



Inventing the Future

An Introduction to Patents and Functional Designs for Small and Medium Enterprises



the dti

Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA

towards full-scale **industrialisation** and
inclusive growth



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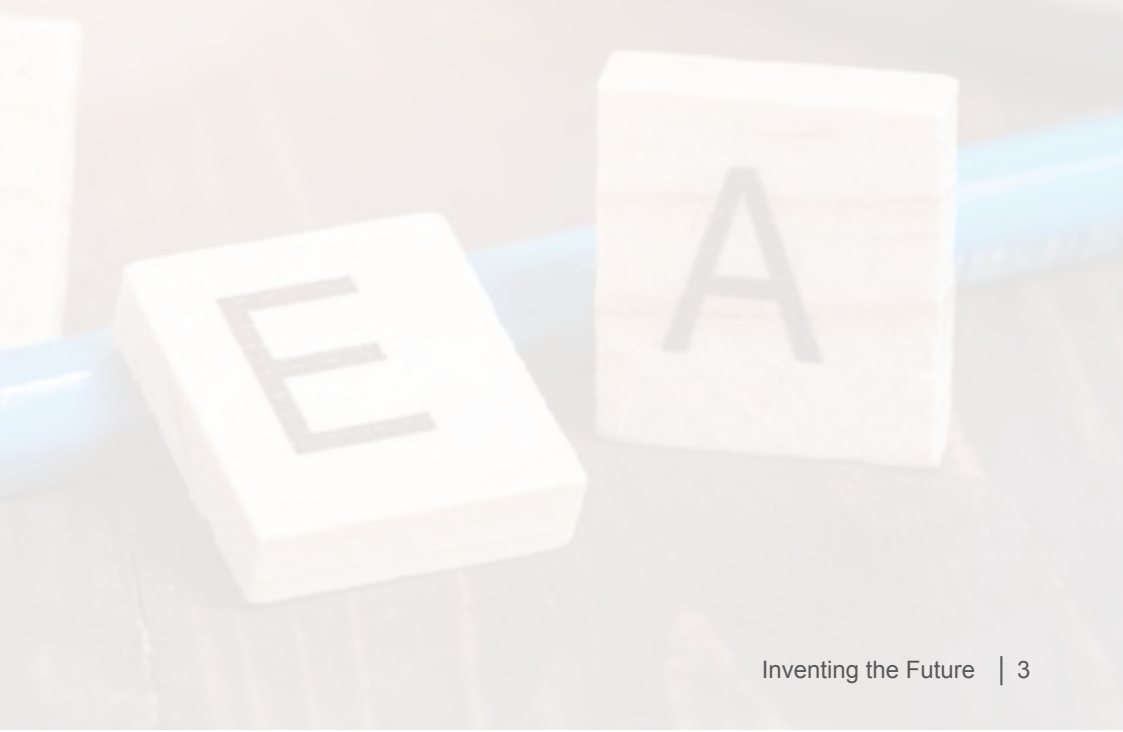
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PREFACE

This is the third in the series of guides developed through a World Intellectual Property Organisation (WIPO) development agenda project to assist small and medium-sized enterprises (SMEs) to navigate and optimally use the intellectual property (IP) rights system. It focuses on patents, a key tool to enhance a company's ability to draw maximum benefit from new and innovative ideas and technological capabilities. The management of knowledge resources, particularly 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, the patent strategy of an innovative enterprise should be a key factor in its business strategy. This guide explains in simple and practical ways the business benefits of the patent system for all types of enterprises. The guide also introduces functional designs as a complementary tool for protecting certain innovations.

Although readers are advised to consult a patent or designs expert when seeking to protect, exploit or enforce a patent or design, this guide provides practical information intended to help readers understand the basics and empower them to ask the right questions while consulting an expert.

SMEs are encouraged to use the guide with a view to integrating their technology and patent strategies into their overall business, marketing and export strategies. Readers are encouraged to read this guide together with *Looking Good: An Introduction to Aesthetic Designs for Small and Medium-sized Enterprises*, the second book in this series, which provides further information on design registration and aesthetic designs in particular.

This guide has been adapted to the national context by the Department of Trade and Industry (the dti). Readers are invited to contact the dti or the WIPO SME section for further information on the use of IP rights.

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PATENTS

What is a patent?

A patent is an exclusive right granted by the state for an invention that is new, involves an inventive step and is capable of being used or applied in trade, industry or agriculture.

It gives its owner, the patentee, the exclusive right to exclude others from making, using, exercising, disposing or offering to dispose of, or importing the invention, without the owner's prior permission.

A patent is a powerful business tool for businesses to gain exclusivity over a new product or process, develop a strong market position, and earn additional revenues through licensing. A complex product (such as a camera, cellphone, or car) may incorporate a number of inventions that are covered by several patents, which may be owned by different patent holders.

A patent is granted by the national patent office. The South African Patent Office is administered by the Companies and Intellectual Property Commission (CIPC). A patent application can also be filed at a regional patent office, such as the African Regional Industrial Property Organisation (ARIPO) and the African Intellectual Property Organisation (OAPI) for the patent to extend to a group of countries (see Annex II).

A patent is valid for a limited period of 20 years from the date of application, provided the required renewal fees are paid on time. A patent is a territorial right, limited to the geographical boundary of the relevant country or region.

In return for the exclusive right provided by a patent, the applicant is required to disclose the invention to the public by providing a detailed, accurate and complete written description of the invention in the patent application. The complete specification shall sufficiently describe, ascertain and, where necessary, illustrate or exemplify the invention and the manner in which it is to be performed. This enables the invention to be performed by a person skilled in the art of the invention.

South Africa is a non-examining country and therefore patent applications are examined only to ensure that they have complied with the required formalities. If the registrar of

patents is satisfied that the formalities have been met, a written notice to this effect will be issued to the patentee. This notification gives the date of acceptance of the specification and contains a statement that, on publication of the acceptance in the *Patent Journal*, the patent concerned shall be deemed to have been granted as from the date of publication.

Following publication in the *Patent Journal* that a patent has been accepted, the patent and the complete application is open for public inspection. On publication, the application documents, which up until this point have been kept on file at the patent office, become open for public inspection. If the acceptance notice is not published in the Patent Journal within the prescribed period, or within an extended period that the registrar may allow, then the application will lapse.

What is an invention?

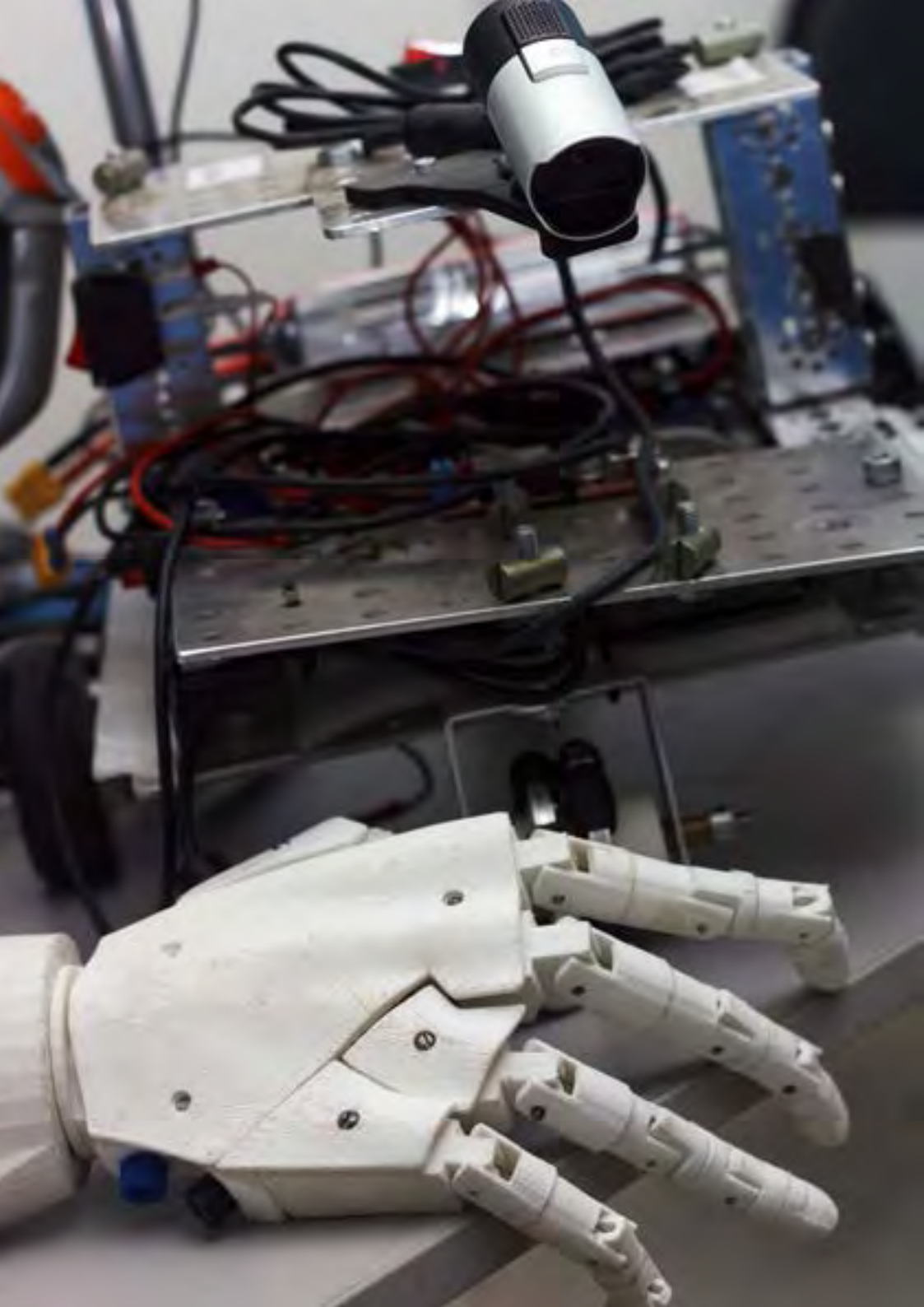
In patent jargon, an invention is generally defined as a new and inventive solution to a technical problem. It may relate to the creation of an entirely new device, product, method or process, or may simply be an incremental improvement to a known product or process. Merely finding something that already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

Although most inventions are the result of considerable efforts and long-term investments in research and development, many simple and inexpensive technical improvements of great market value have yielded significant income and profits for their investors and companies.

The power of innovation

Appreciating the distinction between invention and innovation is important. Invention refers to a technical solution to a technical problem. It may be an innovative idea or in the form of a working model or prototype. Innovation refers to the translation of the invention into a marketable product or process. Companies innovate for various reasons, including to:

- improve manufacturing processes to save costs and improve productivity;
- introduce new products that meet customer needs;
- remain ahead of the competition and/or expand market share;



- ensure technology is developed to meet the actual and emerging needs of a business and its clients; and
- prevent dependence on other companies' technology.

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

Why should you consider patenting your inventions?

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

- strong market position and competitive advantage – patent gives its owner the exclusive right to prevent or stop others from commercially using the patented invention, thereby reducing uncertainty, risk and competition from free riders and imitators. If a company owns or obtains the permission to exploit a valuable patented invention, it may be able to create a barrier for competitors to enter the market in respect of the same inventions. This will help it to become a pre-eminent player in the relevant market(s).
- higher profit or returns on investment – higher profit or returns on investment. If a company has invested a significant amount of time and money in research and development, patent protection of the resulting inventions is valuable in recovering costs and obtaining higher returns on investments.
- Additional income from licensing or assigning the patent – patent owners may license their rights over the invention to others in exchange for lump sum payments and/or royalties in order to generate additional income. Selling (or assigning) a patent implies transfer of ownership, whereas licensing implies only permission to use the licensed invention under specified conditions.

- Access to technology through cross-licensing. If a company is interested in technology owned by others, it may use the company's own patents to negotiate cross-licensing agreements, by which the company and the other party agree to authorise each other to use one or more of the respective patents under conditions specified in the agreement.
- Access to new markets. Licensing patents (or even pending patent applications) to others may provide access to new markets that are otherwise inaccessible. For this, the invention must also be protected in the relevant foreign market(s).
- Diminished risks of infringement. Patent protection enables the patentee to prevent others from patenting the same invention, and reduces the chances of infringing the rights of others when commercialising a product. Although a patent itself does not provide the "freedom to use", it prevents others from patenting the same or similar inventions, and provides a reasonable indication that the patented invention is new and significantly different from "prior art".
- Enhanced ability to obtain grants and/or raise funds at a reasonable rate of interest. The ownership of patents (or a licence to use patents owned by others) may enhance the ability to raise capital to take a product to market. In some sectors, such as biotechnology, it is often necessary to have a strong patent portfolio to attract venture capitalists.
- A powerful tool to take action against imitators and free riders. To effectively enforce the exclusivity provided by a patent, it may occasionally be necessary to litigate, or bring your patents to the attention of those who are violating your patent rights. Owning a patent considerably improves your ability to take successful legal action against copiers and imitators of the protected invention.
- Positive image for your enterprise. Business partners, investors, shareholders and customers may perceive patent portfolios as a demonstration of a company's high-level expertise, specialisation and technological capacity. This may prove useful for raising funds, finding business partners and raising a company's profile and market value. Some companies mention or list their patents in advertisements to project an image of innovation to the public.

What other legal instruments are available for protecting products?

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

- Utility models (also known as short-term patents, petty patents or innovation patents). In many countries, some types of incremental inventions or small adaptations to existing products are protectable as utility models. South African law does not have any protection for so-called utility models or petty patents, although it is possible to obtain protection as a functional design.
- Trade secrets. Confidential business information may benefit from trade secret protection as long as:
 - it is not generally known to others dealing with that type of information;
 - it has commercial value because it is secret; and
 - reasonable steps have been taken by its owner to keep it secret (for example, restricting access to such information on a need-to-know basis, and entering into confidentiality or non-disclosure agreements).
- Aesthetic designs: In addition to functional designs, the Designs Act, 1993 (Act No. 195 of 1993) also provides for the possibility to register aesthetic designs that provide exclusivity over the ornamental or aesthetic features of a product. For more information on aesthetic designs, refer to *Looking Good: An Introduction to Aesthetic Designs for Small and Medium-sized Enterprises*, the second guide in this series.
- Trademarks. Trademark protection provides exclusivity over distinctive signs used to distinguish a company's products from those of others.
- Copyright and related rights. Original literary and artistic works may be protected by copyright and related rights. Copyright protection applies to a wide range of works, including computer programs.
- New plant varieties. A breeder of a new plant variety, which fulfils the requirements of novelty, distinctness, uniformity and stability, and is designated with a suitable denomination, may obtain protection in the form of plant breeders' rights. For more information on the protection of new plant varieties, visit www.upov.int.
- Integrated circuit topography. You may be able to obtain protection for an original layout design or topography of an integrated circuit used in microchips and semiconductor chips. Such protection may also extend to the final product incorporating the layout design. In South Africa, integrated circuits are protected as functional designs under the Designs Act.

What are functional designs?

In terms of the Designs Act, a functional design is defined as “any design applied to any article, whether for the pattern or the shape or the configuration thereof, or for any two or more of those purposes, and by whatever means it is applied, having features which are necessitated by the function which the article to which the design is applied, is to perform, and includes an integrated circuit topography, a mask work and a series of mask works”.

A functional design focuses only on the features of a design that are necessitated by the function of a product. As in the case of aesthetic designs, the article to which the design is applied must be intended to be multiplied by an industrial process. Protection is granted to functional designs in South Africa for a period of 10 years, subject to annual renewal fees.

To qualify for protection, a functional design must meet the requirements of being new and not commonplace in the art in question.

A design shall be considered new if it does not form part of the state of the art immediately before the date of application or its release date, whichever is earlier. The release date is defined as the date on which the design was first made available to the public with consent of the proprietor of the design. This release date is unique to designs, as a similar release of aspects of a patentable invention will destroy the novelty requirements for obtaining a valid patent for that invention. Accordingly, care should be taken in circumstances where it is desirable to obtain both patent and design protection, as the release of a design will destroy the novelty of a patent. The Designs Act provides a grace period between the release date of a design and the date of application for registration. This period provides a person the opportunity to obtain a registered design after the design has been made available to the public. This period is six months from the release date of the design, and two years where the design relates to an integrated circuit topography, a mask work, or a series of mask works. This grace period offers an advantage only where protection will be limited to South Africa, as it may not be possible to obtain valid design protection in most foreign countries if the design is released before filing an application.

For more information on design protection, refer to *Looking Good: An Introduction to Aesthetic Designs for Small and Medium-sized Enterprises*, the second guide in this series.

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

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

Questions to be considered in deciding whether or not to file a patent application include:

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

The Designs Act provides the following definitions:

An integrated circuit is an article, in final or intermediate form, containing electrical, electromagnetic or optical elements and circuitry, which is capable of performing an electrical or an optical function, and in which at least a part of the electrical, electromagnetic or optical elements and circuitry are integrally formed, in accordance with a predetermined topography, in a semiconductor material.

An integrated circuit topography is a functional design that consists of the pattern, shape or configuration of the three-dimensional disposition of the electrical, electromagnetic or optical elements and circuitry of an integrated circuit.

The Act defines mask works as a functional design that consists of a pattern of an image, fixed or encoded, having or representing at least a part of an integrated circuit.

What can be patented?

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

- consists of patentable subject matter;
- is new (novelty requirement);
- involves an inventive step (non-obviousness requirement);
- is capable of being used or applied in trade, industry or agriculture (utility requirement); and
- is disclosed in a clear and complete manner in the patent application (disclosure requirement).

The best way to understand these requirements is to study what has been patented by others in a particular technical field.

What is patentable subject matter?

In most national or regional patent laws, patentable subject matter is defined negatively, by providing a list of what cannot be patented. Although there are considerable differences between countries, the following are examples of material that cannot be patented in South Africa:

- discoveries, scientific theories, mathematical methods
- any variety of plant, animal or an essentially biological process for the production of plants or animals, not being a microbiological process
- schemes, rules or methods for performing a mental act, playing a game or doing business
- a method of treatment of the human or animal body by surgery, therapy or of diagnosis practised on a human or animal body

- inventions for which the publication or exploitation thereof would generally be expected to encourage illegal or immoral behaviour
- literary, dramatic, musical or artistic works, or any other aesthetic creation
- presentation of information
- a computer program

Patents vs secrecy

If an invention is likely to fulfil the requirements for patentability, your business will face a choice: to keep the invention as a trade secret, to patent it, or to ensure that no one else is able to patent it by disclosing it (commonly known as defensive publication), thereby assuring its place in the public domain. Trade secrets are protected under South African common law and through contractual provisions in agreements with employees, consultants, customers and business partners.

Some advantages of trade secret protection include that:

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

Disadvantages of protecting inventions as trade secrets:

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

Although patents and trade secrets may be perceived as alternative means of protecting inventions, they are often complementary to each other. This is because patent applicants



BUSINESS

30%

IDEA

100%

\$

\$

28%



CONCEPT

50%



generally keep inventions secret until the patent application is published by the patent office. Moreover, a lot of valuable know-how on how to exploit a patented invention successfully is often kept as a trade secret.

Protecting computer software

Under South African law, computer programs are specifically excluded as patentable inventions. However, this prevents a computer program from being patented only to the extent to which the patent relates to the “thing as such”.

It, therefore, seems that if there is a technical contribution to the art that is novel, inventive and has an industrial application, then the program may be patentable except to the extent to which it relates to a computer program as such.

The matter has yet to be decided by the South African courts. However, as there is no precedent in South Africa, the courts will make reference to foreign case law. Both European and United States case law have largely found that computer software is patentable. For more information on the patentability of computer software in other countries, contact the relevant national or regional patent office (see Annex II for a list of websites of patent offices, or visit www.wipo.int/directory/en/urls.jsp).

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

How is an invention judged to be new or novel?

An invention is new or novel if it does not form part of the prior art. In general, prior art refers to all the relevant technical knowledge available to the public anywhere in the world prior to the first filing date of the relevant patent application. It includes, among other things, patents, patent applications and non-patent literature of all kinds. The definition of prior art differs considerably from country to country. In many countries, any information disclosed to the public anywhere in the world in written form, through oral

communication, by display or through public use constitutes prior art. Thus, in principle, the publication of the invention in a scientific journal, its presentation in a conference, its use in commerce or its display in a company's catalogue would all constitute acts that could destroy the novelty of the invention and render it unable to be patented.

In South Africa, where there is an absolute novelty requirement, an invention is new or novel if it does not form part of the state of the art immediately before the priority date of that invention. The state of the art is considered to include:

- all matter (whether a product, a process, information about either, or anything else) that has been made available to the public in South Africa or anywhere in the world, by written or oral description or through use or in any other way;
- all information contained in an earlier patent application in South Africa that is or will become open to public inspection;
- any invention that is used in secret and on a commercial scale in South Africa before the priority date.

It is 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, you might want to consult a competent patent agent. Prior art often includes "secret prior art" such as pending unpublished patent applications, provided they are later published.

What is a priority date?

The Paris Convention affords applicants priority rights if they have already applied in a convention country within a period of 12 months. If application, for example, is made in the United Kingdom on 20 January 2018 and in South Africa on 20 April 2018, the applicant's rights will date back to 20 January 2018. This means that if a similar application is brought in South Africa in March 2018, it will be refused against the one lodged in November based on the priority established by the UK application. Priority rights can also be claimed from a provisional patent application lodged in the South African patent office within a period of 12 months or within 15 months upon request of an extension by the registrar.

When is an invention considered to involve an inventive step?

An invention is considered to involve an inventive step (or to be non-obvious) when, having regard to any matter that forms, immediately before the priority date of the invention, part of the state of the art (but excluding matter contained in an unpublished patent application in South Africa and a secret invention used on commercial scale), the invention would not have been obvious to a person skilled in the particular field of technology.

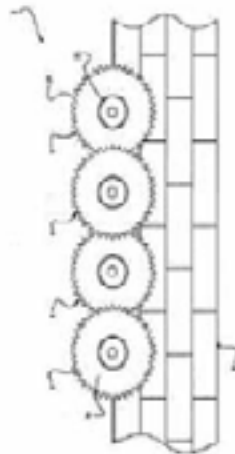
The non-obviousness requirement is meant to ensure patents are only granted in respect of truly creative and inventive achievements, and not to developments that a person with ordinary skill in the field could easily deduce from what already exists. Examples of what have been interpreted by the courts as not being inventive include: change of size; making a product portable; reversal of parts; change of materials; or substitution of an equivalent part or function.

Example: A patent that has been published in the South African *Patent Journal*. The patent is for an invention entitled 'A security barrier'. In South Africa, personal safety is a concern, so safety and security devices are often protected by patents.

21: 2011/02567 22: 07/04/2011 43: 09/07/2012
51: ED4H
71: KELLY DAVID PATRICK
72: KELLY DAVID PATRICK
33: IE 31: 2006/0738 32: 2006/06/11
33: IE 31: 2006/0576 32: 2006/07/23
54: A SECURITY BARRIER
00: -

57: A security barrier (1) comprises four elements (2, 3, 4 and 5), each bolted to the top of a wall W. Each element comprises a generally disc-shaped plate having a central recessed portion (10) and an annular main portion (12) integrally connected to the recessed portion (10) by a shoulder (13). A support (14) for each element comprises a bolt (15) and a spacer (16), the bolt (15) extending through an

aperture (18) in the centre of the element. Each plate has a toothed edge (19), all around the circumference. Alternate elements have the plates facing in opposite directions so that they are offset in plan by double the depth of the shoulder (13), and so can be interleaved. The element plates are generally parallel to the plane of the wall. With any of a variety of plate materials and thicknesses the barrier may be adapted to any of a range of security applications.



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), and significant differences between countries on what can be patented have emerged. Almost all countries allow for the patenting of inventions involving micro-organisms and require the deposit of a sample of the organism at a recognised depositary institution when the micro-organism is not yet publicly available and cannot be properly described otherwise, as is the case in South Africa.

Many countries, including South Africa, exclude plants and animals from patentability but allow for the patenting of biological materials that have been purified and isolated from their natural environment or produced by means of a technical process. National legislation may also list some specific types of inventions that may not be patented, such as processes for cloning humans or processes for modifying their germ line genetic identity. The Patents Act, 1978 (Act No. 57 of 1978) merely provides that a patent shall not be granted for any variety of animal or plant or any essentially biological process for the production of animals or plants, not being a microbiological process or the product of such process.

Depending on the country, new varieties of plants are protected by the patent system, a specific system or legislation for the protection of new varieties of plants, or by a combination of the two. In South Africa, a specific system for the protection of new varieties of plants is provided for by the Plant Breeders' Rights Act, 1976 (Act No. 15 of 1976). Visit www.upov.int for further information.

What is meant by 'capable of industrial application'?

To be patentable, an invention must be capable of being used or applied in trade, industry or agriculture. An invention cannot be merely theoretical; it must be useful and provide some practical benefit. The application in trade, industry or agriculture is meant in the broadest sense as anything distinct from anything purely intellectual or aesthetic. The utility requirement has become particularly important for patents on genetic sequences for which a utility may not yet be known at the time of filing the application.

A method of treatment of the human or animal body by surgery or therapy or of diagnosis practised on the human or animal body is not patentable in South Africa because it is deemed not being capable of being used or applied in trade, industry or agriculture.

What is the disclosure requirement?

The legislation of most countries, including South Africa, requires that a patent application must disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the specific technical field. In South Africa, the complete patent specification must sufficiently describe, ascertain and, where necessary, illustrate or exemplify the invention and the manner in which the invention is to be performed.

In some countries, patent law requires that the inventor disclose the best mode for practising the invention. This is no longer a requirement in South Africa.

For patents involving micro-organisms, many countries, including South Africa, require the microorganism to be deposited at a recognised depository institution.

What rights are granted by patents?

A patent grants its owner the right to exclude other persons from using the invention commercially. This includes the right to prevent or stop others from making, using, exercising, disposing or offering to dispose of or importing the patented invention without the owner's permission.

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

Also, before certain inventions (such as pharmaceutical drugs) can be commercialised, other clearances may be required, such as marketing approval from the relevant regulatory body such as the Medicines Control Council in South Africa.



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, owner or patentee of the patent. Although in some cases the inventor may also be the applicant, the two are often different entities – the applicant is often the company or research institution that employs the inventor. The following circumstances merit further analysis:

- **Employee inventions.** In South Africa, the default position is that an invention will always vest in the inventor. It is therefore common practice in South Africa to include a clause relating to intellectual property developed during the course and scope of employment in relevant employment contracts. The Patents Act prohibits the inclusion of certain clauses in an employment contract. Any clause that requires an employee to assign to his or her employer any invention, other than one made during the course and scope of employment, is not permitted. Any clause that restricts the right of an employee in an invention made more than one year after the termination of the contract of employment is also not permitted.
- **Independent contractors.** In South Africa, an independent contractor hired by a company to develop a new product or process generally owns all rights to the invention, unless specifically stated otherwise in the contractual agreement. 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 the development. Should a dispute arise, the South African courts will, however, look into the nature of the employment. It is always recommended to clearly state who has the rights to an invention prior to commencing research and development.
- **Joint inventors.** When more than one person contributes in significant ways to the conception and realisation 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, in equal undivided shares unless contractually agreed otherwise.
- **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 South Africa, each of the joint patentees has an equal undivided share in the patent unless there is an agreement to the contrary. A joint patentee has

limited rights in that they may not use, exercise, offer to dispose of, dispose of or make or import the patented invention, grant a licence or assign in part or whole the invention, or take any steps or institute any proceedings relating to the patent without the consent of the other joint patentee(s) or an agreement to the contrary. However, a joint patentee may pay the renewal fee or institute legal proceedings without the prior consent of the other joint patentee(s).

Summary checklist:

Should you patent your invention? Consider advantages of patent protection. Look into alternatives, and conduct a cost or benefit analysis. Read more about patents in the following sections to make sure you make an informed decision.

- Is your invention patentable? Consider the patentability requirements and ensure the invention does not fall within the ambit of inventions that are not patentable. If you are uncertain, get a professional legal opinion before taking any further steps. Conduct a prior art search (see the following section).
- Ensure clarity over rights to the invention. Make sure there is clarity on issues relating to rights over the invention between the company, its employees, and any other business partner who may have participated either financially or technically in developing the invention.

HOW TO GET A PATENT

Where should you start?

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

There are two main reasons for conducting a prior art search: to establish novelty and the freedom to operate. A novelty search is aimed at identifying whether the invention is new, and what the closest prior art is. This search focuses on identifying what prior art an invention may infringe. However, the object of a freedom to operate search is generally not to ascertain whether the invention is patentable, but is used more in circumstances when a person wants to avoid infringing existing patents.

A novelty search can prevent wasting money on a patent application if the search uncovers prior art references that are likely to preclude patenting an invention. The search should extend to all relevant non-patent literature, including technical and scientific journals, textbooks, conferences, theses, websites, company brochures, trade publications and newspaper articles.

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

The importance of searching patent databases

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

- the research and development activities of current and future competitors
- current trends in a given field of technology
- technologies for licensing
- potential suppliers, business partners, or sources of researchers
- possible market niches locally and abroad
- relevant patents of others to ensure that your products do not infringe them (freedom to operate)
- relevant patents that have expired and technology that has come into the public domain
- possible new developments based on existing technologies

How and where can you conduct a prior art or novelty search?

Patents and patent applications published by many patent offices are accessible online, thus making it easier to conduct prior art searches. WIPO offers free online access to all published international patent applications processed through the Patent Cooperation Treaty (PCT), together with millions of patents from the collections of many national and

regional offices, through its Patentscope search service at www.wipo.int/wipogold. Many IP offices also have made their patent databases freely available online. In addition, most national patent offices offer patent search services for a fee.

South Africa provides a free online patent search option at <http://patentsearch.cipc.co.za>.

This search is limited, and a more detailed manual search should also be conducted by either the applicant or a patent attorney at the CIPC offices for a minimal fee. The patent office is open to the public, and it is possible to conduct a search there. However, consulting an expert is advisable because they will have a better idea of what is relevant to the particular search.

Although access to patent information is considerably simpler thanks to the internet, it is not easy to perform a high-quality patent search. Patent jargon is often complex and obscure, and professional searching requires considerable knowledge and expertise.

Preliminary searches may be performed through free online patent databases, however, most companies requiring patent information for making key business decisions, such as whether or not to apply for a patent, will generally rely on the services of patent professionals and/or use more sophisticated commercial databases.

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

The Patentscope search service

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

- access to the first publication worldwide of PCT applications and patent documents from participating national and regional offices;
- full text search;
- multilingual search and translation tools to allow the searching of foreign language databases;

- word stemming (allowing entry of the stem of a word and the service automatically generates common variants, such as 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
- rich site summary feeds to monitor patenting activities and updates in areas of interest.

How to apply for patent protection

After a novelty 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 includes a title, abstract, full description of the invention, the patent claims (which determine the scope of the patent applied for), drawings and examples where necessary (for more on the structure of a patent application, see page 39). Although some patent offices make it possible for applicants to submit their application through the internet, this is not the case in South Africa. The patent application needs to be lodged at the CIPC. In some countries, including South Africa, there is an option for filing a provisional patent application prior to filing a complete patent application (see box on page 40).

The task of preparing a patent application is generally performed by a patent attorney who represents the applicant's interests during the application process. Patent attorneys in South Africa all have technical degrees and are specialised in a particular technical field. It is recommended that you approach a patent attorney who is familiar with the art to which the invention belongs. The box on page 33 provides a basic overview of the application process. Note that the box refers generally to a national phase patent application filed in South Africa, and that there may be important variations between countries.

- The process of pursuing international patent protection typically starts by filing a priority patent application in your home country. Then, an applicant has different choices for securing international patent protection: filing an international PCT

application, filing a regional application, or filing directly into the jurisdictions where the applicant is seeking protection (also called “direct filing” or “Paris Convention filing”). Each filing process is slightly different. It is always best to check with the patent office or patent law firm in the relevant country to obtain up-to-date information on procedures and applicable fees.

Step-by-step guide to processing an application in South Africa

Formal examination: Once an applicant has submitted his or her application, the patent office will conduct a formal examination of the application to ensure that it complies with the formalities and requirements of the Act, that all relevant documentation is included, and that the application fee has been paid. The application will be rejected if the necessary documentation is not in order and there are outstanding fees.

Acceptance: If it is found that the application meets the requirements of the Act, the registrar shall notify the applicant and inform them that the patent must be published within three months.

Publication: Once an application has been accepted and the applicant has been notified, the applicant is required to publish the application in the Patent Journal within three months of acceptance (or within such further time as the registrar may provide on good cause shown and on payment of a fee). The patent is considered sealed and granted as from the date of publication of the acceptance.

Issue of registration certificate: About two months after publication of the acceptance, the registrar issues the registration certificate.

How much does it cost to patent an invention?

The cost of patenting an invention varies considerably from country to country, and within a country depending on factors such as the nature of the invention, its complexity, attorneys’ fees, the length of the application and objections raised during the examination by the patent office.

It is important to keep in mind and properly budget the costs related to patent application and maintenance. In South Africa, these costs include:

Search fees – costs associated with performing a novelty or freedom to operate search, particularly if you rely on the services of an expert.

Official filing fees, which cost R60 for a provisional application and R590 for the filing of a complete application. This fee structure may be adjusted from time to time. An updated breakdown of fees can be obtained at www.cipc.co.za/Patents_Journal.aspx. In addition to the official filing fees, attorneys' fees will have to be paid for the preparation and filing of the relevant documents.

Attorneys' fees – the specification of a provisional patent application can be signed by an applicant or his or her agent, but the specification accompanying a complete patent application must be signed by a patent attorney, whose fees vary. If an applicant relies on the services of a patent attorney to assist you in the application process (to provide the patentability opinion, draft the patent application, prepare the formal drawings and correspond with the patent office), they will incur additional costs. These costs can be anything from R7 000, depending on the complexity of the invention and the firm fees. However, it is advisable to use the services of a professional to avoid subsequent invalidity or complications arising from inadequate description, or the invention being too narrowly defined.

Renewal fees – once a patent has been granted by the patent office, you must pay renewal fees to maintain the validity of the patent. These are payable annually from the third anniversary of the filing date and vary on a sliding scale of up to R206 for the official fees. Added to this is the cost of using the patent attorneys' services, which are in the region of R725 upwards.

International fees – in case you decide to patent your invention abroad, you should also consider the relevant official filing fees for the countries in question, the translation costs and the costs of using local patent agents, which is a requirement in many countries for foreign applicants.

Depository fees – in case of inventions involving micro-organisms, where the deposit of the micro-organism or biological material with a recognised depository institution is necessary, fees for the filing, storage and viability testing of the deposited material will

have to be paid.

When should you file a patent application?

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

Reasons for ensuring that your application is filed early include:

- In most countries, patents are granted on a first-to-file basis. Thus, filing an application early is important to ensure that you are the first to file an application on that particular invention so that you do not lose your invention to others. South African patent law is also based on the principle of first to file.

Applying for patent protection early will generally be useful if you are seeking financial support or wish to license your invention to commercialise it.

You can generally enforce a patent only once it has been granted by the relevant patent office, which is a procedure that may take a few years.

However, rushing to file a patent application as soon as you have an invention may also be a problem. If you apply too early, it will generally not be possible to make significant changes to the original description of the invention.

Once you have filed your application in one country or region, you normally have 12 months to file an application for the same invention in all countries of interest to your business in order to enjoy the benefit of the filing date of your first application. This may be a problem if the costs of applying in various countries and paying maintenance fees are too high for your company. One way of mitigating this problem is by postponing the payment of translation and national fees for an additional 18 months through the PCT.

It is also important to bear in mind that the application should be filed before disclosing the invention. Any disclosure before filing the application, including for test marketing, or to investors or other business partners, should be done only after signing a confidentiality or non-disclosure agreement. Discussing your invention with a patent attorney does not amount to premature disclosure as he is bound by client confidentiality to keep it secret.

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

If you wish to obtain a patent on your invention, keeping it confidential prior to filing the application is absolutely necessary. In many circumstances, public disclosure of your invention prior to filing the application would destroy the novelty of your invention, rendering it unpatentable, unless it falls within the grace period that exists in certain countries. South African patent law makes no provision for a grace period, and any disclosure of the invention prior to filing will be considered to destroy novelty, unless the disclosure is confidential.

What is a grace period?

The legislation of some countries provides a grace period of 6 or 12 months from the moment an invention was disclosed by the inventor or the applicant until the application is filed. During this time, the invention does not lose its patentability because of such disclosure. In such countries, a company may disclose its invention, for example by displaying it in a trade show or publishing it in a company catalogue or technical journal, and file the patent application within the grace period without the invention losing patentability and being barred from obtaining a patent. South African patent law does not provide for a grace period, and any prior disclosure of the invention will destroy its novelty unless a non-disclosure agreement is in place.

What is the structure of a patent application?

A patent application has a range of functions:

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

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

A form P25 request contains information on the title of the invention, the date of filing, the priority date, and data such as the name and address of the applicant and inventor.

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

Claims determine the scope of protection of a patent. Claims are crucial to a patented invention as, if they are badly drafted, even a valuable invention could result in a worthless patent that is easy to circumvent or design around. In patent litigation, interpreting claims is generally the first step in determining whether the patent is valid or has been infringed. It is advisable to seek the advice of an expert to draft patent applications, particularly for claims.

Drawings show the technical details of the invention in an abstract and visual way. Once published, the patent is deemed to have been granted and a registration certificate is issued after about two months. It is possible to apply for an expedited acceptance process in South Africa. If the invention is for a process or method of doing something, drawings usually are not required. If drawings are required, formal rules govern their acceptability.

The abstract is a brief summary of the invention. When a patent is published in the Patent Journal, the abstract is included. It is often the only part in addition to the title that is conducted in preliminary searches, so it is important that it highlights the main aspects of the invention.

Provisional patent applications

In South Africa and a few other countries (including Australia, Canada, India and the United States), applicants have the possibility of filing a provisional patent application, which is intended to be a relatively low-cost entry point to the patent system. The applicant may then wait up to a year before filing a full patent application. Provisional applications have several advantages:

- A provisional application need only fairly describe the invention, and claims are not required.

- The applicant has 12 months from the date of filing, within which developments and improvements can be made to the invention. This period can be extended by three months on request.
- Informal drawings may be submitted in support of the provisional application.

Although official filing fees are lower for a provisional application, it is advisable to consult a patent attorney to assist with the drafting of the specification as this will be of great benefit when the application needs to be completed. If a provisional patent application is filed, the strength and scope of protection obtained will depend on the wording and content of the description of the invention.

Example

Patent claim (as evidenced in a South African patent infringement case between Northpark Trading 3 (Pty) Ltd and Ausplow (Pty) Ltd)

A seeding assembly to be used with a plough frame supporting at least one plough tine; said assembly comprising a seeding tube to extend downward into a slot formed in a soil layer by the tine; said tube having a lower extremity through which seed is delivered into the soil layer; a closing tool fixed with respect to said lower extremity and having a leading surface forward thereof relative to the normal direction of travel of the frame over the soil layer; said closing tool being aligned in said direction with respect to said lower extremity so that it engages soil adjacent said slot to dislodge the soil to partly close the slot and provide a seed bed on to which seed leaving said lower extremity is delivered; mounting means to attach the tube and closing tool to the frame to permit height adjustment of the tube and the closing tool with respect to the frame; and ground engaging means operatively associated with the tube and closing tool to engage the soil layer to cause said height adjustment.

Pending patents

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. Although these terms do not provide any legal protection against infringement, they may serve as a warning to dissuade others from copying the product as a whole or certain innovative features.

In South Africa, it is important to mark patented products not only with the word 'patented' or a similar phrase, but to also include the patent or patent application number. Failure to do so could result in a restriction of the damages payable if the infringer can show that he or she was not aware and had no reasonable means of making himself aware of the existence of a patent. The Patents Act states that "the marking of an article with the word 'patent' or 'patented' or any word or words expressing or implying that a patent has been obtained for the article, stamped, engraved, impressed on or otherwise applied to the article, shall not be deemed to constitute notice of the existence of the patent unless such word or words are accompanied by the number of the patent".

How long does it take to get patent protection?

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

In South Africa, formal examination of an application will be considered only at least six months after the application has been filed. If all the formalities are in order, the application will be accepted and the acceptance notice must be published within three months. Once published, the patent is deemed to have been granted and registration certificate will issue after about two months. It is possible to apply for expedited acceptance, and hence granting, of a patent application in South Africa.

From what date is your invention protected?

Your rights effectively begin on the date your patent is granted, as only then can you take legal action against unauthorised use of the invention by third parties. In South Africa, the patent can be enforced only from the date of publication in the Patent Journal.

In South Africa, there is a nine-month moratorium period from the date of grant. During this period, no proceedings for infringement may be instituted. It is, however, possible to apply to the commissioner of patents for leave to institute proceedings.

How long does patent protection last?

The international standard provides for 20 years of protection from the filing date of the application, provided the renewal fees are paid on time and that no request for invalidation or revocation has been successful during this period. Although this relates to the legal life of a patent, the business or economic life of a patent is over if the technology covered by it is outdated, if it cannot be commercialised, or if the product based on it has not been successful in the market. In such circumstances, the patent holder may decide to no longer pay maintenance or renewal fees, leaving the patent to expire earlier than the 20-year term of protection, and thus let it fall into the public domain.

In some countries, protection may be extended beyond 20 years, or a supplementary protection certificate (SPC) may be granted in very specific circumstances. This is the case, for example, for patents on pharmaceuticals, due to delayed commercialisation resulting from the time required to obtain marketing approval from relevant governmental authorities. SPCs have a limited duration and generally cannot exceed five years. South Africa does not make provision for such extensions.

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

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

- conducting a novelty search to identify any prior art that renders your invention unpatentable;
- writing the claims and full description of the invention, combining legal and technical jargon;
- corresponding with the national or regional patent office, especially during the substantive examination of the patent application;
- making the necessary amendments to the application requested by the patent office.

All these aspects require in-depth knowledge of patent law and patent office practice. Therefore, even if legal or technical assistance is not mandatory, it is strongly recommended. It is advisable to rely on a patent attorney who has the relevant legal knowledge and experience, as well as a technical background in the technical field of the invention.



In South Africa, a complete patent application can be lodged at the South African patent office only if the specification is signed by a registered patent attorney, so it is necessary to consult with a patent attorney before filing an application. Most patent attorneys will modify a provisional application before signing it to ensure it complies with the legal requirements. This can be costly if the provisional application has been badly drafted. It is, therefore, often more cost effective to consult a patent attorney early on.

Proofreading a granted patent

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

Summary checklist

- **Is your invention patentable?** Conduct a prior art search and make good use of patent databases. If you are uncertain about the patentability of the invention, consult a specialist patent attorney who can assist in the search and the preparation of an opinion.
- **Filing a patent application** – consider using a patent attorney in the preparation of the specification and the accompanying documents. Consider which application process is more suitable to the business needs of your company.
- **Timing of application** – consider reasons for filing the application early or later, and decide which is the best approach for your patent application.
- **Confidentiality** – do not disclose information on the invention too early in order not to compromise its patentability.
- **Renewal fees** – remember to pay the renewal fees in time to maintain your patent. It is possible to have a patent firm manage the payment of these.

Can you apply for protection of many inventions through one application?

Most patent laws provide for certain limitations on the number of different inventions that may be included in one patent application. These limitations include the so-called requirement of unity of invention. Whereas some patent laws, such as those in the US, provide for other types of requirements of unity of invention, others, such as the European

Patent Convention and the PCT, permit groups of inventions to be linked to form a single “inventive concept” to be included in a single application.

The requirement in South Africa is similar to that of the European Patent Convention in that the Patent Act provides that a patent shall be granted for one invention only, but no person may, in any proceedings, object to a patent on the ground that it comprises more than one invention.

In case of lack of unity of invention , the applicant may be required to either restrict the claims or divide the application. As a result of differences in the applicable laws, one patent application may suffice in some countries, whereas in others, two or more applications may have to be filed to cover the same ground.

PATENTING ABROAD

Why apply for patents abroad?

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

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

When should you apply for patent protection abroad?

The date of your first application for a given invention is called the priority date, and any subsequent applications in other countries filed by you within 12 months (the priority period) will benefit from the earlier application and will have priority over other applications for the same invention filed by others after the priority date. It is critical that you file your foreign patent applications within the priority period, or that you file under the PCT within that time, which will give you 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 becomes open for public inspection, provided that it has been kept strictly secret, you will still be able to apply for protection for the same invention in other countries, but you can no longer claim priority based on your earlier application. Once the invention has been disclosed or published, you will be unable to obtain patent protection in most foreign countries because of loss of novelty.

Where should you protect your invention?

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

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

How to apply for patent protection abroad

There are three main ways to protect an invention abroad:

The national route – you can apply to the national patent office of each country of interest by filing a patent application in the required language and paying the required fees. This path may be cumbersome and expensive you are applying in a number of countries.

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

- The African Intellectual Property Organisation (www.oapi.wipo.net)
- The African Regional Industrial Property Organisation(www.aripo.org)

- The Eurasian Patent Organisation (www.eapo.org)
- The European Patent Office (www.epo.org)
- The Patent Office of the Cooperation Council for the Arab States of the Gulf (www.gccpo.org)
- **The international route** – if your company wants to have the option of protecting an invention in any number of member countries of the PCT, you should consider filing an international PCT application. To be eligible to do so, you must be a national or resident of a PCT contracting state, which South Africa is. Alternatively, your business must have a real and effective industrial or commercial presence in one of these countries. By filing one international application under the PCT, you may later seek patent protection in any of the more than 144 member countries. This application may be filed either at your national or regional patent office, and/ or at the PCT receiving office at the WIPO in Geneva, Switzerland. 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 in which applicants can explore the commercial potential of their product in various countries and decide where to seek patent protection. This delays the payment of fees and translation costs associated with national applications. 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 decisions about whether and where to pursue patent protection. The International Search Report contains a list of prior art documents from all over the world, which have been identified as relevant to the invention. The Written Opinion of the International Searching Authority analyses the potential patentability in light of the results of the International Search Report. A single PCT application, in one language and with one set of fees, has legal effect in all PCT member countries. This effect significantly reduces the initial transaction costs of submitting separate applications

to each patent office. The PCT may also be used to file applications under some of the regional patent systems. Guidance on how to submit an international application under the PCT can be obtained from your national patent office and at www.wipo.int/pct.

Outline of the PCT application process

An application is filed at a national patent office (such as the CIPC in South Africa). This application provides the so-called 'earliest priority date' of the application. Twelve months from the earliest priority date, a PCT application is filed at an international receiving office. The international receiving office records the international filing date, conducts an international search and provides a written opinion based on this. This usually takes place 16 months from the earliest priority date. Eighteen months from the earliest priority date, the international application is published and becomes open for public inspection. It is possible for the applicant to request a further international preliminary examination 22 months from the earliest priority date. The international report on patentability usually issues about 28 months from the earliest priority date. National or regional applications must be filed in each of the countries or regions where the applicant wants protection. This must take place within 30 or 31 months from the earliest priority date (depending on the national laws of the country). Each of these national or regional applications must then be prosecuted independently in each country or region.

Summary checklist

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

COMMERCIALISING PATENTED TECHNOLOGY

How do you commercialise patented technology?

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

- commercialising the patented invention directly
- selling the patent to someone else
- licensing the patent to others
- establishing a joint venture or other strategic alliance with others having complementary assets

How do you take a patented product to market?

The commercial success of a new product in the market does not only depend 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 the prices of competing or substitute products.

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

Can you sell your patent?

Selling, or assigning, your patent will permanently transfer its ownership to another person. Such a decision must be very carefully considered. By licensing your patent instead of assigning it, you obtain the benefit of royalties for the remainder of the life of the patent. Licensing can be a financially rewarding strategy. Assignment, on the other hand, means you receive an agreed-upon payment once, with no future royalties, regardless of how profitable the patent ends up being.

There may be occasions when an assignment is advantageous. If a patent is sold for a lump sum, you get the value immediately, without having to wait up to 20 years to realise that value progressively. You also avoid the risk that the patent may be superseded by another technology. 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 your needs and priorities. However, assigning a patent is generally not recommended, and patent owners generally prefer to maintain ownership of their inventions and grant licences.

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

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

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

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

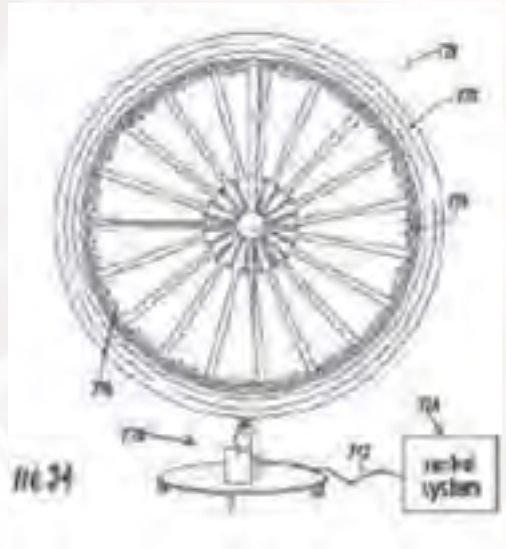
As a licence agreement requires skilled negotiations and drafting, it is advisable to seek the assistance of a licensing practitioner to negotiate the terms and conditions, and for

drafting the licensing agreement. Some countries, not South Africa, require licensing agreements to be registered with a government regulatory authority.

Example

A patent that has been published for an invention entitled “Wind turbine”. Inventions that relate to alternative energy sources could be of great value if protected and licensed.

21: 2014/09135 22: 2011/12/12 43: 2012/05/13
51: FOOD
71: E-NME, LLC
72: MAHAWELI, Imad
33: US 31: 01/179,965 32: 2009/05/20
83: US 31: 61/179,803 32: 2009/05/20
54: WIND TURBINE
00: -
A wind turbine includes a rotary shaft having an axis of rotation, a plurality of turbine blades supported for rotary motion by the shaft, and a plurality of magnets supported by and spaced outwardly from the rotary shaft. The blades are mounted to the shaft by a mount that is radially inward of the magnets wherein the magnets have an annular velocity of at least the annular velocity of the blades. This turbine also includes a conducting coil, which is located outwardly from the magnets and the blades, wherein the coil surrounds the magnets and the blades and which is sufficiently close to the magnets such that rotary movement of the magnets induces current flow in the coil. The electrical power extracted from the wind turbine may be harvested in a continuous manner, a pulsed manner, or a hybrid manner.



What royalties should you expect to receive for your patent?

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

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

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

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

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

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

Should you apply for an exclusive or non-exclusive licence for your patent?

The choice of whether to obtain an exclusive or non-exclusive licence for your patent depends on the product and on your company's business strategy. For example, if your technology can become a standard that is needed by all players in a specific market to perform their business, a non-exclusive licence would be the most advantageous. If your product needs one company to invest heavily to commercialise the product, such as a pharmaceutical product that requires investments in performing clinical trials, a potential licensee would not want to face competition from other licensees, and may rightly insist on obtaining an exclusive licence.

When is the best time to license your invention?

The timing of licensing your invention is case-specific. However, for an independent entrepreneur or inventor, it is often advisable to start the search for licensees as early as possible to guarantee a revenue stream to cover the costs of patenting. There is no need to wait for the patent to be granted.

It is critical to find the right partner(s) to generate profits from the commercialisation of the patented invention.

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

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

Patent valuation

There are many different reasons it might be beneficial or necessary for a company to conduct a patent valuation, including accounting purposes, licensing, mergers or acquisitions, assignment or purchase of intellectual property assets, or fundraising. Although there is no patent valuation method that is suitable in all circumstances, the most widely used methods are:

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

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

Summary checklist

- **Commercialisation** – consider the different options for commercialising your patented invention and make sure you have a convincing business plan if you decide to take an innovative product to market.
- **Licensing** – royalty rates and other features of licensing agreements are a function

of negotiation. It is advisable to seek expert advice when drafting and negotiating licensing agreements.

- **Exclusive vs non-exclusive licences** – consider the reasons for applying for exclusive or non-exclusive licences, particularly in the light of the maturity of the technology and your company's business strategy.
- **Cross-licensing** – see whether you can use your patent(s) to access useful technology owned by others.

ENFORCING PATENTS

Why should you enforce patent rights?

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

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

Who is responsible for enforcing patent rights?

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

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

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

If you believe that others are infringing your patent and using it without your authorisation, as a first step, you need to collect information about the infringing party(ies) and their use of the infringing product or process. You should accumulate all available facts to determine the nature and timing of your action. Engage a patent lawyer to assist you in making a decision on the infringement of your patented invention.

In some cases, when infringement is detected, companies choose to send a letter or have a firm of attorneys send a letter, commonly known as a letter of demand, informing the alleged infringer of a possible conflict between your rights and the other company's business activity. This procedure is often effective in the case of non-intentional infringement as the infringer will in many such cases either discontinue infringing activities or agree to negotiate a licensing agreement.

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

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

To prevent the import of goods that infringe patents, measures at the international border may be available to patent holders in some countries through the national customs

authorities. Many countries, however, provide for border measures in accordance with their international obligations only in cases of the import of counterfeit trademark goods and pirated copyright goods. In South Africa, it is possible to notify customs and excise that a product has been found to infringe a patent. If a court order can be produced, customs and excise will then seize the infringing items upon importation.

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

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

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

Arbitration generally has the advantage of being a less formal and shorter procedure than court proceedings, and an arbitral award is more easily enforceable internationally. An advantage of mediation is that the parties retain control over the dispute resolution process. As such, it can help to preserve good business relations with another enterprise with which your company may wish to collaborate in future.

The WIPO Arbitration and Mediation Centre provides services for alternative dispute resolution. More information on arbitration and mediation can be found at www.wipo.int/amc/en.

Summary checklist

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

ANNEXURES

Annexure I: Useful websites

For more information on:

Patents in general www.wipo.int/patentscope/en

Practical aspects relating to the filing of patent applications. See the list of websites of national and regional patent offices available in Annex II or www.wipo.int/directory/en/urls.jsp

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

International patent classification www.wipo.int/classifications/ipc/en

Arbitration and mediation www.wipo.int/amc/en

Online patent databases of national and regional patent offices www.wipo.int/wipogold/en

Enforcement of intellectual property rights www.wipo.int/enforcement

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

Annexure II: National offices

Afghanistan	http://moic.gov.af/en
Albania	www.alpto.gov.al/home.asp?l=en
Algeria	www.inapi.org
Andorra	www.omp.ad
Angola	www.mingmi.gov.ao
Antigua and Barbuda	www.antigua.gov.ag
Argentina	www.inpi.gov.ar/templates/index.asp
Armenia	www.aipa.am/hy
Australia	www.ipaustralia.gov.au
Austria	www.patentamt.at
Azerbaijan	www.azstand.gov.az
Bahamas	www.bahamas.gov.bs/rgd
Bahrain	www.moic.gov.bh/moic/en
Bangladesh	www.dpdt.gov.bd
Barbados	www.caipo.gov.bb/site/index.php
Belarus	www.belgospatent.org.by
Belgium	http://economie.fgov.be/en/entreprises/Intellectual_property.
Belize	www.belipo.bz
Bhutan	www.ipbhutan.gov.bt/aboutus.aspx
Bolivia	www.senapi.gob.bo
Bosnia and Herzegovina	www.ipr.gov.ba/en
Botswana	www.mti.gov.bw
Brazil	www.inpi.gov.br
Brunei Darussalam	www.agc.gov.bn
Bulgaria	www.bpo.bg
Burkina Faso	www.commerce.gov.bf
Burundi	www.commerceetindustrie.gov.bi
Cambodia	www.moc.gov.kh
Canada	www.cipo.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/ eng/Home

Chile	www.inapi.cl/portal/institucional/600/w3-channel.html
China	http://sbj.saic.gov.cn
Columbia	www.sic.gov.co
Costa Rica	www.mjp.go.cr
Croatia	www.dziv.hr
Cuba	www.ocpi.cu
Cyprus	www.mcit.gov.cy
Czech Republic	www.upv.cz/cs.html
Democratic People's Republic of Korea	www.dprkorea-trade.com/patents/rsipatent.htm
Denmark	www.dkpto.org
Djibouti	www.mci.dj
Dominican Republic	http://onapi.gob.do
Ecuador	www.iepi.gob.ec
Egypt	www.mfti.gov.eg
El Salvador	www.cnr.gob.sv
Estonia	www.patentinfo.ee
Ethiopia	www.eipo.gov.et
Fiji	www.ag.gov.fj
Finland	www.prh.fi
France	www.inpi.fr
Gabon	http://cepig.net
Georgia	www.sakpatenti.org.ge
Germany	www.dpma.de
Guatemala	www.rpi.gob.gt
Holy See	www.vaticanstate.va/FR/homepage.htm
Honduras	www.digepih.webs.com
Hungary	www.hipo.gov.hu/English
Iceland	www.els.is
India	www.ipindia.nic.in

Indonesia	http://merek-indonesia.dgip.go.id
Iran (Islamic Republic of)	http://iripo.ssaa.ir
Ireland	www.patentsoffice.ie
Israel	http://index.justice.gov.il
Italy	www.uibm.gov.it
Jamaica	www.jipo.gov.jm
Japan	www.jpo.go.jp
Jordan	www.mit.gov.jo
Kazakhstan	www.kazpatent.kz
Kenya	www.kipi.go.ke
Kyrgyzstan	http://patent.kg/en
Lao Peoples Democratic Republic	www.stea.la.wipo.net/index.html
Latvia	http://www.lrvp.lv
Lebanon	www.economy.gov.lb
Liechtenstein	www.avw.llv.li
Lithuania	www.vpb.lt
Luxembourg	www.eco.public.lu
Madagascar	www.omapi.mg
Malaysia	www.myipo.gov.my
Maldives	www.trade.gov.mv
Malta	https://secure2.gov.mt/IPO/default.aspx?ct=2&date=22022013111244
Mauritius	www.gov.mu/portal/site/mfasite/menuitem.d26b8c9d73facdfa4522e10a0208a0c
Mexico	www.impi.gob.mx
Monaco	http://en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Finance-and-Economy/Business-Development-Agency
Mongolia	www.ipom.mn
Montenegro	www.ziscg.me

Morocco	www.ompic.org.ma
Mozambique	www.ipi.gov.mz
Nepal	http://doind.gov.np/index.php
Netherlands	www.agentschapnl.nl/en
New Zealand	www.iponz.govt.nz/cms
Nicaragua	http://rpi.mific.gob.ni
Norway	www.patentstyret.no
Oman	www.mocioman.gov.om
Pakistan	www.ipo.gov.pk
Panama	www.digerpi.gob.pa
Papua New Guinea	www.ipopng.gov.pg
Paraguay	www.mic.gov.py/v1/index.php
Peru	www.indecopi.gob.pe/0/home.aspx?PFL=0&ARE=0
Philippines	www.ipophil.gov.ph/index.php
Poland	www.uprp.pl/strona-glowna/Menu01,9,0,index,pl
Portugal	www.marcaspatentes.pt/index.php?section=1
Republic of Korea	www.kipo.go.kr
Republic of Moldova	www.agepi.md
Romania	www.osim.ro
Russian Federation	www.rupto.ru/en_site/index_en.htm
Rwanda	http://org.rdb.rw
Saint Vincent and Grenadines	www.cipo.gov.vc
Samoa	www.mcil.gov.ws
Sao Tome and Principe	http://senapi-stp.net/spip.php?rubrique1
Serbia	www.zis.gov.rs/pocetna.1.html
Singapore	www.ipos.gov.sg
Slovakia	www.upv.sk
Slovenia	www.uil-sipo.si
South Africa	www.cipc.co.za

Spain	www.oepm.es
Sri Lanka	www.nipo.gov.lk
Swaziland	www.gov.sz/index.php?option=com_content &view=article&id=228&Itemid=306
Sweden	www.prv.se
Switzerland	https://www.ige.ch
Syrian Arab Republic	www.spo.gov.sy
Tajikistan	www.ncpi.tj/index2.php
Thailand	www.ipthailand.go.th/ipthailand/index.php?lang=en
The former Yugoslav Republic of Macedonia	www.ippo.gov.mk
Timor-Leste	www.mj.gov.tl
Tonga	www.mlci.gov.to/?page_id=1042
Trinidad and Tobago	www.legalaffairs.gov.tt/ipo
Tunisia	www.innorpi.tn/Fra/accueil_46_4
Turkey	www.turkpatent.gov.tr
Uganda	See ARIPO regional office below
Ukraine	http://sips.gov.ua/en/index.html
United Arab Emirates	www.economy.gov.ae/Arabic/Pages/default.aspx
United Kingdom	www.ipo.gov.uk
United States of America	www.uspto.gov
Uruguay	www.dnpi.gub.uy
Uzbekistan	www.ima.uz/ru
Venezuela (Bolivarian Republic of)	www.sapi.gob.ve
Vietnam	www.noip.gov.vn
Yemen	www.yipo.gov.ye
Zambia	www.pacra.org.zm
Zimbabwe	See ARIPO regional office below

Regional offices

African Intellectual Property Organisation (OAPI)	www.oapi.int
African Regional Intellectual Property Organisation	www.aripo.org
Benelux Office for Intellectual Property	www.boip.int
Eurasian Patent Organisation	http://www.eapo.org/en
European Patent Organisation	www.epo.org
Office for Harmonisation in the Internal Market	http://oami.europa.eu/ows/rw/pages/index.en.do
Patent Office of the Cooperation Council for the Arab States of the Gulf	www.gcc-sg.org/eng

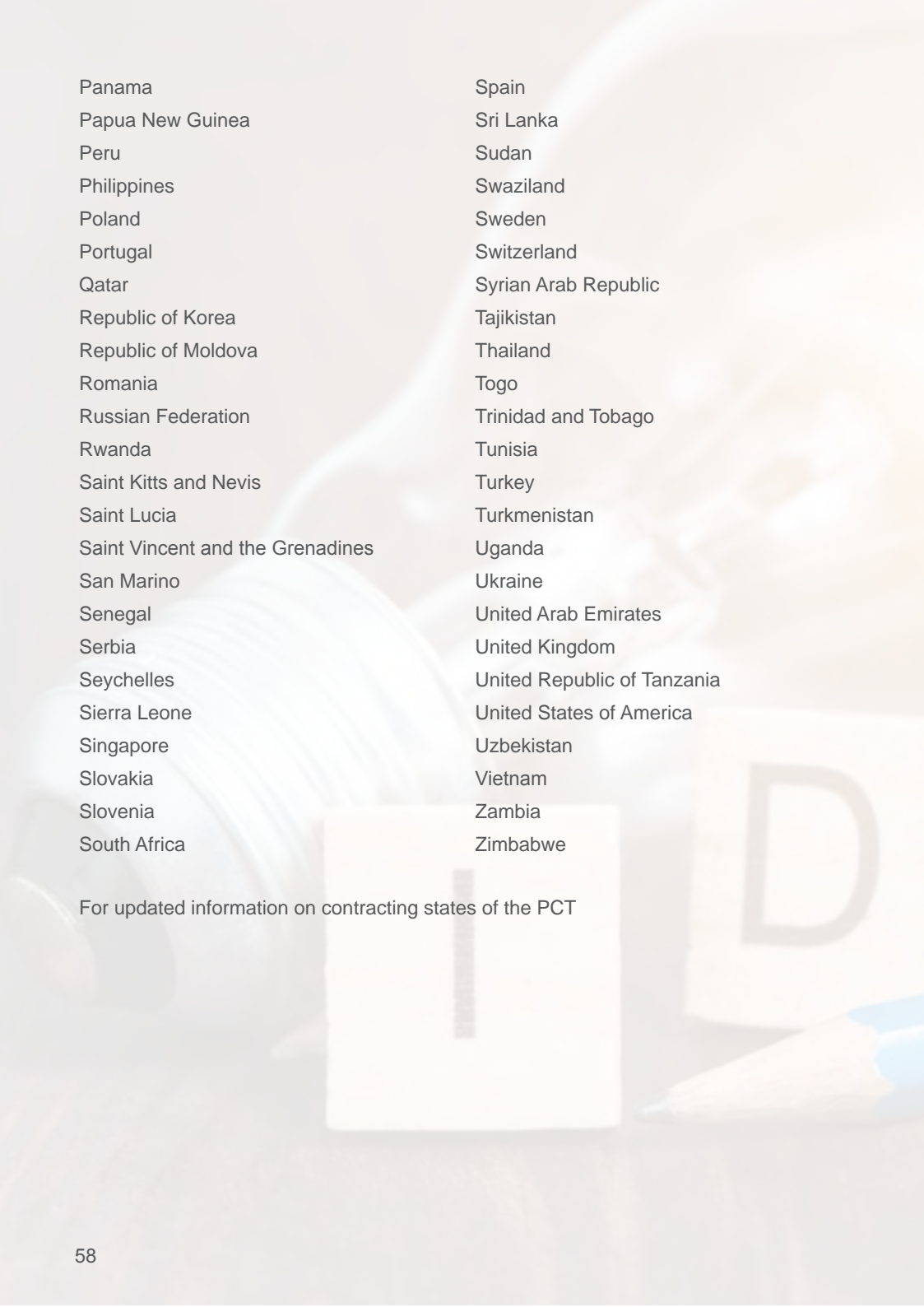
Note: For updated information, visit www.wipo.int/directory/en/urls.jsp

Annexure III: Contracting states of the PCT

Albania	Bosnia and Herzegovina
Algeria	Botswana
Angola	Brazil
Antigua and Barbuda	Brunei Darussalam
Argentina	Bulgaria
Armenia	Burkina Faso
Australia	Cameroon
Austria	Canada
Azerbaijan	Central African Republic
Bahrain	Chad
Barbados	Chile
Belarus	China
Belgium	Colombia
Belize	Comoros
Benin	Congo



Costa Rica
Côte d'Ivoire
Croatia
Cuba
Cyprus
Czech Republic
Democratic People's Republic of Korea
Denmark
Dominica
Dominican Republic
Ecuador
Egypt
El Salvador
Equatorial Guinea
Estonia
Finland
France
Gabon
Gambia
Georgia
Germany
Ghana
Greece
Grenada
Guatemala
Guinea
Guinea-Bissau
Holy See
Honduras
Hungary
Iceland
India
Indonesia
Iran (Islamic Republic of)
Ireland
Israel
Italy
Japan
Kazakhstan
Kenya
Kyrgyzstan
Lao's Peoples Democratic Republic
Latvia
Lesotho
Liberia
Libya
Liechtenstein
Lithuania
Luxembourg
Former Yugoslav Republic of Macedonia
Madagascar
Malawi
Malaysia
Mali
Malta
Mauritania
Mexico
Monaco
Mongolia
Montenegro
Morocco
Mozambique
Namibia
Netherlands
New Zealand
Nicaragua
Niger
Nigeria
Norway
Oman



Panama
Papua New Guinea
Peru
Philippines
Poland
Portugal
Qatar
Republic of Korea
Republic of Moldova
Romania
Russian Federation
Rwanda
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
San Marino
Senegal
Serbia
Seychelles
Sierra Leone
Singapore
Slovakia
Slovenia
South Africa
Spain
Sri Lanka
Sudan
Swaziland
Sweden
Switzerland
Syrian Arab Republic
Tajikistan
Thailand
Togo
Trinidad and Tobago
Tunisia
Turkey
Turkmenistan
Uganda
Ukraine
United Arab Emirates
United Kingdom
United Republic of Tanzania
United States of America
Uzbekistan
Vietnam
Zambia
Zimbabwe

For updated information on contracting states of the PCT

Publications in the *Intellectual Property for Business* series:

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- 2. Looking Good:** An Introduction to Aesthetic Designs for Small and Medium-sized Enterprises
- 3. Inventing the Future:** An Introduction to Patents and Functional Designs for Small and Medium-sized Enterprises
- 4. Creative Expressions:** An Introduction to Copyright for Small and Medium-sized Enterprises

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