

Intellectual Property
for Business Series
No. 3

INVENTING THE FUTURE

An Introduction to
Patents for Small
and Medium-sized
Enterprises in Pakistan



Publications in the “Intellectual Property for Business” Series:

1. Making A Mark - An introduction to Trademarks for Small and Medium-sized Enterprises.
2. Looking Good – An introduction to Industrial Designs for Small and Medium-sized Enterprises.
3. Inventing the Future - An introduction to Patents for Small and Medium-sized Enterprises.
4. Creative Expression - An introduction to Copyright and Related Rights for Small and Medium-sized Enterprises.

The adapted versions of the above mentioned publications are available at the WIPO (WIPO e-bookshop at www.wipo.int/ebookshop) and SMEDA website (SMEDA publications at www.smeda.org.pk).

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Preface

'*Intellectual Property*' till recently has been considered a luxury by the industry in general and SMEs in particular. In fact, it is a major avenue for SMEs to establish their credentials at par with the large enterprises. Every business has some valuable intangible property worth protecting. Keeping SMEs abreast of the latest information on Intellectual Property Rights (IPRs) systems and to enable them to protect their IP assets is, indeed, the need of the hour. Ignorance in this field may lead to loss of valuable rights or expensive litigation or both.

This customized version of 'Inventing the Future' is dedicated to a description of the basics of patents, benefits to be derived and steps to seek patent protection of new and innovative technologies and processes. This has been illustrated with the help of matching real examples of Pakistani businesses. Innovative SMEs constantly engaged in developing new and improved products or manufacturing processes should take a keen note of the contents. Admittedly, the process of patent protection is complex; however, it is time SMEs realize the immense long-term benefits to be reaped from granted patents far outweighing the investment in terms of money and time involved.

The efforts of the SMEDA core team comprising of Mr. Muhammad Jamil Afaqi, Ms. Aisha Amjad Mir and Mr. Shaheen Tahir as well as Ms. Tanya Hafeez supported by Mr. Liaqat Ali Gohar are commendable in producing this publication.

I hope SMEs will take advantage of this work produced under the joint effort of the World Intellectual Property Organisation (WIPO) and Small and Medium Enterprises Development Authority (SMEDA), to opt for protecting their inventions by use of Patent System to maximize accrual of benefits from monopoly right granted with the patent for use and commercialization of the inventions.

Shahid Rashid
CEO SMEDA

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1 Patents

What is a Patent?

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

the invention to the public by providing a detailed, accurate and complete written description of the invention in the patent application. The granted patent is made public via publication in the official gazette.

In Pakistan, patent is granted by the Patent Office in accordance with the provisions of the Patents Ordinance, 2000. As per section 7 of the Ordinance, an invention is patentable if it is new, involves an inventive step and is capable of industrial application. A patent can remain valid for a limited period of time, i.e. for 20 years from the date of filing of the patent application, provided the required maintenance fees are paid on time. A patent is a territorial right limited to the geographical boundary of the relevant country or region.

Example:

An innovation which provides a unique headlight glass lens of an automobile is patented in Pakistan by Khawaja Muhammad Hanif. This patent describes the process for the preparation of the said headlight glass.



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

A valid patent gives its owner the exclusive right to prevent or stop others from making, using, offering for sale, selling or importing a product or a process, based on the patented invention, without the owner's prior permission.

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



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

In return for the exclusive right provided by a patent, the applicant is required to disclose

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What is an invention?

In patent terminology, 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 a new and useful 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 skill, creativity and inventiveness must be involved.

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

The power of innovation

Appreciating the distinction between "invention" and "innovation" is important.

Invention refers to a technical solution to a technical problem. It may be an innovative idea or may be in the form of a working model or prototype.

Innovation refers to the translation of the invention into a marketable product or process. Some of the main reasons why companies innovate include:

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

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

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

Why should you consider patenting your inventions?

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

- Strong market position and competitive advantage. A patent gives its owner the exclusive right to prevent or stop others from commercially using the patented invention. This exclusive right reduces uncertainty, risk and competition from free riders and imitators. If your

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company owns or obtains the permission to exploit a valuable patented invention, it may be able to create a market entry barrier for competitors in respect of the same inventions. This will help it to become a top player in the relevant market(s).

- Higher profit or returns on investment. If your company has invested a significant amount of time and money in R&D, patent protection of the resulting inventions would help in recovering costs and obtaining higher returns on investments.

- Additional income from licensing or assigning the patent. As a patent owner you may license your rights over the invention to others in exchange for lump-sum payments and/or royalties, in order to generate additional income for the company. Selling (or assigning) a patent implies transfer of ownership, whereas licensing implies only permission to use the licensed invention under specified conditions.

- Access to technology through cross-licensing. If your company is interested in technology owned by others you may use your company's own patents to negotiate cross-licensing agreements, by which your company and the other party agree to authorize each other to use one or more of your respective patents under conditions specified in the agreement.

- Access to new markets. Licensing of patents (or even pending patent applications) to others may provide access to new markets, which are otherwise inaccessible. In order to do so, the invention must also be protected in the relevant foreign market(s).

- Minimized risks of infringement.

By obtaining patent protection you will be able to prevent others from patenting the same invention and also reduce the chances

of infringing the rights of others when commercializing your products. While a patent by itself does not provide the "freedom to use", it does prevent others from patenting the same or similar inventions and provides a reasonable indication that the invention that you have patented is new and significantly different from the "state of the art."

- Enhanced ability to obtain grants and/or raise funds at a reasonable rate. Ownership of patents (or license to use patents owned by others) may enhance your ability to raise capital to take a product to market. In some sectors (e.g., biotechnology), it is often necessary to have a strong patent portfolio to attract the investors.

- A powerful tool to take action against imitators and free riders. In order to effectively enforce the exclusivity provided by a patent, it may occasionally be necessary to litigate, or bring your patents to the attention of those who are violating your patent rights. Owning a patent considerably improves your ability to take successful legal action against copiers and imitators of the protected invention.

- Positive image for your enterprise. Business partners, investors, shareholders and customers may perceive patent portfolios as a demonstration of the high level of expertise, specialization and technological capacity of your company. This may prove useful for raising funds, finding business partners and raising your company's profile and market value. Some companies mention or list their patents in advertisements to project an innovative image to the public.

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Patent No. US2002137433.

An innovative award-winning drill bit used to make holes on glass and ceramics was patented by Peruvian Inventor Jose Vidal Martina enabling him to commercialize the product directly as well as earn royalties from the licensing of the invention.

What other legal instruments are available for protecting your products?

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

- Trade Secrets. Confidential business information may benefit from trade secret protection provided under the Trade Marks Ordinance, 2001, 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).
- Industrial designs. Exclusive rights over the ornamental or aesthetic features of a product may be obtained through the protection of industrial designs by registering the same with the Patent Office in accordance with the Registered Designs Ordinance, 2000. (For more information

please visit www.ipo.gov.pk or www.smeda.org.pk).

- Trademarks. Trademark protection provides exclusive rights over distinctive signs used to distinguish the products of one company from those of others. (For more information please visit www.ipo.gov.pk or www.smeda.org.pk).
- 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. (For more information please visit www.ipo.gov.pk or www.smeda.org.pk).
- Layout-design (or topography) of integrated circuits. You may be able to obtain protection for an original layout design (or topography) of an integrated circuit used in microchips and semiconductor chips. Such protection may extend also to the final product incorporating the layout design. (For more information please visit www.ipo.gov.pk or www.smeda.org.pk).

Note: In some countries some types of incremental inventions or small adaptations to existing products are protectable as "Utility Models". While, "Plant Breeder's Rights" are granted to a breeder of a new plant variety, which fulfills the requirements of novelty, distinctiveness, uniformity, stability and designated with a suitable denomination. However, both these IP rights do not exist in Pakistan.

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

If an invention is patentable, it does not necessarily mean 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

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

to file a patent application is strictly a business decision. It should be based primarily on the probability of obtaining commercially useful protection for the invention that is likely to provide significant benefits from its eventual business use.

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

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

Patents versus Trade Secrets

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

In Pakistan, the protection of trade secrets is available in Section 67 of the Trade Marks Ordinance, 2001, under the head of unfair competition. The trade secrets can also be protected by contractual provisions in agreements with employees, consultants, customers, and business partners and may be enforced under the contract law.

Advantages of trade secret protection include:

- Trade secrets involve no registration costs;
- Trade secret protection does not

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require disclosure or registration with any authority or office of the government and the invention is not published;

- Trade secret protection is not limited in time;
- Trade secrets have immediate effect.

Disadvantages of protecting inventions as trade secrets:

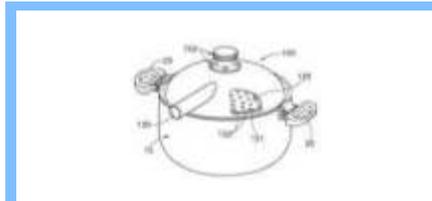
- If the secret is embodied in an innovative product, others may be able to "reverse engineer" it, discover the secret and, thereafter, be entitled to use it;
- Trade secret protection is effective only against improper acquisition, use or disclosure of the confidential information;
- If a secret is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

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

What can be patented?

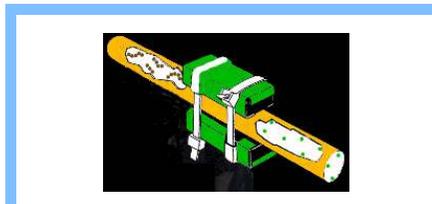
An invention must meet several requirements to be eligible for patent protection. These include, in particular, that the claimed invention:

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



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

The best way of understanding these requirements is to study what has been patented by others in the technical field of your interest. For this, you may consult patent databases.



*Example:
The device which is patented by AZMS Electronic
Communications under Patent No. 38823 controls
electronic rust and corrosion for all types of
vehicles.*

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What is patentable subject matter?

Under the Patents Ordinance, 2000, patentable subject matter is defined negatively, i.e., by providing a list of what cannot be patented. This list is divided into two parts. First part contains the subject matter which is not considered an invention and hence is not patentable. This part includes the following subject matter:

- (a) A discovery, scientific theory or mathematical method;
- (b) A literary, dramatic, musical or artistic work or any other creation of purely aesthetic character whatsoever;
- (c) A scheme, rule or method for performing a mental act, playing a game or doing business;
- (d) The presentation of information; and
- (e) Substances that exist in nature or if isolated therefrom.

The second part consists of the subject matter which even though may qualify as an invention but patent rights will not be granted regarding the same. This includes:

- (a) An invention, the prevention of commercial exploitation of which would be necessary to protect the public order or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment;
- (b) Plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes;
- (c) Diagnostic, therapeutic and surgical methods for the treatment of humans or animals;
- (d) A new or subsequent use of a known product or process; and
- (e) A mere change in physical appearance

of a chemical product where the chemical formula or process of manufacture remains the same.

Protecting Computer Software

In some countries, the mathematical algorithms, which are the basis of improved functionality of computer software, may be protected by patents, while in others, they are explicitly excluded as unpatentable subject matter.

In Pakistan, the Patents Ordinance, 2000, does not discuss the issue of patentability of the computer programs at all. However, it is important to note that the Patents Ordinance excludes "literary work" from the ambit of patentable inventions. The term "literary work" has not been defined in the Patents Ordinance, but is defined in the Copyright Ordinance, 1962 and includes computer programs. This gives an impression that computer programs may not be patentable in Pakistan. However, it is advisable that you consult the issue directly with the Patent Office prior to filing of a patent for a computer program and/or discuss the issue with a qualified IP lawyer.

In Pakistan the object and source code of computer programs can be protected by copyright only. To obtain copyright protection, registration of your copyright is not compulsory. In other words, even though you have not obtained registration of the object and source code of your computer program from the competent authority, you can still claim protection of your copyright from a court of law. However, registration of copyright is always advisable as, among other things, it

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works as an evidence to prove that the work has been created by you. You may apply for registration of copyright by making an application on the prescribed form along with the prescribed fee to the Registrar of Copyrights. For your convenience, address of the Copyright Office has been given at Annex I.

Copyright protection is more limited in scope than patent protection, as it only covers the expression of an idea and not the idea itself. Many companies protect the object code of computer programs by copyright, while the source code is kept as a trade secret.

How is an invention judged to be new or novel?

An invention is new or novel if it does not form part of the "state of the art" (also known as "Prior Art"). In general, "state of the 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 others, patents, patent applications and non-patent literature of all kinds.

In Pakistan, any information disclosed to the public anywhere in the world in tangible form, by oral communication, by display or through public use in any other way, prior to filing an application for patent, constitutes "state of the art". Thus, in principle, the publication of the invention in a scientific journal, its presentation in a conference, its use in commerce or its display in a company's catalogue would all constitute acts that could destroy the novelty of the

invention and render it unpatentable. It is important to prevent accidental disclosure of inventions prior to filing the patent application. Assistance of a competent patent agent is often crucial for a clear determination of what is included in the "state of the art".

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, prior to filing of the application, taking into account the "state of the art", the invention would not have been obvious to a person skilled in the particular field of technology. The non-obviousness requirement is meant to ensure that patents are only granted in respect of truly creative and inventive achievements, and not to developments that a person with ordinary skill in the field could easily figure out from what already exists.

Some examples of what may not qualify as inventive are: mere change of size; making a product portable; the reversal of parts; the change of materials; or the mere substitution by an equivalent part or function.



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

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What is meant by "capable of industrial application"?

To be patentable, an invention must be capable of being used for an industrial or business purpose i.e., it should be capable of being manufactured or otherwise industrially used. An invention cannot be a mere theoretical phenomenon; it must be useful and provide some practical benefit. The term "industrial" should be taken in the broadest sense as anything distinct from purely intellectual or aesthetic activity and may include, for example, agriculture.

In some countries, instead of industrial applicability, the criterion is utility. The utility requirement has become particularly important for patents on genetic sequences for which a utility may not be known at the time of filing the application.

What is the disclosure requirement?

According to the Patents Ordinance, 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. For patents involving micro-organisms, the law requires that the micro-organism be deposited at a recognized depositary institution. Pakistan recognizes the international depositary authorities that have acquired such status in accordance with Article 7 of the Budapest Treaty on the International Recognition of the Deposit of Micro-organisms for the purposes of Patent Procedure done at Budapest in 1977. (A list of International Depositary Authorities is available at: <http://www.wipo.int/treaties/en/registration/budapest/index.html>).

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, including Pakistan, allow for the patenting of inventions involving micro-organisms and require the deposit of a sample of the organism at a recognized depositary institution when the micro-organism is not yet publicly available and cannot be properly described otherwise. Pakistan excludes plants and animals other than micro-organisms from patentability, and also excludes essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. In Pakistan, new varieties of plants may only be protected by the patent system if they fall in any of the above categories. However, a new law for the protection of new varieties of plants is under review and is likely to come into force in near future.

What rights are granted by patents?

A patent grants its owner the right to exclude others from commercially using the invention. The Patents Ordinance grants the following rights to the owner of a valid patent:

- Where the subject matter of a patent is a product, the owner may prevent the third parties from the acts of making, using, offering for sale, selling, or importing for these purposes that product, without his permission.
- Where the subject matter of a patent is a process, the owner may prevent third

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parties from the act of using the process, and from the acts of using, offering for sale, selling, or importing for these purposes at least the product obtained directly by that process, without his permission.

- The owner will also have the right to assign, or transfer by succession, the patent and to grant license of his patent.
- The owner of the patent will also have the right to institute court proceedings against any person who infringes the patent by performing, without his consent, any of the above referred acts or who performs acts which make it likely that infringement will occur.

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. For example, if you invent a product which can be used as a part of another product which is patented by someone else, then you may not be able to use your product even though you have obtained patent for your product. However, since you have patented your product no one else will be able to use your product without your consent.

While this may seem a subtle distinction, it is essential in understanding the patent system and how multiple patents interact. In fact, patents owned by others may overlap, encompass or complement your own patent. You may, therefore, need to obtain a license to use other people's inventions in order to commercialize your own patented invention and vice versa.

Also, before certain inventions (such as pharmaceutical drugs) can be commercialized, other clearances may be

required (e.g., marketing approval from the Federal Government in accordance with the Drugs Act, 1976).

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

The person who conceived the invention is the inventor, whereas the person (or company) that files the patent application is the applicant, holder or owner of the patent. While in some cases the inventor may also be the applicant, the two can also be different entities; this may happen where the applicant is the company or research institution that employs the inventor. However, in such cases names of the owner as well as the inventor will have to be mentioned in the application form for the registration of patent. The following specific circumstances merit further analysis:

- **Employee inventions.** In Pakistan, inventions developed in the course of employment are not automatically assigned to the employer unless there is a specific agreement to that effect or the employer proves that the invention could not have been made without the use of employer's facilities, equipment and the like necessary for the invention. However, even in such cases when an invention is of exceptional economic value, the inventor will be entitled to an equitable remuneration taking into account the nature of his duties, his salary and the benefits derived by the employer.
- **Independent contractors.** An independent contractor hired by a company to develop a new product or process owns all rights to the invention, unless specifically stated otherwise. This means that, unless the contractor has a written agreement with the

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company assigning the invention to that company, in general, the company will have no ownership rights in what is developed, even if it paid for the development.

- **Joint inventors.** When more than one person contributes in significant ways to the conception and realization of an invention, they must be treated as joint inventors and mentioned as such in the patent application. If the joint inventors are also the applicants, the patent will be granted to them jointly.
- **Joint owners.** Where two or more persons are registered as proprietor of a patent, then in absence of any specific agreement, each of those persons will be entitled to an equal undivided share in the patent and will be entitled to exploit, use, exercise and sell the patented invention for his own benefit without accounting to the other person or persons. However, in such a case none of them will issue a license or assign a share in the patent without the consent of the other person or persons. In cases where they cannot reach to a unanimous decision, the Controller of Patents may, upon application made to him in the prescribed manner by any of those persons, give such directions in accordance with the application as to the sale or lease of the patent or any interest therein, the grant of licenses under the patent, or the exercise of any right in relation thereto, as he may think fit.

Summary checklist

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

How to Get a Patent

2 | How to Get a Patent

Where should you start?

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

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

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

The importance of searching patent databases

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

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

How and where can you conduct a state of the art search?

The Patent Office of Pakistan doesn't have any online database at present through which you can search the patent database. However, you can file a request for patent database search on the prescribed form (P-27) alongwith official fee of Rs. 150/-.

The, patents and patent applications published by many patent offices are accessible on-line, making it easier to conduct state of the art searches. (A list of IP

How to Get a Patent

offices that have made their patent databases available online, free-of-charge, may be found at:
www.wipo.int/ipdl/en/resources/links.jsp).

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

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

The International Patent Classification
Pakistan does not use any class system for patent applications. However, for those of you who may wish to file their patents abroad, it may be beneficial to get familiar with the International Patent Classification system.

The International Patent Classification (IPC) is a hierarchical classification system used to classify and search patent documents. It also serves as an instrument for orderly arrangement of patent

documents, a basis for selective dissemination of information and a basis for investigating the state of the art in given fields of technology.

The seventh edition of the IPC consists of 8 sections, which are divided into 120 classes, 628 subclasses and approximately 69,000 groups. The 8 sections are:

- a. Human Necessities;
- b. Performing Operations; Transporting;
- c. Chemistry; Metallurgy;
- d. Textiles; Paper;
- e. Fixed Constructions;
- f. Mechanical Engineering; Lighting; Heating; Weapons; Blasting;
- g. Physics;
- h. Electricity.

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

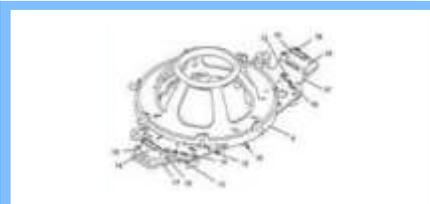
How to apply for patent protection?

After a state of the art search has been performed and the decision to seek patent protection has been made, a patent application has to be prepared and submitted to the Patent Office. The application will include a full description of the invention, the patent claims that determine the scope of the patent applied for, drawings and an abstract. (For more on the structure of a patent application, see the following pages). There is also an option for filing a provisional patent application.

The task of preparing a patent application is generally performed by a patent attorney or agent who will represent your interests during the application process. The basic

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overview of the application process is given below.



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

Processing an application step by step
The procedure for registration of a patent in Pakistan is as follows: -

1. Filing of application: An application is filed with the Patent Office on the prescribed form along with the prescribed fee.
2. Formal examination: The Patent Office examines the application to ensure that it complies with the administrative requirements or formalities (e.g., that all relevant documentation is included and the application fee has been paid). The Patent Office issues application number (official receipt) and advertise the title of the application in the Official Patent Gazette of Pakistan Part-V as newly filed patent application.
3. Search: The Patent Office conducts a search to determine the state of the art in the specific field to which the invention relates. The search report is used during the substantive examination to compare the claimed invention with the state of the art.
4. Substantive examination: The Controller of Patents refers the application

to an examiner for making a report after detail scrutiny of the application, specification, claims and drawing, if any, to the effect as to whether:

- the invention is new;
- involves an inventive step; and
- whether other requirements of the Patents Ordinance and rules have been complied with.

The aim of the substantive examination is to ensure that the application satisfies the patentability requirements. The results of the examination are sent in writing to the applicant (or his attorney) so as to provide an opportunity to respond to and/or remove any objections raised during the examination.

5. Grant: If the examination process reaches a positive conclusion, the patent office accepts the patent application. The accepting of a patent application means that the Patent Office has no objection concerning the grant of the patent in favor of the applicant.

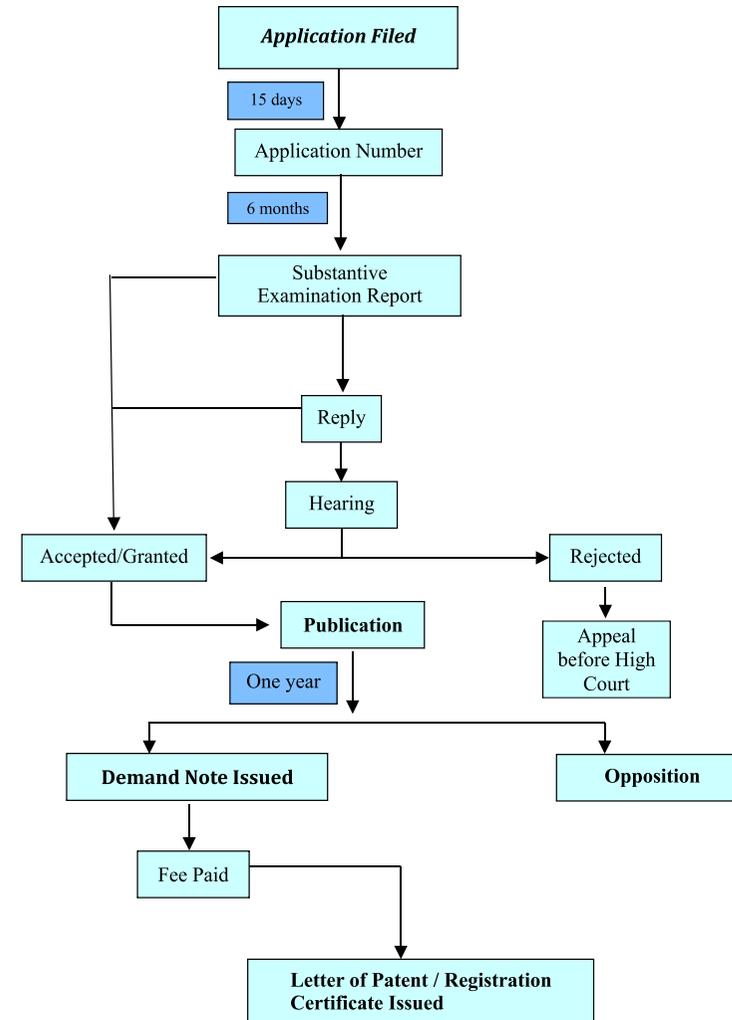
6. Publication: Once the patent application is accepted / granted by the Patent Office, the abstract of the patent application is published in the Official Gazette of Pakistan Part-V for the general public so that if anyone has an objection to the grant of the patent, he may file an opposition against it.

7. Opposition: The Patent Office provides a period of four months during which third parties may oppose the grant of a patent, for example, on the basis that the claimed invention is not new.

8. Sealing of Patent: If there is no opposition within four months by any interested party or any opposition filed has been rejected, then the Patent Office will

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seal the patent on the payment of sealing fee and issue the registration certificate commonly referred to as the Letter of Patent.



* The boxes in dark blue indicate the likely time frame.

* The boxes in sky blue indicate the different stages of application.

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How much does it cost to patent an invention?

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

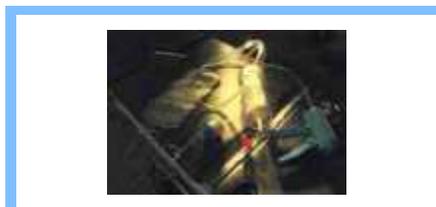
- Costs associated with performing a state of the art search, particularly if you rely on the services of an expert;
- Official fees that are to be paid to the Patent Office. The following official fees are required to be paid:

No.	Description	Fee Rs.
1	Filing Fee a. For each additional page of specification beyond 40 pages b. For each additional claim beyond 20 claims	2,250 30 75
2	Sealing Fee	2,250
3	Renewal fee From 4 th to 8 th year (for one year) From 9 th to 12 th year (for one year) From 12 th to 16 th year (for one year) From 16 th to 20 th year (for one year)	3,000 4,500 6,000 8,000

- If you rely on the services of a patent agent/attorney to assist you in the application process (e.g., provide the patentability opinion, draft the patent application, prepare the formal drawings and correspond with the patent office), you will incur additional costs;
- Once a patent has been granted by the

Patent Office, you must pay maintenance or renewal fees, generally referred to as annuities as the same are paid on an annual basis in accordance with the amount given in the above table, to maintain the validity of the patent;

- In case you decide to patent your invention abroad, you should consider also the relevant official filing fees for the countries in question, the translation costs and the costs of using local patent agents (which is a requirement, in many countries, for foreign applicants);
- In case of inventions involving micro-organisms, where the deposit of the micro-organism or biological material with a recognized depository institution is necessary, fees for filing, storage and viability testing of the deposited material will have to be paid;



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

- Financial Assistance: In order to support development of SMEs, the Government of Pakistan has established institution named Agribusiness Support

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Fund (ASF). This institution provides financial assistance to SMEs in the form of matching grant. If you engage services of a consultant for the purposes of development of a product, its marketing, sales etc. or registration of your Patent, you may avail a grant from ASF in the case of agribusiness. ASF will reimburse 50% of the costs incurred in availing the business development services. (More information about ASF on www.asf.org.pk).

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

- Patents are granted on a first-to-file basis. Thus, filing an application early is important to ensure that you are the first to file an application on that particular invention so that you do not lose your invention to others.
- Applying for patent protection early will generally be useful if you are seeking financial support or wish to license your invention to commercialize it.
- You can generally only enforce a patent once it has been granted. This procedure may take a few years.

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

- If you apply too early and subsequently

make changes to your invention it will generally not be possible to make significant changes to the original specification of the invention and you will have to seek leave to amend the application from the Patent Office. The routine amendments for rectifying clerical errors or elaborating the description can be made in the prescribed manner.

- Once you have filed your application in Pakistan, you will in most cases have 12 months to file an application for the same invention in all the countries of interest to your business in order to enjoy the benefit of the filing date of your first application. This may be a problem if the costs of applying in various countries and paying the maintenance fees are too high for your company.

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

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

If you wish to obtain a patent on your invention, keeping it confidential prior to filing the application is absolutely necessary. In many circumstances, public disclosure of your invention prior to filing the application would destroy the novelty of your invention, rendering it unpatentable, unless it falls in the exception and qualifies

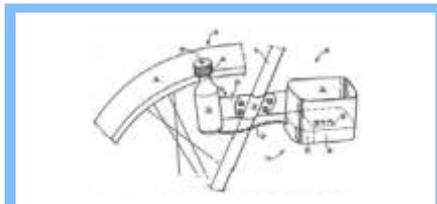
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for a "grace period".

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

Example:

Patent No. 139230 by Dr. Shah Alam Khan et al: A process for the production of high performance cement based on mineral additives.



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

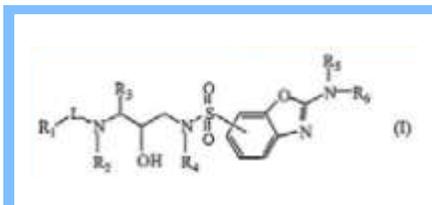
First-to-file versus first-to-invent

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

which may be used as evidence in case of a dispute with another company or inventor.

What is a grace period?

The Patents Ordinance provides a "grace period" of 12 months if an article is exhibited at an official or officially recognized international exhibition within twelve months preceding the date of filing of an application for the grant of patent. It means that you may disclose your invention by displaying it in an official or officially recognized international exhibition and file the patent application within the grace period of 12 months without the invention losing patentability and being barred from obtaining a patent. However, as this is not the case in all countries, therefore relying on the grace period in Pakistan may preclude you from patenting the invention in other markets of interest where a grace period may not be available.



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

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Provisional patent applications

Under the Patents Ordinance you also have the option of filing a provisional patent application. A provisional patent application under the Patents Ordinance is one which is accompanied by a provisional specification of your invention rather than a complete specification. However, where an application for a patent is accompanied by a provisional specification, a complete specification must be filed within twelve months from the date of filing of the application, and if the complete specification is not so filed the application will be deemed to be abandoned.

A provisional application provides you time to prepare the complete specification when you are forced to file a patent application in a rush.

What is the structure of a patent application?

A patent application has a range of functions:

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

Patent applications are similarly structured worldwide and consist of a request, a description, claims, drawings (if necessary) and an abstract (together these things are called "Specification"). A patent document may be anywhere between a few pages to hundreds of pages long, depending on the

nature of the specific invention and the technical field.

- Request

It contains information on the title of the invention, the date of filing, the priority date and bibliographic data such as the name and address of the applicant and inventor. The request is filed on prescribed form.

- Description

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

- Claims

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

Examples of claims:

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

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

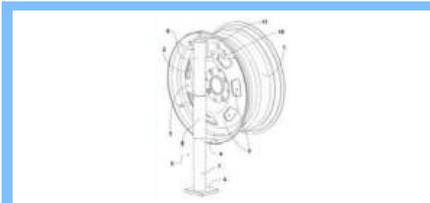
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at least the same portion of the iris and pupil of the eye of the unidentified person; and comparing at least the iris portion of the obtained image with the stored image information to identify the unidentified person.

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

• Drawings

The drawings show the technical details of the invention in an abstract and visual way. They help to explain some information, tool or result set out in the disclosure. Drawings are not always a necessary part of the application. If the invention is for a process or method of doing something, drawings usually are not required. If drawings are required, they should conform to the requirements of Rule 11 of The Patents Rules, 2003, which lays down detailed instructions as to their format etc.



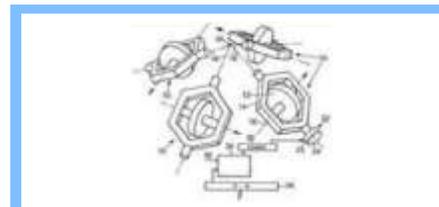
Patent No. DE10230179 for a jack or "Tire release device". The invention provides a novel jack for lifting spring-mounted wheels of a vehicle. It uses a support structure (11) that engages with the outer rim (4) of the wheels (1). The jack moves directly the wheels and not the body of the vehicle. Therefore,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

• Abstract

The abstract is a brief summary of the invention. When the patent is published by the Patent Office, the abstract is included on the front page. The abstract is sometimes improved or drafted by the Patent Examiner at the Patent Office.

How long does it take to obtain patent protection?

The time taken by the Patent Office to grant a patent may vary with the fields of technology. Generally, a patent application takes less than two years for its registration.



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

Proofreading a granted patent

Once a patent is granted it is advisable to proofread the patent thoroughly to ensure that there are no mistakes or missing words, particularly in the claims. A clerical error can get corrected by filing a request to the Patent Office on Form P-21.

From what date is your invention protected?

Once your application is accepted you will have the same rights as if your patent has been sealed. However, you will not be

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entitled to institute any proceedings for infringement unless your patent application is actually sealed i.e., you are issued the registration certificate or letter of patent.

How long does patent protection last?

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

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

Displaying Patent Obtained

Under the Patents Ordinance, in proceedings for the infringement of a patent, damages will not be awarded against a defendant who proves that at the date of the infringement he was not aware, and had no reasonable ground for supposing, that the patent existed. In order to overcome such a defense it is required that the patented article must contain the word "patent", "patented", or any word or words expressing or implying that a patent has been obtained for the article, along with the number of the patent. In some cases, people also display the words, "patent pending" or "patent applied for" when the patent application is pending.

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

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

- Making a state of the art search in order to identify any state of the art that renders your invention unpatentable;
- Writing the claims and full description of the invention combining legal and technical jargon;
- Corresponding with the 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 an 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 agent who has the relevant legal knowledge and experience as well as the technical background in the technical field of the invention. Furthermore, the law requires that foreign applicants give an address for service in Pakistan and for this purpose generally, the address of the patent agent who is resident in the country is used.

The agents recognized under the Patents Ordinance can be divided into two categories:

- Lawyers: Lawyers are not required to get themselves registered as patent agents but can perform all functions of patent agent except drafting of patent specification.
- Registered Agents: These agents are required to get themselves registered with the Patent Office and must be

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qualified in a scientific field or must have passed a patent specification drafting course from a recognized institution. These agents can also draft patent specification.

(A list of patent agents is maintained in a Register by the Patent Office and will be accessible on its website: www.ipo.gov.pk).



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

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

Patents Ordinance imposes a condition that each patent application must relate to one invention only. This is generally known as unity of invention. It is, however, important to note that if a patent has been granted on an application that did not comply with the requirement of unity of invention, it will not be invalidated on this ground.

In case of lack of unity of invention, the applicant may be required to either restrict the claims or divide the application (divisional applications). You may, before the acceptance of the application, divide it into two or more applications, however, each divisional application should not go beyond the disclosure in the first

application. Each divisional application will be entitled to the filing date of the first application.

The law contains an exception for foreign applicants. Where applications for protection have been made in one or more Convention countries in respect of two or more inventions which are cognate or of which one is a modification of another, a single Convention application may be made in respect of those inventions.

Summary checklist

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

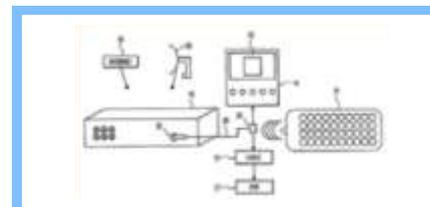
Patenting Abroad

3 | Patenting Abroad

Why apply for patents abroad?

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

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



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

When should you apply for patent protection abroad?

The date of your first application for a given invention is called the priority date and any subsequent applications in other countries filed by you, in most cases, within 12 months (i.e. within the priority period) will benefit from the earlier application and will have priority over other applications for the

same invention filed by others after the priority date. It is highly advisable to file your foreign patent applications within the priority period.

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

Where should you protect your invention?

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

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

Patenting Abroad



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



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

How do you apply for patent protection abroad?

There are two main ways of protecting an invention abroad:

- The national route. You may apply to the national Patent Office of each country of interest, by filing a patent application in the required language and paying the required fees. This path may be very cumbersome and expensive if the number of countries is large.
- The regional route. When a number of countries are members of a regional patent system, you may apply for protection, with effect in the territories of all or some of these, by filing an application at the relevant regional office. The regional Patent Offices are:

- The African Regional Intellectual Property Organization (ARIPO) (www.aripo.org);
- The Eurasian Patent Organization (EAPO) (www.eapo.org);
- The European Patent Office (EPO) (www.epo.org).

Summary Checklist

- Territorial rights. Remember that patents are territorial rights.
- Priority period. Make use of the priority period to apply for protection abroad but do not miss deadlines that may impede you from obtaining patent protection abroad.
- Where to apply. Consider where you will benefit from protection and take into account the costs of protecting in various countries.

Patenting Abroad

Advantages of the Patent Cooperation Treaty (PCT)

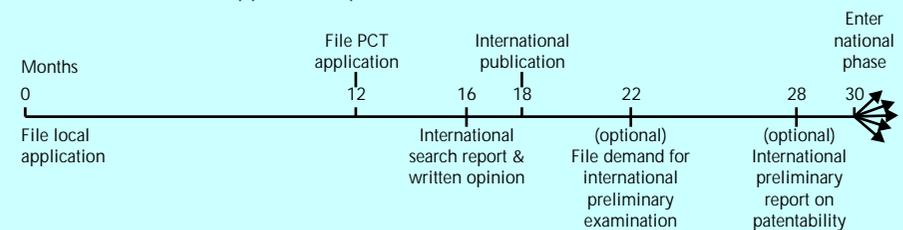
The PCT provides at least 18 additional months on top of the 12 month priority period, in which applicants can explore the commercial potential of their product in various countries and decide where to seek patent protection. Payment of the fees and translation costs associated with national applications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

PCT applicants receive valuable information about the potential patentability of their invention in the form of the PCT International Search Report and the Written Opinion of the International Searching Authority. These documents provide PCT applicants with a strong basis on which they can make their decisions about whether and where to pursue patent

protection. The International Search Report contains a list of prior art documents from all over the world, which have been identified as relevant to the invention. The Written Opinion of the International Searching Authority analyzes the potential patentability in light of the results of the International Search Report.

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

Outline of the PCT application process



4 Commercializing Patented Technology

How do you commercialize patented technology?

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

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

How do you take a patented product to the 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 that of

competing or substitute products.

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

Can you sell your patent?

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

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

There may be occasions when an assignment is advantageous. If a patent is sold for a lump sum, you get the value immediately, without having to wait up to 20 years to realize that value progressively. You also avoid the risk that the patent may be superseded by another technology. In

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

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

Where any person becomes entitled by assignment to a patent or to a share or interest in a patent he shall apply in writing in the prescribed manner to the Controller for the registration of his title or interest in the Register. Such an application can also be made by the assignor. After being satisfied, the Controller will register such a person as proprietor or co-proprietor of the patent or having interest in patent in the Register along with particulars of the relevant document.

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

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

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

Licensing is particularly useful if the company that owns the invention is not in a

position to make the product at all or in sufficient quantity to meet a given market need, or to cover a given geographical area.

As a license agreement requires skillful negotiations and drafting, it is advisable to seek the assistance of a licensing practitioner for negotiating the terms and conditions and for drafting the licensing agreement. The licensing agreements need to be registered with the Patents Office.

Where any person becomes entitled by license to a share or interest in a patent he shall apply in writing in the prescribed manner to the Controller for the registration of his title or interest in the Register. Such an application can also be made by the licensor. After being satisfied, the Controller will register such a person as having interest in the patent, in the Register along with particulars of the relevant document.

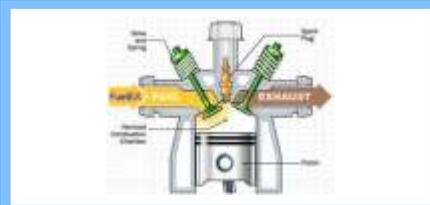
What royalty rate should you expect to receive for your patent?

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

While industry standards for royalty rates exist for particular industries and may usefully be consulted, it must be remembered that each licensing agreement is unique and the royalty rate depends on the particular and very distinct factors being negotiated. Therefore, industry standards

Commercializing Patented Technology

may provide some useful initial guidance but should not be relied on completely.



*Example:
Patent No. 138816 by AZMS Electronic communications: An activating / processing apparatus for liquid fuel which saves fuel, reduces pollution, energizes fuel and conditions fuel.*



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

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

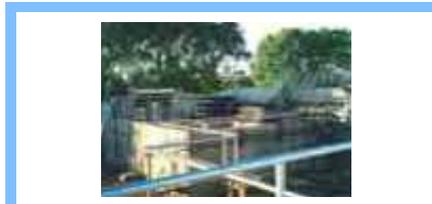
There are three types of licensing agreements depending on the number of licensees that will be allowed to work the patent:

- Exclusive license: a single licensee has the right to use the patented technology, which cannot even be used by the patent owner;
- Sole license: a single licensee and the

patent owner have the right to use the patented technology; and

- Non-exclusive license: several licensees and the patent owner have the right to use the patented technology.

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



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

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

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

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When is the best time to license your invention?

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

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

Patent valuation

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

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

option pricing methods initially developed for use in pricing stock options.

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

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

Summary Checklist

- Commercialization. Consider the different options for commercializing your patented invention and make sure you have a convincing business plan if you decide to take an innovative product to market.
- Licensing. Royalty rates and other features of licensing agreements are a function of negotiation and it is advisable to seek expert advice when drafting and negotiating licensing

Commercializing Patented Technology

agreements.

- **Exclusive vs. Non-exclusive.** Consider the reasons for granting exclusive/nonexclusive licenses, particularly in the light of the maturity of the technology and your company's business strategy.
- **Cross-licensing.** See whether you can use your patent(s) to access useful technology owned by others.

Compulsory or Non-voluntary License

In some cases you may be able to obtain a compulsory or non-voluntary license. This happens, when someone has got patented some invention which can prove a breakthrough invention in a sector but the owner of the patent is either not willing to license it or is demanding an unreasonably high amount. In such cases, on request, made in the prescribed manner to the Controller after the expiration of a period of four years from the date of filing of the patent application or three years from the date of the grant of the patent, whichever period expires last, the Controller may issue a non-voluntary license to prevent the abuses which might result from the exercise of the rights conferred by the patent, for example, failure to work.

A non-voluntary license will not be issued if the owner of the patent satisfies the Controller that circumstances exist which justify the non-exploitation or insufficient exploitation of the patented invention in Pakistan.

If the Controller decides to issue a non-voluntary license he will fix:

- (i) the scope and function of the license;
- (ii) the time limit within which the licensee must begin to exploit the patented invention; and
- (iii) the amount of the adequate remuneration to be paid to the owner of the patent and the conditions of payment.

Enforcing Patents

5 | Enforcing Patents

Why should you enforce your patent rights?

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

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

Who is responsible for enforcing patent rights?

The main responsibility for identifying and taking action against infringers of a patent lies with its owner. As a patent owner, you are responsible for monitoring the use of your invention in the marketplace, identifying any infringers and deciding whether, how and when to take action

against them. Independent inventors and SMEs may decide to shift this responsibility (or a part of it) to an exclusive licensee.

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

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

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

If, however, the infringement does not stop after your letter or legal notice, or you choose to take surprise action without alerting the infringer, you may institute a suit under section 60 of the Patents Ordinance

against the person(s) or company involved in infringement. In a suit for infringement the Court may grant relief by way of damages, injunctions restraining infringement or accounts. In such a suit the Court may also order effective provisional measure(s):

(i) to prevent an infringement, and in particular, to prevent the entry into the channels of commerce of goods, including imported goods after custom clearance; and (ii) to preserve relevant evidence in regard to the alleged infringement.

These provisional measures can be ordered even without hearing the defendant especially where any delay is likely to cause irreparable harm to the owner, or where there is an imminent risk of evidence being destroyed.

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

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

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

Arbitrations are regulated and governed by the Arbitration Act, 1940. Arbitration generally has the advantage of being a less formal and shorter procedure than court proceedings, and an arbitral award is more

easily enforceable internationally. An advantage of mediation is that the parties retain control of the dispute resolution process. As such, it can help to preserve good business relations with another enterprise with which your company may wish to collaborate in the future. The WIPO Arbitration and Mediation Center provides services for alternative dispute resolution. (More information on arbitration and mediation can be found at: www.arbiter.wipo.int/center/index.html).



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

Summary checklist

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

Annex I

1. Intellectual Property Organization of Pakistan (IPO Pakistan) IPO Pakistan
Headquarter:
House No. 23, Street 87, Ataturk Avenue (West), Sector G-6/3, Islamabad
Tel: +92-51-9208146 Fax: +92-51-9208157
Website: www.ipo.gov.pk Email: info@ipo.gov.pk

IPO-Pakistan's Patent Registry provides the following services to its clients with special focus on SMEs:

- Advice on Patent filling (detailed procedure of filing of applications for grant of Patents, different application forms for the purpose, Classification for Goods and Services etc. may be downloaded by visiting the IPO website at www.ipo.gov.pk);
- Processing of Patent registrations;
- Hearings of the applications;
- Organising seminars through out the country for providing information regarding the registration of Patents to the members of the Chambers that mostly comprises small and medium enterprises;
- Application filing and tracking;
- Searches of Patent database.

IPO Pakistan Regional Office
3rd Floor, Farid Tower,
19 Temple Road, Lahore.
Tel: +92-42-37224395
Fax: +92-42-37224396
Email: lahore@ipo.gov.pk

Trademarks Registry
Registrar Trade Marks Registry
Plot No. CD-3, Behind KDA Civic Centre,
Gulshan-e-Iqbal Block- 14, Karachi.
Tel: +92-21-99230538
Fax: +92-21-99231001
Email: tmr@ipo.gov.pk

Patent Office
Controller of Patents & Designs
2nd Floor Kandawala Building,
M. A. Jinnah Road, Karachi.
Tel: +92-21-99215488
Fax: +92-21-99215489
Email: patent@ipo.gov.pk

Copyright Office
Registrar Central Copyright Office
Ground Floor, Liaquat Memorial Library
Building, National Stadium Road, Karachi.
Tel: +92-21-99230140
Fax: +92-21-99230140
Email: copyright@ipo.gov.pk

2. Small and Medium Enterprises Development Authority (SMEDA)

SMEDA Head Office:

6th Floor, L.D.A Plaza, Egerton Road, Lahore-54000

Tel: + 92-42-111-111-456

Fax: + 92-42-36304926

Website: www.smeda.org.pk

In order to encourage and urge small businesses to effectively use IP system for their business success, SMEDA is providing the following services to SMEs:

a) IP Helpline:

SMEDA 'IP Helpline' assists SMEs on all forms of IPs including trademarks, patent, copyrights and industrial designs. SMEs may contact our regional legal services officer for solving their queries on IP matters.

b) Training Programs:

Keeping in view the information needs of SMEs, SMEDA conducts on regular basis IP awareness programs across Pakistan in collaboration with local chambers of commerce and industry, IPO Pakistan and Trade Associations. Likewise, IP awareness programs are planned especially for small trade bodies in different regions for wider outreach.

REGIONAL OFFICES

PUNJAB

8th Floor, L.D.A Plaza, Egerton Road

Lahore-54000

Tel: (042) 111-111-456

Fax: (042) 36304926

Email: helpdesk@smeda.org.pk

SINDH

5th Floor, Bahria Complex 2,

M.T.Khan Road,

Karachi

Tel: (021) 111-111-456

Fax: (021) 5610572

Email: helpdesk-khi@smeda.org.pk

NWFP

Ground floor, State Life Building,

The Mall, Peshawar

Tel: (091) 9213046-47

Fax: (091) 286908

Email: helpdesk-pew@smeda.org.pk

BALUCHISTAN

Bungalow No. 15-A,

Chaman Housing Scheme,

Airport Road, Quetta.

Tel: (081) 2831702/2831623

Fax: (081) 2831922

Email: helpdesk-qta@smeda.org.pk

For more information on:

- Intellectual property issues from a business perspective
www.wipo.int/sme
- Patents in general
www.wipo.int/patent/en/index.html
- On practical aspects relating to the filing of patent applications, see list of websites of national and regional patent offices available at Annex II or visit
www.wipo.int/news/links/ipo
- On the Patent Cooperation Treaty (PCT)
www.wipo.int/pct/en/index.html
- On the International Patent Classification (IPC)
www.wipo.int/classifications/ipc/en
- On arbitration and mediation
arbitrator.wipo.int/center/index.html
- On on-line patent databases of national and regional patent offices
www.wipo.int/ipdl/en/resources/links.jsp
- On enforcement of IP rights
www.wipo.int/enforcement
- On membership of WIPO-administered treaties
www.wipo.int/treaties/en/index.jsp

Annex II

Annex II

Form P-1

Patents Ordinance, 2000

Application for patent when the true and first inventor is sole or joint applicant

Section 13(1)Rule 8(1)

(To be accompanied in duplicate by a Provisional Specification Form P-3 or the complete specification on Form P-3A)

I or We _____

hereby declare:-

(i) that I am in possession of an invention for _____;

(ii) that I (or we) (or the said) _____ claim to be the first and true inventor thereof;

(iii) that the invention is not in use in Pakistan by any other person;

(iv) that the _____ specification filed with this application is, and any amended specification which may hereafter be filed in this behalf will be, true of the invention to which this application relates;

(v) that the following are particulars of my application:-

Description:

Claim(s):

Abstract:

Drawing(s):

Address for service in Pakistan:

I (or we) humbly pray that a patent may be granted to me (or us) for the said invention.

Dated this _____ day of _____, 20 _____

Signature: _____

Name: _____

Designation: _____

Address: _____

To
Controller of Patents
Patent Office
Karachi.

Annex III

Annex III

Form P-1A

Patents Ordinance, 2000

Application for patent when the true and first inventor is NOT a party to the application

Section 13(1) Rule 8(1)

(To be accompanied in duplicate by a Provisional Specification on Form P-3 or the Complete Specification on Form P-3A)

I (or We) _____ hereby declare:-

(i) that I am in possession of an invention for _____;

(ii) that I(or we) (or the said)(_____)claim to be the assign of (or the legal representative of) _____ who claim(s) and is (are) believed to be the true and first inventor(s) thereof;

(iii) that the invention is not in use in Pakistan by any other person;

(iv) that the _____ specification filed with this application is, and any amended specification which may hereafter be filed in this behalf will be, true of the invention to which this application relates;

(v) that the facts and matters stated herein are true to the best of my (or our) knowledge, information and belief;

(vi) that the following are particulars of my application:-

Description:

Claim(s):

Abstract:

Drawing(s):

Address for service in Pakistan:

I (or we) humbly pray that a patent may be granted to me (or us) for the said invention.

Dated this _____ day of _____, 20 _____

Signature: _____

Name: _____

Designation: _____

Address: _____

To
Controller of Patents
Patent Office
Karachi.

Annex III

Form P-1A, Reverse
Patents Ordinance, 2000

Application for patent when the true and first inventor is NOT a
party to the application
(Section 13(1) Rule 8(1)
ENDORESEMENT BY INVENTOR

I (or we) _____
Referred to on the reverse of this document as claiming to be the true and first inventor(s)
agree that the said application shall be made with out my (or our) name(s) as (an) applicant(s)
for a patent Dated this _____ day of _____, 20____

Signature _____

Name _____

Designation _____

Address _____

Names and signature of two witnesses:

1. _____

2. _____

NOTE:

For further information on the other business-oriented content and publications on intellectual property rights please visit WIPO's SME website at www.wipo.int/sme/en/. In addition, you may also subscribe to the free electronic monthly newsletter of the SMEs Division of WIPO, available at www.wipo.int/sme/en/documents/wipo_sme_newsletter.html Recent activities on IP matters by SMEDA are available at www.smeda.org/services/Intellectual-Property-for-Bussines-Success.html

For more information contact

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SMEDA Head Office:

6th Floor, L.D.A Plaza, Egerton Road, Lahore-54000

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E-mail: helpdesk@smeda.org.pk Website: www.smeda.org.pk

Intellectual Property Organization of Pakistan (IPO Pakistan)

IPO Pakistan Headquarter:

House No. 23, Street 87, Ataturk Avenue (West), Sector G-6/3, Islamabad

Tel: +92-51-9208146 Fax: +92-51-9208157

Email: info@ipo.gov.pk Website: www.ipo.gov.pk

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34, Chemin des Colombettes

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Fax: +41 22 733 54 28

E-mail: wipo.mail@wipo.int Website: www.wipo.int

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Visit the WIPO website at: www.wipo.int

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Web page: www.wipo.int/sme

Available at SMEDA Head Office and downloadable from

www.smeda.org/services/Intellectual-Property-for-Bussines-Success.html

and the WIPO Electronic Bookshop at www.wipo.int/ebookshop

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November 2009