person should handle coordination with outside experts while ensuring best practices are uniformly followed within the business. These include maintaining necessary secrecy of the patent application and related information, informing employees of their role in protecting IP, and coordinating patent efforts with the company's other IP assets such as trade secrets, trademarks and copyright.¹³

¹³ See IP PANORAMA Module 03, Learning Point 4.

26. Is it possible to seek protection for multiple inventions through a single application?

Most patent laws limit the number of different inventions that may be included in one patent application. These include the so-called requirement of **unity of invention**. While some countries (for example, the United States of America) enforce this requirement rather strictly, others (e.g., the European Patent Convention) 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 (creating “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. When filing under the PCT, it is common to link groups of inventions according to the European approach, and to divide the application as necessary after entering the national phase.

Summary checklist

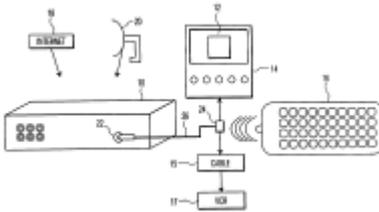
- **Is the invention patentable?** First, review the list of what can and cannot be patented and determine if the invention falls into one of those categories. Second, conduct a **prior art search** and make good use of patent databases.
- **Filing a patent application.** Consider using a patent agent/attorney with expertise in the relevant field of technology, particularly for drafting the claims.
- **Timing of application.** Consider carefully the best timing for filing the patent application and pay close attention to the required filing dates.
- **Do not disclose information** too early in order not to compromise its patentability.
- **Maintenance fees.** Remember to pay **maintenance or renewal fees** in time to maintain the patent(s) in force.
- **More information.** See IP PANORAMA Module 03, Learning Point 2 and Module 06, Learning Points 1–3.

Patenting Abroad

27. Why apply for foreign patents?

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

Patent protection in foreign countries enables the patent owner to enjoy exclusive rights over the patented invention in those countries. In addition, the owner may be able to license the invention to foreign firms, develop outsourcing relationships and access those markets in partnership with others.



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

28. When should an application be made for patent protection abroad?

The date of the first application for a given invention is called the **priority date**. Any subsequent applications in other countries filed within **12 months of that date** (i.e., within the **priority period**) will benefit from this priority date. This means that the first application will have priority over other applications for the same invention filed by others after that date. It is critical that foreign patent applications be filed within the priority period or under the PCT by that time – filing under the PCT will give an additional 18 months to decide whether to enter the national phase in any PCT member country.

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), it is still possible to apply for protection for the same invention in other countries, but priority from the earlier application cannot be claimed. **Once the invention has been disclosed or published, it may not be possible to obtain patent protection in foreign countries** due to loss of novelty. See also the discussion of grace periods, No. 20.

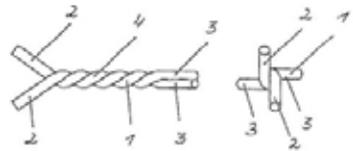
Case study: international IP protection – Somatex

Formed in Germany in 1992, Somatex Medical Technologies GmbH specializes in the development, manufacturing and sale of innovative and high-quality disposable instruments for medical procedures. Somatex's products are particularly used in interventional radiology, a field in which minimally invasive operations are performed using image guidance from technologies such as magnetic resonance imaging (MRI), which allow doctors to see pictures of the internal structure of the body.

Aware of the importance of IP management, Somatex adheres to the principle of filing a patent application before starting to promote a new product. However, Somatex believes that not all technical innovations must be patented. Depending on the market opportunities and the risks associated with new developments, each individual case is assessed as to whether it is more profitable to maintain confidentiality and enter into secrecy agreements or to file a national/international patent application.

Most innovations for which Somatex does seek IP protection are protected at the national level. However, Somatex believes that patent applications are indispensable for its new internationally marketed products. If patent protection is sought for an invention, Somatex always files a national application at the German Patent and Trademark Office first and then files PCT or European Patent Office (EPO) applications.

Ensuring IP protection for its major domestic and international products has helped Somatex to continuously innovate and expand its business. In 2014, the company founded a subsidiary, SOMATEX® HK Ltd, to strengthen its presence in Asian markets. Though the market for disposable medical equipment is dominated by large international corporations, Somatex's strategy has proven that an SME can be successful through innovation and IP protection.



PCT application PCT/EP2003/012888, a cement injections system used to anchor artificial joints, has been an internationally successful product for Somatex.¹⁴

¹⁴ See IP Advantage at www.wipo.int/ipadvantage.

29. Where should an invention be protected?

Because obtaining foreign patents is expensive, companies should carefully select the countries in which they require protection. Consider these key questions:

- Where is the patented product likely to be commercialized?
- What are the main markets for similar products?
- What are the costs involved in patenting in each target market?
- 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, a new process for treating linenized cork, underpins 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.

30. How can an application for patent protection abroad be made?

There are three main ways of filing for foreign patents:

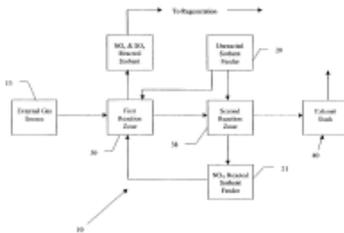
The national route. Apply to the national patent office of each country of interest by filing a patent application in the required language, complying with the national formality requirements and paying the required fees. This path may be very cumbersome and expensive for multiple countries.

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

- the African **Intellectual** Property Organization (OAPI) (www.oapi.wipo.net);
- the African **Regional** Industrial Property Organization (ARIPO) (www.aripo.org);
- the Eurasian **Patent** Organization (EAPO) (www.eapo.org);
- the European **Patent** Office (EPO) (www.epo.org);¹⁵ and
- the Patent Office of **the** Cooperation Council for the Arab States of the Gulf (GCC Patent Office) (www.gccpo.org).

¹⁵ For more information about the unitary patent, see <https://www.epo.org/law-practice/unitary.html>.

The international route. If a company wants to have the option of protecting an invention in the member countries of the PCT, it should consider filing a PCT application. To do so, at least one inventor must be a national or resident of a PCT Contracting State, or the business must have an effective industrial or commercial presence in one of these countries. By filing one international application under the PCT, the applicant may later seek patent protection in any of the 150+ member countries.¹⁶ This application may be filed at the relevant national or regional patent office and/or at the PCT receiving office at 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. Using 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 patent rights apply only in the country where they were obtained.
- **Priority period.** Make use of the priority period to apply for protection abroad but pay careful attention to deadlines and to the need for secrecy before filing.
- **Where to apply.** Consider where it will be most beneficial to have protection, taking into account the costs of patenting in various countries.
- **How to apply.** Consider using the PCT to facilitate the application process, gain time and receive valuable patentability information to help inform decisions about where to apply for patent protection.
- **More information.** See IP PANORAMA Module 09, Learning Points 2–4.

¹⁶ A list of member countries is available at www.wipo.int/pct/en/pct_contracting_states.html.

Advantages of the PCT

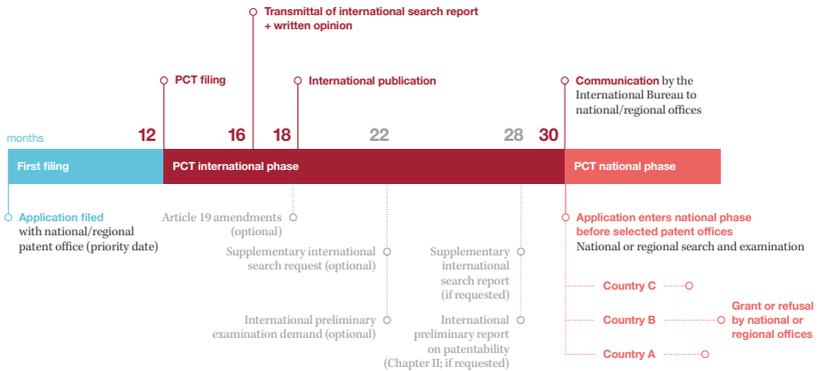
The PCT provides at least **18 additional months** on top of the 12-month priority period during which applicants can explore the commercial potential of their product in various countries and decide where (and whether) to seek patent protection. Payment of the fees and translation costs associated with 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 to make their decisions about whether and where to pur-

sue patent protection. The International Search Report contains a list of prior art documents 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 has legal effect in all designated 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 national patent offices and at www.wipo.int/pct.

Outline of the PCT Application Process



Commercializing Patented Technology

31. How can patented technology be commercialized?

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 product or technological innovation. In order to provide a tangible benefit, a patent needs to be exploited effectively, and will generally make money only if the relevant product or process is successful. To take a patented invention to market, a company has a range of options:

- commercialize the invention directly;
- sell the patent to someone else;
- license the patent rights to others; or
- establish a joint venture or other collaboration with others who have complementary assets.

32. How do you take a patented product to market?

The commercial success of a new product does not hinge only 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 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 the company's patents and patent strategy in the business plan is important, as this indicates the novelty of the company's products, provides evidence of due diligence and identifies the risk of infringement of other companies' patents.

33. Can a patent be sold?

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

Licensing a patent instead of assigning it means that the rights are "rented" to others in return for royalty payments. Licensing can be a very financially rewarding strategy for that reason. **Assignment**, on the other hand, commonly means that an agreed-upon payment is received 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, the value is received immediately, without having to wait up to 20 years to realize that value progressively. The risk of the patent being superseded by another technology can also be

avoided. In addition, assignment of the patent to a start-up company may be a precondition for funding, if the patent does not belong to the company.

In each case, it is a decision based on the needs and priorities of the company. A patent attorney should be consulted for advice as to which approach best fits the company's business strategy.

34. How is a patent licensed?

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 **license agreement** is generally signed between the two parties, specifying the terms and scope of the agreement.

Authorizing others to commercialize the patented invention through a licensing agreement will enable the 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.

It is advisable to seek the assistance of a licensing practitioner in negotiating the terms and conditions and drafting the licensing agreement, as this requires skill and knowledge. In some countries, license agreements need to be registered with a government regulatory authority.

License out, license in or both?

SMEs lacking resources for R&D, production or marketing can take advantage of the "open" innovation model (see box after No. 1) by considering opportunities to license in or license out their inventions. Licensing out simply means a business licenses its own invention to other businesses; licensing in is the exact opposite, where a business agrees to use another business's invention.

Licensing out

Benefits

- Retention of ownership
- Involvement in future developments
- No involvement required to manufacture
- New channels to market
- Turns a potential infringer/competitor into an ally.

Drawbacks

- Limited return if a larger profit could be made by the business taking the invention to market itself
 - May create a potential competitor if using a sole license or a non-exclusive license
 - Future obligations if the technology is incomplete
 - Critically dependent on the licensee if the licensee is the sole source of profit.
-

Licensing in

Benefits

- May be able to reach the marketplace faster
- Limited R&D can save costs
- Merging technologies to create stronger services and more products.

Drawbacks

- Technology may not be finalized
 - Additional costs if the market cannot handle the price that will need to be charged
 - Too reliant on technologies developed outside the business.
-

35. What royalty rate can be expected?

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

While standards for royalty rates exist in some industries and may usefully be consulted, remember that most license agreements are unique and the royalty rate will depend on the particular factors of the underlying business. Therefore, industry standards may sometimes be unhelpful, or even misleading.

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 percent royalties on net sales. The licensee will also bear the patent filing and maintenance costs.

36. What is the difference between an exclusive, non-exclusive and sole license?

There are three types of license agreements, depending on the number of licensees that will be allowed to use 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.

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



A 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.

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

It depends on the product and on the company's business strategy. For example, if the 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 the product needs one company to invest heavily to commercialize the product (e.g., a pharmaceutical product that requires investment in performing clinical trials), a potential licensee will not want to face competition from other licensees and may rightly insist on obtaining an exclusive license.

38. When is the best time to license an invention?

There is no best time to license an invention, as the timing will depend on a variety of factors. 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 can be used 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 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 for accounting, 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 widely used:

- **Income method:** focuses on the income stream that the patent holder expects during the lifetime of the patent.
- **Cost method:** calculates the cost of developing a similar asset either internally or externally.
- **Market method:** looks at comparable transactions made in the market.
- **Option-based methods:** employs models 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.¹⁷

¹⁷ See IP PANORAMA Module 11.

39. How can permission be obtained to use a competitor's patent?

This may not always be easy or affordable. However, if the competitor is also interested in the patents of the company, **cross-licensing** may be considered. **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 often seek to ensure their **freedom to operate** by granting rights to their patents in return for the grant of similar rights by competitors.

Summary checklist

- **Commercialization.** Consider the different options for commercializing the invention and make sure to put in place a convincing business plan.
- **Licensing.** Royalty rates and other features of license agreements are a function of negotiation, so expert advice should be sought.
- **Exclusive versus non-exclusive.** Consider exclusivity of license rights in the light of the maturity of the technology and the company's business strategy.
- **Cross-licensing.** Consider whether the patent(s) can be used to access useful technology owned by others.
- **More information.** See IP PANORAMA Module 06, Learning Point 4 and Module 07.

Enforcing Patents

40. Why should patent rights be enforced?

If a new patented technology is brought to market, competitors may try to make products with technical features that are identical or very similar to that product. Not having had to spend the same resources or take the same risks, competitors would have an advantage and be able to make a similar or identical product at a cheaper price. That could put unfair competitive pressure on the patent-owning business.

The rights granted by a patent give the owner the opportunity to prevent or stop competitors from infringement and to seek compensation for damages. To prove that infringement has occurred, it must be shown that every element of a given claim, or its equivalent, is contained in the infringing product or process. Enforcing rights may be crucial to maintaining competitive edge, market share and profitability.

Patent risk management

Enforcing patents is just one aspect of business risk management, protecting the time and money that has been invested in R&D of the innovative technology. Preparing a strong strategy before infringement happens can minimize the costs of enforcement later.

1. Decide who will have overall responsibility for managing the company's patent portfolio.
2. Build a system to ensure that all inventions are disclosed to an authorized individual or office within the company and which ensures a decision is made as to whether these should be kept as trade secrets, defensively published or protected through patents.
3. Undertake a risk analysis to decide whether a patent information search should be carried out before a patent application is filed and, if so, what it should entail.
4. Determine if the patent, when granted, will be used (a) offensively, (b) defensively or (c) mainly for branding/marketing.
5. Identify partnering or licensing-in opportunities.
6. Regularly update the enterprise's documented inventory of owned and in-licensed patents.
7. Undertake periodic risk analysis by looking at the patent portfolios and patent strategies of competitors.
8. Develop a financial strategy to cover all the costs of creating, maintaining, using, enforcing and defending the patent portfolio.
9. Periodically revisit and revise the patent strategy as part of a periodic or event-driven IP audit.

41. Who is responsible for enforcing patent rights?

The main responsibility for identifying and taking action against infringers of a patent lies with its owner. Of course, educating employees on how to identify infringers can help a business in monitoring the marketplace. Nevertheless, a patent owner is responsible for monitoring the use of its 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.

A patent lawyer should be contacted to assist in enforcing the patent, both domestically and in foreign markets. A lawyer will also be able to advise on the costs and risks involved and the best strategy to adopt.

Case study: enforcing a patent – Ananda Computers

Although Bangla, the national language of Bangladesh, is the seventh most spoken language in the world, there was no well-functioning, simple and easy-to-use software for typing in this language until the late 1980s. Mustafa Jabbar, a Bangladeshi journalist, saw the potential and took the initiative to develop the software and appropriate Bangla keyboard layout, which changed the printing and publishing industry in Bangladesh.

Mr. Jabbar wanted to overcome many of the limitations associated with the existing options by developing a new Bangla interface with a new layout. Success came after one-and-a-half years of continuous work, and the first edition of Bijoy was released in December 1988. The keyboard layout and font designs were created by Mr. Jabbar himself while the software programming was done by an Indian programmer.

Soon after the development of Bijoy, Mr. Jabbar established his own company, Ananda Computers, and has continued to improve Bijoy and develop new software. The first edition of Bijoy was developed only for use in Macintosh computers. A Windows-compatible Bijoy came to the market in 1993. A group of programmers and researchers are dedicated to regularly improving the Bijoy software under the guidance of Mr. Jabbar.

The second edition of the Bijoy keyboard and the script interface system for typing in Bangla was patented under Bangladeshi patent law. The popularity and practicability of Bijoy resulted in rampant piracy of the software, and huge numbers of keyboards with the Bijoy layout were imported from abroad. The National Board of Revenue (NBR) of Bangladesh examined this issue following an application by Mr. Jabbar. In 2008, after assessing and confirming that Mr. Jabbar was the patent owner of the Bangla printed keyboards, the NBR issued a circular asking the customs department to prohibit and confiscate the import of pirated Bijoy software and Bijoy keyboards.¹⁸



Bijoy keyboard layout (Photo: Ananda Computers)

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

If the patent owner believes that others are using their patented technology without authorization, then as a first step information must be collected as to who is infringing, how they are doing it and the effect of the infringement on the patent owner's business. A patent lawyer should be engaged to assist in analyzing this evidence and deciding what to do about the infringement.

In some cases, patent owners choose to send a letter (commonly known as a **“cease and desist letter”**) informing the alleged infringer of a possible conflict between their rights and the other company's business activity. This procedure is often effective in the case of non-intentional infringement, since the infringer will 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 may 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 at their business premises, often with the help of the police. The court may order the alleged infringers to stop their infringing action pending the outcome of a trial (which may take months or years). However, the question whether a patent has been infringed may be very complex and the court may decide that the matter must await a trial on the merits.

18 See IP Advantage at www.wipo.int/ipadvantage.

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

The infringer may be compelled by the court to identify the persons involved in the production and distribution of the infringing goods or services and their channels of distribution. As an effective deterrent to infringement, the court may also order, upon the patent holder's request, that infringing goods and materials be destroyed or disposed of without compensation.

In order to prevent the **importation of infringing goods**, measures at the international border may be available in some countries through the national customs authorities. However, many countries provide such measures only in cases of importation of counterfeit trademark goods and pirated copyright goods.

As a general rule, if infringement is identified, professional legal advice should be sought.

43. What are the options for settling an infringement claim out of court?

If there is a contract (e.g., a license agreement) with the infringer, first check whether there is a clause calling for mediation or arbitration. These are alternative and often less costly forms of dispute resolution than suing in court. Even if there is no such clause in the contract, or no contract at all, it may still be possible to take advantage of these private procedures, so long as both parties agree to submit to such a procedure.

Arbitration is generally shorter and less expensive than court proceedings and, if the other party is foreign, an arbitral award is more easily enforceable internationally. An advantage of mediation is that the parties can keep the process informal and find an agreed solution that takes account of their interests. As such, it can help to preserve good business relations. The **WIPO Arbitration and Mediation Center** provides non-profit services for alternative dispute resolution. More information on arbitration and mediation can be found at: www.wipo.int/amc.



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 of the United Kingdom. Following the launch of an infringing product by a competitor, Ms Haberman obtained an injunction preventing further infringement of the patent and eventually settled the matter out of court. She initiated more legal proceedings in Europe and the United States where the validity of her patents were confirmed, resulting in more companies requesting licenses. Ms. Haberman considers her patents to be central to the success of her business strategy.

Summary checklist

- **Be vigilant.** Monitor the competition to detect possible infringement.
- **Risk management.** Strategically manage patents to minimize risks and maximize profits.
- **Seek advice.** Consult a patent attorney before taking any action in response to suspected infringement.
- **Alternative dispute resolution.** Consider ways of settling disputes out of court by including mediation and/or arbitration clauses in any license agreement.
- **More information.** See IP PANORAMA Module 03, Learning Point 3.

Annexes

Annex I – Useful Websites

For more information on:

IP issues from a business perspective
www.wipo.int/sme

Patents in general
www.wipo.int/patents

The practicalities of filing patent applications, see the list of websites of national and regional patent offices at
www.wipo.int/directory/en/urls.jsp

Patent Cooperation Treaty (PCT)
www.wipo.int/pct

International Patent Classification
www.wipo.int/classifications/ipc

WIPO Arbitration and Mediation Center
www.wipo.int/amc

WIPO's global collections of searchable IP data
www.wipo.int/reference

Membership of WIPO-administered treaties
www.wipo.int/treaties

Exchanging Value: Negotiating Technology Licensing Agreements – A Training Manual, WIPO publication no. 906:
www.wipo.int/sme/en/documents/guides/technology_licensing.html

Successful Technology Licensing, WIPO publication no. 903:
www.wipo.int/publications/en/details.jsp?id=296

Annex II – Glossary

Term	Explanation*	Selected references
Art	Known subject matter in the field including issued patents, publications and knowledge deemed to be publicly available such as trade skills, trade practices and the like (see also prior art).	8, 9, 14-16
Best mode requirement	The requirement for a patent applicant to disclose the best method they know of performing the invention at the time of filing the application. Some countries have such a requirement. See also disclosure requirement .	11
Cease and desist letter	A letter from an IP owner or their attorney which requests that alleged infringement be stopped immediately or else legal action will be taken.	42
Claims	Numbered statements at the end of a patent which define the invention for which patent protection is sought. In general, the claims must be clear, concise and fully supported by the description.	16, 20 (box), 21
Cross-licensing	Cross-licensing occurs when companies exchange rights to use certain patents owned by each other. Often, the patents that each company owns cover different aspects of a commercial product. By cross-licensing, each company is free to bring the product to market. A cross-license may or may not involve payment by one side to the other to “balance” the value of rights transferred.	3, 39
Confidentiality agreement	Also known as non-disclosure agreement (NDA) . A contract in which one or both parties agree not to disclose certain information and/or to use the information for a limited purpose.	4, 18
Defensive publication	Also known as defensive disclosure . An IP strategy to ensure that third parties do not gain patent rights over an invention. It involves publishing a description and/or drawing of the invention so that it becomes prior art, thus preventing others from patenting the invention.	5 (box)

Description	Also referred to as the specification . The part of a patent application that discloses the invention in a manner sufficiently clear and complete to enable a person skilled in the technology to understand the claimed invention and practice it without undue experimentation. The description forms the basis for the claims which define the legal boundaries of the invention. The description can cover subject matter broader than the claims, but the claims may never be broader than the description.	21
Disclosure	Disclosure can refer to either: 1. sufficient disclosure of an invention as a requirement for patentability (see next entry); or 2. pre-filing public disclosure, which can destroy the novelty of an invention, rendering it unpatentable.	5 (box), 8, 11, 18-20
Disclosure requirement	Patent law imposes a general obligation on applicants to disclose the invention in a manner sufficiently clear and complete to enable a person skilled in the technology to understand the claimed invention and practice it without undue experimentation. In some countries, the patent laws also require disclosure of the inventor's "best mode" of making or practicing the invention.	11
Drawing	Illustrations in a patent application which may be necessary or helpful to understand the invention.	21
European Patent Convention (EPC)	A treaty instituting the European Patent Organisation (EPOrg) and providing an autonomous legal system according to which European patents are granted. However, after grant a European patent is not a unitary right, but a group of essentially independent, nationally enforceable, nationally revocable patents. More information at www.wipo.int/wipolex/en/other_treaties/details.jsp?group_id=21&treaty_id=226 .	26, 30
Exclusive right	A right given to a patent owner (or to any party to whom they transfer ownership) to prevent others from making, using, selling, offering for sale or importing for those purposes their invention without their consent for a limited period of time.	1, 3, 12

First-to-file	A system in which the first person to file a patent application will be awarded a patent, if more than one person files a patent application claiming the same invention.	18, 19 (box)
First-to-invent	A system in which the first inventor who conceives and reduces the technology or invention to practice is entitled to patent protection, if more than one person files a patent application claiming the same invention. The United States of America continues to employ a first-to-invent system for patent applications filed on or before March 15, 2013. As of March 16, 2013, it implemented a first-to-file system similar to most other countries.	18 (footnote 12), 19 (box)
Freedom to operate (FTO)	The condition in which a particular action, such as testing or commercializing a product, can be done without infringing valid patent rights of others.	14 (box)
Grace period	The legislation of some countries provides a grace period of six or 12 months, from the moment an invention is disclosed by the inventor or applicant until the application is filed, in which the invention does not lose its patentability because of such disclosure. The grace period will not provide an applicant with an earlier priority date.	19, 20
Industrial applicability	One of the criteria of patentability, requiring that the invention can be made or used in some kind of industry, understood in its broadest sense. In some countries, instead of industrial applicability, utility is required.	10
Intellectual property (IP)	IP refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images and designs used in commerce.	4
International patent application	An application for the protection of an invention filed under the Patent Cooperation Treaty (PCT).	30
International Patent Classification (IPC)	A hierarchical system in which the whole area of technology is divided into a range of sections, classes, subclasses and groups for the classification of patents and utility models. The IPC is an indispensable tool for the retrieval of patent documents in the search for prior art. More information at www.wipo.int/classifications/ipc .	15 (box)
Invention	A solution to a specific problem in the field of technology. An invention may relate to a product or a process.	2

Inventive step	Also called non-obviousness . One of the criteria of patentability, requiring that the invention would not have been obvious to a person having ordinary skill in the relevant technical field.	1, 6, 9
Licensing agreement	A contract between a patent rights owner (licensor) and another (licensee) who is authorized to use such rights, under the agreed conditions, for example in exchange for some consideration, usually a payment (fee or royalty).	3, 33-35, 39
Non-disclosure agreement (NDA)	See confidentiality agreement .	4, 18
Non-obviousness	See inventive step .	1, 6, 9
Novelty	One of the criteria of patentability, requiring that the invention be new in comparison to the prior art. When the invention can be found in a single prior art reference, it is said to have been “anticipated.” Novelty is not something which can be proved or established; only its absence can be proved.	6, 8, 19, 28
The Paris Convention for the Protection of Industrial Property	Administered by the World Intellectual Property Organization (WIPO), the Paris Convention is the first major international agreement relating to the protection of industrial property rights, including patents. For example, it provides rules that help the people of one country obtain protection in other countries for their intellectual creations and the right of priority (see priority right). More information at www.wipo.int/treaties/en/ip/paris/index.html .	
Patentable subject matter	The scope of technology for which a country’s law allows patent protection. In general, patentable subject matter is established by statute and is often defined in terms of exceptions to patentability, the general rule being that protection is available for inventions in all fields of technology.	6, 7
Patent	A document issued upon application by a government office (or a regional office acting for several countries) which describes an invention and grants a time-limited exclusive right to make, use or sell a product or process.	1

Patent application	An application for the protection of an invention submitted to a patent office. An application consists of a request, a description of the invention, one or more claims, one or more drawings (where necessary) and an abstract. The term may also refer to the process of applying for a patent.	5, 8, 11, 14,15, 16, 18,19, 21, 25, 26, 28
Patent Cooperation Treaty (PCT)	An international treaty administered by the World Intellectual Property Organization (WIPO). The PCT is a system facilitating the worldwide filing of patent applications, giving patent applicants more time to decide in which countries they ultimately want to seek patent protection. The PCT permits filing a single “ international application ” and preparation of a search report and opinion (by one of the major patent offices designated as an “International Authority”) reflecting the likelihood of patentability. The applicant can then make an informed decision whether and where to file for a national patent. It is only at this time that translations of the application and payment of local fees are required. Patents resulting from a PCT application are national patents, granted by the competent local patent offices according to local patent laws. But each member country must recognize the applicant’s original filing date for the purposes of establishing priority, including the determination of what prior art applies to the patentability analysis. More information at www.wipo.int/pct .	27-30
Patent information	The technical and legal information contained in patent documents that are published periodically by patent offices. About two-thirds of the technical information revealed in patents is never published elsewhere. This makes patent information the single most comprehensive collection of classified technological data.	14-15
PATENTSCOPE	A free online search system including all PCT applications as well as patent documents published by participating national and regional offices. More information at www.wipo.int/patentscope .	15

Person skilled in the art	A hypothetical person considered to have the normal skills and knowledge in a particular technical field without being considered a genius. In most patent laws, the person skilled in the art is used as a reference for determining, or at least evaluating, whether an invention involves an inventive step and is sufficiently disclosed in the description of the patent or patent application.	9, 11, 21
Prior art	All the relevant knowledge that existed prior to the priority date of a patent application. In some countries there is a differentiation between printed publications, oral disclosures and prior use, and where the publications or disclosure occurred. Novelty and inventive step must be assessed in view of the prior art.	15
Priority date	Also referred to as the effective filing date . It is the filing date of the earliest application of which priority is claimed. The date is particularly important to determine relevant prior art for evaluating novelty and inventive step.	21, 28
Priority right	A time-limited right, triggered by the first filing of an application for a patent. The effect of the right of priority is that any subsequent filing of a patent application for the same invention in certain other countries before the expiration of the priority period shall not be invalidated by reason of any acts accomplished in the interval, for example another filing. When filing the subsequent application, the applicant must “claim the priority” of the first application in order to make use of the right of priority. The basis for priority rights is Article 4 of the Paris Convention.	21, 28
Provisional patent application (PPA)	A PPA can be thought of as a “temporary lower-cost first patent filing.” It contains only a portion of the information required in a regular patent application and lets the applicant secure an initial filing date quickly. The key word in PPA, however, is provisional. A regular patent application must be filed within one year or the application will be deemed abandoned.	16, 20 (box)

Publication	Publication may take place at different stages of the procedure. In some countries, the patent document is only published once a patent has been granted. In other countries, patent applications are published generally after 18 months from the filing date or, where priority has been claimed, the priority date. The publication of a patent application marks the date at which it becomes available to the general public.	5 (box), 16 (box), 23
Public domain	In general, an invention or creative work is considered to be in the public domain if there is no legal restriction on its use by the public.	5 (box), 14 (box), 24
Regional patent application	An application for the protection of an invention filed with one of the regional patent offices.	30, Annex III
Royalty	A form of compensation based on a percentage of revenue or unit sales generated under an agreement, typically a licensing agreement.	33, 35
Territorial right	A right that can only be enforced in countries or regions where the right has been established and is in force.	1
Unity of invention requirement	Under most patent laws, each application should relate to only one invention; including multiple inventions in a single application is only permitted if all are so linked as to form a single general inventive concept. The requirement seeks to avoid the filing of one patent application for several inventions while paying only one set of fees. Unity of invention also makes the classification of patent documents easier.	26
Utility	One of the criteria of patentability used in some countries instead of industrial applicability . An invention is considered useful if it performs the function specified and provides some identifiable benefit.	10
Utility model	Also referred to as short-term patent , petty patent or innovation patent . Utility models are a special form of IP rights for inventions granted by some countries to an inventor or their assignee for a limited period of time. The term of protection is shorter than that for a normal patent, and the conditions for grant are less stringent. Utility models may be an important alternative to patents in the countries where they are available.	4, 6 (box), 23

* The explanations given here relate specifically to patent law.

Annex III – Patent Myths and Misunderstandings

I can get a patent for an idea.

An **idea** cannot be patented, because it is just a statement of the problem that needs to be solved and implemented technically (see No. 1). For example, you can say to yourself: “Wouldn’t it be great if my washing machine could wash my clothes without water and thus be more environmentally friendly?” At this point, you do not have an invention, merely the identification of a need or problem. An **invention** is a solution to that problem (see No. 2). You must design a washing machine that allows effective washing without using water. Inventions describe a tangible thing well enough so that someone else could build it.

You cannot patent an idea or suggestion for a new process, machine, manufacture, etc. You can only patent the actual invention, and you must provide the patent office with a complete technical description of the actual operation of the invention (see No. 11).

Ideas may be taken by others, so it is wise to keep your idea secret or share it only in confidence until you develop it into an invention and file a patent application. If you need to express your idea to another party, you should first ask them to sign a confidentiality agreement (see box after No. 5).

I should file a patent before I’m done turning my idea into a workable invention.

Patenting should always be considered at the proper time. Before filing a patent application, take the following steps:

- Determine the technical feasibility and implementation of your idea through to the invention stage.
- Evaluate the invention for its commercial potential, i.e., decide whether the invention is likely to be valuable enough to justify the time, effort and expense involved in applying for a patent and following it through to grant (see No 5).
- Make a patentability search (see Nos. 6, 14 and 15).
- Collect and collate all the information that is required to draft the application (see No. 18).

Once I have filed the patent application, my invention will be protected by a patent immediately.

An invention is fully protected only from the date the patent is *granted* and not the date on which it is *filed* (see No. 23). Also, there is no guarantee that a patent will be granted, because the patent office may deny your application for a number of reasons – for example, if the claimed invention does not meet the patentability requirements (see No. 6) or if someone else has already disclosed it to the public, such as by publishing a paper about it (see No. 19). However, in some countries there is “provisional protection” – rights conferred to a patent application that has been published but not yet granted.

The grant of a patent means the government has certified that the invention will work or is commercially viable.

The government does not get involved in testing an invention to see if it works and/or is commercially viable. Some patent offices only verify the formal documents and whether the claimed invention is statutory subject matter. While the patent office reviews applications to ensure they meet administrative and, in some countries, patentability requirements, it does not build the proposed invention to verify its functionality (see No. 16 for more information on the patent examination process).

A patent will make me rich.

There is no guarantee that a patented invention will sell. In fact, over 90 percent of patents do not generate any income. This is so for a variety of reasons, such as inadequate assessment of the commercial potential or insufficient promotion and advertising of the invention. Since there are many costs associated with patenting an invention and even more in taking it to market, it is important to do a cost/benefit analysis prior to investing in protecting your invention by a patent (see Nos. 17, 31 and 32).

A patent gives me the right to make, use and sell a product covered by my invention.

A patent only enables its owner to exclude others from making, using and selling exactly what is covered by their patent claims. A holder of a prior patent with broader claims may prevent the inventor whose patent has narrower claims from using the inventor's own patent (see No. 1).

I must get a patent to maximize the value of my invention.

Not necessarily. In fact, depending on the nature of the invention, there may be other forms of legal protection that are better suited to your business strategy, such as utility models or trade secrets (see No. 4). But given the many benefits of a patent, you should do a cost/benefit analysis prior to filing a patent application, taking into account the time and cost of making periodic payments for its maintenance (see No. 3).

Once my invention is patented, the patent office will prevent others from infringing it.

The patent office does not enforce your patent rights. It is your responsibility as the owner of a patent to monitor and enforce your rights (see No. 41). This may require you to take legal action for infringement in a national court.

If I get a patent in my country, my patent rights are enforceable worldwide.

At present, no “world patents” or “international patents” exist that create one unitary patent right for the whole world.

In general, an application for a patent must be filed, and a patent granted and enforced, in **each country** in which you seek patent protection for your invention, in accordance with the law of that country. However, there are some **regional patent offices**, for example the European Patent Office (EPO) and the African Regional Intellectual Property Organization (ARIPO), which accept regional patent applications or grant patents which have the same effect as applications filed, or patents granted, in the member States of that region (see Nos. 27–30). The term “**European Patent**” is only a short-form designation for a bundle of national and territorial patent rights resulting from a facilitated application under the European Patent Convention (EPC). This stands in contrast to existing regimes in the European Union regarding the so-called “Community trademark” and the “Community design” (and a pending regime that would establish a “Community patent”), which do create one unitary intellectual property right for the territory of the European Community.

Further, any resident or national of a Contracting State of the Patent Cooperation Treaty (PCT) may file an **international application** under the PCT. This system allows that application to have the same effect as national applications filed in each Contracting

State of the PCT (see No. 30). The PCT international filing system does not result in an “international” patent, but provides a process for obtaining patents in multiple countries. Patents resulting from a PCT application are national/regional patents, granted by the competent local patent office according to local patent law. However, since all these patents are based on substantially the same application for the same invention, the claims and other content of PCT-based patents will generally be substantially similar (subject to modifications in the course of the prosecution in the national phase).

It is advisable to protect your invention in every country where the product is manufactured, distributed and sold, or the process is used, and these regional and international systems for filing patents can facilitate and streamline multinational filings.

Procedural and substantive requirements for the grant of patents as well as the amount of fees required are different from one country/region to the other. It is therefore recommended that a patent agent or attorney or the intellectual property offices of those countries of interest be consulted. A list of URLs and a directory of national and regional intellectual property offices are available at www.wipo.int/directory/en/urls.jsp.

For each country where I wish to protect my invention, I have to file applications on the same day to ensure they benefit from the earliest filing date.

When a patent application is filed in one country, the filing date for that first application is called the priority date. Any subsequent applications filed in other countries that are members of the Paris Union and/or the World Trade Organization within 12 months (i.e., within the priority period), and which cover the same subject matter, will benefit from the date of the first application, for example for the later filing of an **international application** under the PCT. This enables subsequent applications filed within the priority period to have priority over other applications for the same invention filed by others after the priority date (see No. 28).

A patent attorney has to write and file your patent application.

For domestic applications, anyone can prepare and file a patent application, but this is a complex task and very risky to undertake without the assistance of a patent agent or attorney. Note that most laws require foreign applicants to be represented by a patent agent or attorney resident in that country (see No. 25).

A patent protects anything illustrated in its drawings.

It is the claims of the patent application that determine the scope of protection, not the drawings. The drawings can aid in illustrating technical details of the invention but are not always a necessary part of the application. The claims are critical to the application and must be carefully drafted to properly protect the invention (see No. 21).

I didn't copy any portion of my invention from existing products so I'm sure I'm not infringing any patents.

Claims for patent infringement are not based on whether the infringers knew about the patent or deliberately copied the patented invention. The patents of others can be infringed even if the infringer had no idea that those patents existed. This is why it is important to conduct a prior art search before investing heavily in the invention and preparing it for market (see Nos. 14 and 15).

My invention is just an improvement on existing technology, so I cannot obtain a patent.

A lot of patented inventions are small improvements on existing technology. An invention does not need to be a major advance in the field to qualify for a patent. As long as the invention meets the patentability requirements, you are free to apply for a patent (see No. 6). However, if you are using other patented technology in your invention, you will need to obtain a license from the owner of the other patent in order to commercialize your own patented invention (see No. 12).

A provisional patent application is the normal or preferred first step on the road to obtaining a patent.

Provisional patent applications are available only in some countries and, while the filing fees are lower, a full patent application will still need to be filed before the end of the 12-month provisional period in order to protect the invention. Depending on your business strategy, there are costs and benefits to utilizing a provisional patent application, and the details of how they work vary from country to country. A patent agent or attorney should be consulted.

Something shown and/or described in an expired patent can be re-patented.

Once a patent has expired, the invention is free to be used by the public and cannot be re-patented. In addition, since the expired patented invention has been disclosed to the public through the patent application, the invention no longer meets the “new or novel” patentability requirement (see No. 8).

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