Patenting Strategies: Building an IP Fortress

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ABSTRACT

A comprehensive intellectual property (IP) portfolio can be of substantial value to both private and public sector entities. Patents are a key element of IP portfolios and must be managed according to the mission, objectives, and motivations of the organization that owns them. Large companies can afford an offensive patent strategy, but small companies may not have the resources for this. Therefore, it is extremely important for private sector entities, especially small- and middle-sized companies, to design and implement an effective and cost-efficient strategy for patent management. For public sector entities, patent strategies will focus on advancing social welfare, and the mission of the institution will therefore drive objectives. A key factor to consider is the method of IP protection: patent, trademark, copyright, or trade secret. The costs of maintaining each of these IP categories are different. Although research institutes and companies will likely wish to reduce costs as much as possible, key technologies still need to be protected properly. A company can reduce costs by focusing the patent protection on those geographic areas where it has business. A university can reduce costs by selectively prosecuting patent applications with broad claim structures, strategically licensing technologies, and enforcing patent rights if and when necessary. To build a strong basis of protection, several forms of IP may be used for the same invention or improvement.

1. INTRODUCTION

Historically, a patent was a grant made by a sovereign that would allow for the monopoly of a particular industry, service, or product. Over time, the concept has been refined and now stipulates a contract or compact between the government and the inventor/creator. In return for the right to exclude others from the practice of the invention, the government requests that the inventor fully disclose the enablement of the invention. Additionally, the monopoly is now limited by time and is only applicable in the territory under the jurisdiction of the government that granted the patent.

In the United States, a patent is a fundamental right provided in Article I, Section 8 of the Constitution. Congress is empowered to "*promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.*"

In exchange for a right to exclude others from making, using, or selling the potential invention, the inventor must provide a complete and accurate public description of the invention and the best mode of *practicing* it. This disclosure of information by the inventor allows others to invent further, thus pushing technology forward for the benefit of society.

Congress has given the U.S. Patent and Trademark Office (PTO) the authority to grant an inventor the right to exclude all others from exploiting the invention in the United States for a period of 20 years, or for design patents, up to 14 years, from the date of filing a patent application with the PTO. This right to exclude makes a

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patent a negative right, since a patent holder may only *exclude* others from using, manufacturing, copying, or selling his or her invention.

Patents are territorial. For example, a U.S. patent generally has no force in other countries, just as a patent granted outside the United States has no force in the United States. However, products sold in the United States, even if they are made outside the patent domain, may infringe a U.S. patent. Procedures for filing, regulations for patentability, and patent terms vary considerably from country to country.

The United States is the only country in the world that awards its patents using a *first-to-invent* approach; all other countries have a *first-to-file* approach. The first-to-invent approach has led to the development of patent interference practice, a quasi-litigation conducted within the PTO to determine the issue of *priority*, or who made the invention first.

Another important difference between the U.S. system and the system adopted in many other countries, for example European countries, is the one-year grace period awarded in the United States. This means that an invention is patentable if it has not been published or otherwise brought into public awareness earlier than one year from filing the patent application.

Patents are relatively complex documents to prepare and submit, and the time and expense in obtaining such protection can be substantial. Given the legal complexity and the costs involved, it is important for the inventor to develop a coherent strategy with which to approach the patenting process.

2. DEFINITIONS

- **design patent.** A drawing or depiction of an original plan or conception for a novel pattern, model, shape, or configuration to be used in the manufacturing, textile, or fine arts, and chiefly of a decorative or ornamental character. Design patents are issued for a period of 14 years.
- **monopoly.** A privilege or peculiar advantage vested in one or more persons or companies, consisting of the exclusive right or power to carry on a particular business or trade, to manufacture a particular article, or to control the sale of the whole supply of a particular commodity. Monopoly is a form of market structure in which one or only a few firms dominate the total sales of a product or service.
- **nonprovisional patent application.** A patent that is filed with the PTO includes a written document that comprises a specification (including a description and at least one claim), an oath or declaration, and, when necessary, one or more drawings.
- **patent.** A grant or right to exclude others from making, using, selling, or offering to sell one's invention and a right to license others to sell, make, use, or offer to sell that invention.
- **plant patent.** A patent granted to an inventor who has invented or discovered and asexually reproduced a distinct and new variety of plant. (Plant patents are not issued for tuber-propagated plants or for plants found in an uncultivated state.) Plant patents are issued for 20 years.
- **plant variety protection.** Protection for sexually reproduced (by seeds) or tuber-propagated plants. Registration of Plant Varieties is administered by the U.S. Department of Agriculture.
- **provisional patent application.** An inexpensive first patent application that allows filing without a formal patent claim. It provides means to establish an early filing date. Provisional patent applications expire 12 months after filing. Before this, the inventor has to file a nonprovisional patent application in order to protect his or her invention.

3. TYPES OF PATENTS

There are three types of patents:

1. A *design patent* protects a new, original, and ornamental design for an article of manufacture.
2. A *plant patent* protects a new and distinct, asexually reproduced variety of plant.

Tuber propagated plants are excluded from plant patents.

3. A *utility patent* is granted for any new and useful process, machine, manufacture, or composition of matter or for any new or useful improvement thereof. Most importantly, the invention has to be useful. A utility patent is the type of patent most people are familiar with. An application for a utility patent can be of either the provisional or nonprovisional type.

3.1 *Design patents*

A design patent protects the look of an article. In order to be patentable, the design or the look has to be original. One cannot, for example, get a design patent for a vase that is in the shape of Mickey Mouse, as this image is already patented and not original. A design patent might be granted, however, to a vase having a different mouse-shape.

A design patent application should include the following elements:

- title of the design
- brief description of the nature and intended use of the article in which the design is embodied
- drawings or photographs
- description of the drawings or photographs
- a single claim
- an oath or declaration

A design patent may have only one claim that covers the whole design. The following shows an example of a typical claim: "*The ornamental design for a vase as shown (and described).*"

It is possible to file a utility patent for a new and original way an article is functioning and also file a design patent for the original design of the same article.

3.2 *Plant patents*

A plant patent may be granted on an entire plant if it is a new and distinct variety and it is asexually propagated. Asexually propagated plants are those that are reproduced by means other than from seeds, such as by the rooting of cuttings, by layering, budding, grafting, or inarching. However, tuber-propagated plants are excluded from plant patents.

An application for a plant patent consists of the following elements:

- title, which must include the name of the claimed plant. The following shows an example of the form of a typical title: *Birch tree named* "*Renci.*"
- specification, which includes a description and one claim
- one or more drawings or photographs
- an oath or declaration

The specification should include a complete detailed description of the plant. Characteristics that distinguish the claimed plant from related, known varieties should be described comprehensively. The specification should also include the origin or parentage of the plant variety and must point out where and how the variety has been asexually reproduced. If the plant variety originated as a newly found seedling, the specification must fully describe the conditions under which the seedling was found growing.

A plant patent is granted on the entire plant. Therefore, only one claim is permitted. The following is an example of a typical plant patent claim: "*A new and distinct cultivar of a birch tree named* '*Renci,*' *as illustrated and described.*"

The drawing must disclose all the distinctive characteristics of the plant capable of visual representation. When color is a distinguishing characteristic of the new variety, the drawing must be in color. As an alternative, a photograph may accompany the application.

If the plant is a newly found plant, the oath or declaration must also state that the plant was found in a cultivated area.

3.3 *Utility patents*

A utility patent can be issued for any new and useful process, machine, manufacture, or composition of matter. In order to be patentable, the invention has to be new, useful, and nonobvious. A patent cannot be obtained for pure ideas or theories, no matter how useful the theory might be. In addition to plant patents, utility patents can be issued for some types of plants, for exam-

ple, transgenic plants. This is because a transgenic plant, if new and useful, may be regarded as a composition of matter or manufacture.

An application for a utility patent requires the same elements as are required for a design patent application.

3.3.1 *Nonprovisional application*

A nonprovisional (utility) patent application has to include the following parts:

- title
- specification, which includes a description and at least one claim
- one or more drawings
- an oath or declaration

The description should be written in such a way that any person skilled in the field to which the invention pertains can make and use the invention.

In a nonprovisional patent application, there must be at least one claim. The scope of the protection of the patent is defined based on the claims. Whether a patent will be granted is also largely decided by the choice of the claim. The optimal claim is one that is wide enough to cover as much as possible without overlapping anything that was already known.

3.3.2 *Provisional application*

A provisional patent application is a lower cost, initial patent application that does not have to include any claims, oaths, or declarations. A provisional patent application has a pendency of 12 months from the date of its filing. A provisional patent application cannot mature to an issued patent, but it gives the inventor an early filing date and use of the term *patent pending*. In order to benefit from the early filing date of the provisional application, a nonprovisional patent application has to be filed before the end of the 12 months pendency of the provisional application.

4. PATENT HARMONIZATION

A patent is valid and effective only in the country in which it is issued. Trade, however, is global, and thus it is important to have patent protection in more than one country. But because every country has its own laws and regulations for patenting, obtaining protection in multiple locations is rarely simple or cheap. To ameliorate this situation, a great deal of effort has been spent, for more than 100 years, to try to harmonize patentability standards across countries.

The Patent Cooperation Treaty (PCT) is an international treaty harmonizing patent application procedures across 117 countries. PCT is administered by the World Intellectual Property Organization (WIPO). With one PCT patent application, an inventor can get a filing date in all member countries. Eighteen months after the filing, the applicant has to decide in which of the member countries he or she actually wants and needs to have a patent. The benefit of a PCT application is that there is no need to file separately in all countries, as the whole procedure can be accomplished in one application. Moreover, the PCT system gives the inventor 18 months time to shop around before deciding in which countries a patent would be most useful.

All PCT applications will be published 18 months from the filing, if not abandoned before that. This practice is generally in line with, although not precisely analogous to, that of the U.S. PTO. In the United States, the inventor may require a U.S. patent application not to be published before issuance if the application is filed only in the United States. Nevertheless, the invention may still be the subject of a PCT application, with similar delay in publication, providing certain provisions are met. Specifically, pursuant to Article 64(3)(b) of the PCT, which articulates the U.S. Reservation, publication can be similarly delayed. According to this article, if only the United States is designated, the international publication is postponed until after the issuance of the U.S. patent. Article 64(3)(b) of the PCT is therefore not inconsistent with the U.S. rule.

5. REGIONAL PATENTS

The creation of regional patent offices has helped to harmonize patent applications in different parts of the world. The European Patent Office (EPO) is the regional patent office serving

countries that are members of European Patent Convention (EPC). By filing a single application in one of the three official languages of the EPC (English, French, German), it is possible to obtain a patent in any or all of the 24 contracting countries. European patent applications can also be extended to some eastern European countries that are not parties to the contract. If a patent is granted by the EPO, then that patent must still be taken to each individual country and *validated* there.

Currently, there is major movement toward developing a community patent for the European Union. Once issued, a community patent would be enforced in all E.U.-counties without any validation requirement. Community patents would, however, require a centralized patent court system, with specialized courts and a centralized appeal court.

Another effort at harmonizing patent applications involves participation by counties of the former Soviet Union in the Eurasian Patent Convention. By filing one application in Russian, a Eurasian patent may be granted in one or all of the contracting countries. Likewise, African countries in which English is spoken have established the African Regional Intellectual Property Organization (ARIPO); African countries in which French is spoken have established the *Organisation Africaine de la Propriete Intellectualle,* or OAPI.

6. FEES

The fees charged by the U.S. PTO include filing fees, publication fees, issuing fees, and maintenance fees. Updated information of the fees is available at the PTO's Web site.[1]

Maintenance fees on utility patents must be paid at 3½, 7½, and 11½ years after the date of issue of the patent, or it will expire. Once a patent expires, the invention is in the public domain and anyone may use it without authorization from the patent holder.

The PTO gives a 50% reduction in most of the fees for organizations designated as "small entities." Independent inventors, not-for-profit organizations, universities, and some small businesses will qualify as small entities.

7. APPEALS, INTERFERENCE, AND OTHER PROCEDURES

The applicant can appeal the decision by a patent examiner to reject a patent application. In the United States, the Board of Appeals within the PTO hears the cases. If the applicant is dissatisfied with the decision of the Board of Appeals, he or she may appeal to the Court of Appeals for the Federal Court.

A unique form of patent dispute is a priority dispute between two or more inventors claiming to be the first to have developed an invention. These disputes are known as interference proceedings.

Two types of post-issuance procedures are available in the United States. If someone believes there is a priority dispute that was not considered when the patent application was examined, that individual can ask for a reexamination of the patent. Anyone, including the patentee, can ask for reexamination. Often times, individuals accused of infringement use the reexamination procedure to question the validity of the patent. If the PTO finds the patent invalid in the reexamination process, there can be no grounds for claiming infringement. Reexamination procedures can be either *ex parte* or *inter partes*. In the ex parte reexamination process, the third party, even if it was the requester, does not have a right to participate in the proceeding after filing the request, nor does the third party have a right to appeal the decision. The inter partes reexamination procedure was created in 1999 and can be applied only to patents issued on or after November 1999. Inter partes reexamination gives the third party a right to provide comments and present arguments during the procedure and a right to appeal to the Patent Office's Board of Appeals.

The second type of post-issuance procedure is a reissue. Only the patentee can seek a reissue and only in the case of an error being made without deceptive intent, in the claims or in disclosure of the original application. If the patentee seeks to broaden the original claims, the reissue has to be

filed no later than two years from the issuance of the patent. However, if the patentee seeks to narrow the claims, a reissue can be filed at any time.

The PTO charges fees for each of these procedures, with reexamination fees being the highest. In addition to these fees, attorney fees will have be paid by the applicant. Attorney fees will probably be significantly higher than PTO fees.

8. OTHER NONPATENT INTELLECTUAL PROPERTY ELEMENTS

Intellectual property (IP), sometimes also called "intangible property," is any product of the human mind or intellect. Thus, IP can be almost anything, including a technical invention or an improvement of an earlier invention. It can also be a unique name or logo, design, method, software, database, domain name, or piece of writing.

The broad area of IP is subdivided into different legal classes that are protected by different means. Patents are not the only way to protect IP. Trademarks, copyrights, and trade secrets are used as well, and very often they form an important part of an overall IP strategy.

8.1 *Trademarks*

A *trademark* is a word, phrase, symbol, design, or combination of these that distinguishes the source of one's goods or services from those of another. A trademark can be valid only when it is used on or in connection with goods or services in commerce. A trademark provides protection to the owner of the mark by ensuring the exclusive right to use it to identify goods or services or to authorize another to use it in return for payment. Trademark protection keeps others from applying similar marks to inferior or different products or services.

Rights to a federally registered trademark can last indefinitely if the owner continues to use the mark on, or in connection with, the goods and/or services stipulated in the registration, as long as the owner renews the mark with the PTO every ten years.

There are various types of marks that can be registered with the PTO. In addition to laying out the provisions for trademarks and service marks, the Trademark Act provides for registration of collective marks, membership marks, and certification marks. A domain name, such as *yahoo.com*, can qualify as a trademark or service mark if it is used in connection with a Web site that offers goods or services to the public.

The basis for filing a trademark can be either actual use or intent to use. If the applicant files a trademark based on intent to use, she or he has to swear to a bona fide intent to use the mark in connection with the proposed products or services. If the mark is not actually used within 30 months of registering the mark, the registration, as related to that specific class,[2] would be considered abandoned.

8.2 *Geographical indications*

A *geographical indication* is a sign used on goods that have a specific geographical origin and possess qualities or a reputation that rely on that place of origin. Geographical indications are defined in the TRIPS Agreement (Trade-Related Aspects of Intellectual Property Rights) as a type of IP. The World Trade Organization (WTO) provides legal means for interested parties to prevent the use of a geographical indication that indicates or suggests that a good originates in a geographical area other than its true place of origin. Geographical indications cannot mislead the public as to the true geographical origin of the good, nor can they constitute an act of unfair competition.

Most commonly, a geographical indication includes the name of the place of origin of the good. Agricultural products typically have qualities that derive from their place of production and are influenced by specific local factors, such as climate and soil. Examples of geographical indications are *Idaho* for potatoes or *Roquefort* for a type of French cheese.

Whether a sign functions as a geographical indication is a matter of national law and consumer perception. The TRIPS Agreement does not require that a WTO member extend protection to a geographical indication if that geographical indication is the generic name of the good in that member country. Therefore, the word "champagne" is not registrable as a geographical indication in the United States because champagne is

a generic term in the United States meaning any light-colored wine with bubbles.

The United States offers robust protection for geographical indications, generally by registering the good with a certification mark, which is a type of trademark.

8.3 *Trade secrets*

Trade secrets are an important and widely used business asset in the United States. Both large and small businesses rely on trade secret protection, often without even realizing it. It has been estimated that 90% of inventions are protected by trade secrets.

There are various kinds of trade secrets. The most famous example of a trade secret is the formula of Coca Cola, which has been kept secret for over 100 years. In addition to chemical formulas or processing methods, trade secrets can consist of software, accounting records, customer lists, and plant designs, among others. Although trade secrets may overlap with patentable subject matter, they go well beyond that. Even failed experiments can qualify as trade secrets; knowledge that a method does not work, in some cases, can give an individual or business a huge competitive edge.

The generally accepted definition of a trade secret appears in the 1939 Restatement of Torts. The subject matter of a trade secret must be secret; as such, matters of public or general knowledge in an industry cannot be appropriated by anyone as a secret. Information that is completely disclosed by the goods that one markets cannot be considered a trade secret. By definition, a trade secret is known only to those in the particular business in which it is used.

8.4 *Copyrights*

A copyright is a type of IP protection for authors of original works. A copyright protects an original work and allows the author an exclusive right to:

- reproduce the work exclusively
- prepare derivative works
- distribute copies or records by sale, lease, or other type of ownership transfer
- perform the work publicly
- display the work

In the Copyright Act there is, however, a fair-use exception that states that the use of an author's original creation is authorized for the purposes of criticism, comment, news reporting, teaching, scholarship, or research. Fair use takes into consideration the purpose and character of the use, the nature of the copyrighted work, the amount and substance of the portion used in relation to copyrighted work as a whole, and the effect of the use upon the potential market.

Generally the categories of works that are protected are:

- literary works
- musical works, including words accompanying music
- dramatic works
- pantomimes and choreographic works
- pictorial graphic and sculptural works
- motion pictures and other audiovisual works
- sound recordings
- architectural works

The work has to be original and in a fixed medium. This means that the work has to be an independent creation of the author and it must exhibit some creativity. Being in a fixed medium means that the creation is in a tangible form: A short story is written down, a song is recorded, and so on. A pure idea or concept cannot be copyrighted without description or illustration.

9. ASSEMBLING A STRATEGY

The development of a coherent IP strategy involves an analysis of three types of IP: self-developed, incoming, and outgoing. In order to develop a strategy to manage IP, an organization generally conducts a freedom-to-operate study or IP audit. Such an analysis inspects all patents, trademarks, copyrights, contracts, material transfer agreements, know-how, and anything else that could be part of the intellectual capital of an organization.

The first step in developing an IP strategy is to document the technologies that already exist in the organization, plus the technologies in development. The existing technology could

consist of trade secrets, know-how, patents, or combinations thereof. The most critical elements of the technologies are placed in a database. The database could, for example, contain the following elements: issued patents, filing and expiration dates of the patents, abstracts of technologies, first claims of patents, current and future potential of IP, existence of licenses, and so on. Each project of the company can be similarly documented. Data of issued and applied patents in each project should be documented; valuable trade secret and contracts should likewise be documented.

When all the IP is documented in a database, consideration should be given to the merits of the documented technologies. Questions to be asked are, for example:

- What stage is the technology in?
- What is the novelty of the technology?
- Is the technology in use?
- Are outside licenses needed to develop the technology further?
- Does a competitive technology exist?
- Is the technology commercially launched?
- Are capital requirements needed to launch the technology?
- Are there environmental or regulatory issues related to the technology?

Depending on the organization, the answers to the above questions will have varying importance. For example, a university technology transfer office might not care too much if the stage of the technology is at a pilot level or whether the patent has been issued. For an organization basing its business on in-house developed technology, however, these issues are crucial.

Patenting is expensive. Therefore, it is important, especially for a small organization, to critically assess which technologies it needs to patent and where. Even if an invention is patentable, it might not always be the best solution to patent it. If, for example, an invention is difficult to reverse engineer, or if it would be easy to invent around a patented technology, then keeping the invention as a trade secret might be more beneficial. Also, patenting might not be an effective tool if it would be difficult to ensure that no one is infringing on the patent. If an organization developed a patentable method for transforming a plant species, for example, it would be very difficult to ensure that no one was infringing on that method, and thus patenting would be largely ineffective.

The organization should also analyze where it will need the protection. There might not be a need to keep a patent valid all over the world if the technology is used only in the United States, or if the only prospective market is in Germany. In these cases, it would be advisable to apply for patents only in the relevant countries.

It is also important to get accurate knowledge of the IP rights of competitors in your field. Knowing the IP rights of other organizations in your field will help you identify where your organization has a distinct competitive advantage, and will enable you to identify and eliminate costs of any out-of-date IP. By knowing your own IP, you can identify under-utilized IP that could potentially be sold or licensed out; knowing other people's IP could help you to avoid costly infringements suits. Finally, knowing your IP gives you a road map to create a successful R&D strategy.

Finally, an organization can choose an offensive or a defensive patent strategy. This depends a great deal on the size of the company, but also on the demands of the particular industry within which the company operates.

9.1 *Offensive patent strategy*

An offensive patent strategy is designed to build barriers to block competitors from gaining entry to your proprietary technologies. Using an offensive patent strategy means filing patents as soon as is practicably possible. Filing a large number of patent applications and later maintaining the issued patents is expensive; on the other hand, an offensive patent strategy may derive large licensing incomes.

Given the expense, an offensive patent strategy is often available only to large organizations, since small companies generally cannot afford the costs of filing and maintaining patents. Beyond size, an offensive patent strategy is more important for companies operating in very competitive fields.

9.2 *Defensive patent strategy*

Using a defensive patent strategy, a company files patents primarily to ensure that innovations can be practically used. With a defensive strategy, filing and maintenance fees will be small, but the company will not gain royalties from licensing patents out.

In addition to these two strategies (offensive and defensive) an organization can adopt something in between, depending on the field and the type of the technology it uses. A defensive patent strategy can be combined with a strong trade-secret portfolio, or a large number of in-licensed technologies. An offensive patent strategy can be used to demonstrate innovations to industries and markets.

9.3 *Public and private sector strategies compared*

The public and private sectors by and large have different missions, objectives, and motivations. These, in turn, drive the overall patent strategies that each employs.

Private sector organizations, primarily corporations, are profit oriented and must aggressively respond to the pressures imposed by the marketplace and shareholders who expect returns on their investments. Therefore, the private sector will use defensive and offensive patenting strategies, often obtaining numerous patents containing narrowly drafted claims. In this way, a series of painstakingly prosecuted patent portfolios is strategically used to build proprietary fortifications. The private sector organization can thereby stake out its territory, protect its interests, and secure its profits. In the expanding world marketplace, this strategy is becoming more and more common; the use of foreign filing and patent families confirms the global strategic perspective of multinational companies.

The public sector, on the other hand, has the very different mission of serving the greater public good. Additionally, for much of the public sector, the perspective is primarily local: either national, or possibly regional. Patenting strategies will focus on more broadly drafted claims that will encompass a technology, or, more often, a key process, method, or technique (for example, a technique of genetic transformation). These types of patents, when strategically licensed, will enable effective development, broad dissemination, and maximum social usefulness of a technological advance. This is precisely in line with the public sector mission of providing for humanitarian interests and the welfare of the general public, in contrast to the much more limited mission of the private sector.

10. THE IP FORTRESS

Building a strong base for IP protection will make it difficult for other people and companies to infringe upon protected rights. One way to secure IP protection is to cover IP with various types of IP rights.

Imagine that the IP of a particular U.S. company is a novel paintbrush. The company can obtain a utility patent in the United States covering the novel paintbrush. If the company has business in Europe, it might be wise to file a PCT as well. It might be beneficial to write a claim, also, for painting with the paintbrush. By doing so, the company would ensure that both people manufacturing the brush, and each small or large painting using the brush, would be guilty of infringement if they were not first granted a license to use the brush in any manner they saw fit. When the company holding the patent improves the tool, it can always file a new patent covering the improvement (continuation-in-part application). Additionally, the design of the paintbrush might be protected by a design patent. Finally, the company might have a unique name for the tool that could be trademarked.

Building such a fortress around the invention makes it difficult for others to use the invention without getting a license. Depending on the policy of the organization and the type of the invention, the organization can then grant either exclusive or nonexclusive licenses to use the product.

There are several ways to protect IP, but one should always remember that protecting IP is expensive. Therefore, an organization needs to think carefully about its competitors, likely infringers, and the geographical area where the invention is to be marketed. Sometimes keeping an invention as a

trade secret might be the cheapest way to protect it. Sometimes patenting, even if more expensive, might give better protection. Finding the best way to build and protect an IP portfolio requires imagination, in addition to a thorough knowledge of the company and its product lines.

11. SUMMARY AND CONCLUSIONS

A comprehensive IP portfolio can be of substantial value to both private and public sector entities. For both sectors, patents are a key element of an IP portfolio. Large companies can afford an offensive patent strategy, but small companies may not have recourses for this. Therefore, especially for small- and middle-sized companies, planning and lateral thinking about how to put in place an effective and cost efficient strategy is extremely important. IP can be protected through patents, trademarks, copyrights, and trade secrets. The costs of maintaining each of these IP categories are different. A company can reduce costs by limiting patent protection to those geographic areas where it has business. But even when a company wishes to reduce costs as much as possible, important technologies need to be protected properly. A strong protection may be built by using several forms of IP for the same invention or improvement.[3] ■

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1 www.uspto.gov/main/howtofees.htm.

2 See also in this *Handbook*, chapter 11.6 by WT Tucker and GS Ross.

3 Recommended reading for further information on this topic:

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