

**ΑΝΩΤΑΤΟ ΤΕΧΝΟΛΟΓΙΚΟ ΕΚΠΑΙΔΕΥΤΙΚΟ ΙΔΡΥΜΑ
ΠΑΤΡΑΣ**

ΣΧΟΛΗ ΔΙΟΙΚΗΣΗΣ ΟΙΚΟΝΟΜΙΑΣ

**ΤΜΗΜΑ ΕΠΙΧΕΙΡΗΜΑΤΙΚΟΥ ΣΧΕΔΙΑΣΜΟΥ &
ΠΛΗΡΟΦΟΡΙΑΚΩΝ ΣΥΣΤΗΜΑΤΩΝ**

ΠΤΥΧΙΑΚΗ ΕΡΓΑΣΙΑ

**ΚΑΙΝΟΤΟΜΙΑ ΚΑΙ ΠΡΟΣΤΑΣΙΑ ΤΩΝ ΠΝΕΥΜΑΤΙΚΩΝ
ΔΙΚΑΙΩΜΑΤΩΝ ΣΤΟΝ ΔΕΥΤΕΡΟΓΕΝΗ ΤΟΜΕΑ**

**ΟΝΟΜΑΤΕΠΩΝΥΜΟ ΣΠΟΥΔΑΣΤΗ: ΣΟΥΛΕΛΕΣ ΙΩΑΝΝΗΣ
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1. INTRODUCTION	1
STRUCTURE OF THE DOCUMENT.....	2
2. THE IDEA OF INNOVATION	6
3. SMALL AND MEDIUM-SIZED ENTERPRISES	7
4. INTELLECTUAL PROPERTY RIGHTS IN CONTEMPORARY MARKET LANDSCAPE (SME’S)	7
5. IPR’S ORGANIZATIONS AND APPROPRIATE INNOVATION	10
5.1 WIPO.....	10
5.2 WTO (TRIPS AGREEMENT).....	10
5.3 EUROPEAN PATENT OFFICE (EPO).....	11
5.4 UNITED STATES PATENT AND TRADEMARK OFFICE (USPTO).....	11
5.5 JAPAN PATENT OFFICE (JPO).....	12
5.6 CENTRALISED IP COURTS.....	12
6. APPROPRIATE INNOVATION	13
7. INSTITUTIONAL MECHANISMS OF PROTECTION	15
7.1 PATENTS.....	16
7.1.1 REQUIREMENTS FOR GRANTING PATENTS.....	16
7.1.2 PATENT APPLICATION.....	17
7.1.3 TERMS OF PROTECTION.....	18
7.1.4 THE EUROPEAN PATENT CONVENTION.....	18
7.1.5 THE PATENT COOPERATION TREATY.....	18
7.1.6 NATIONAL, EUROPEAN, INTERNATIONAL PATENT APPLICATION.....	19
7.1.6.1 NATIONAL PATENTS.....	19
7.1.6.2 EUROPEAN PATENT.....	19
7.1.6.3 INTERNATIONAL PATENT.....	20
7.1.7 BUSINESS METHODS.....	20
7.1.8 COST OF PATENTING.....	21
7.1.9 GRACE PERIOD.....	23
7.1.10 MEASURES AIMED AT ENCOURAGING SME’S FOR PATENTING.....	23
7.1.11 THE SHORT-TERM PATENT.....	24
7.1.12 ADVANTAGES AND DISADVANTAGES.....	24
7.2 UTILITY MODELS.....	26

7.2.1	REQUIREMENTS FOR UTILITY MODEL.....	26
7.2.2	CHARACTERISTICS OF THE PROCEDURE FOR OBTAINING A UTILITY MODEL.....	27
7.2.3	ADVANTAGES AND DISADVANTAGES.....	28
7.3	TRADEMARKS.....	30
7.3.1	THE ROLE OF TRADEMARKS.....	30
7.3.2	TRADEMARKS AND INNOVATION.....	33
7.3.3	THE COMMUNITY TRADEMARK SYSTEM.....	34
7.3.4	ADVANTAGES AND DISADVANTAGES.....	35
7.4	INDUSTRIAL DESIGNS.....	36
7.4.1	WAYS OF PROTECTION.....	37
7.4.2	COMMUNITY DESIGN.....	38
7.4.3	TYPES OF COMMUNITY DESIGNS.....	39
7.4.4	INDUSTRIAL DESIGN FEES.....	39
7.4.5	ADVANTAGES AND DISADVANTAGES.....	40
7.5	COPYRIGHT.....	41
7.5.1	RIGHTS GRANTED WITH COPYRIGHT.....	42
7.5.2	INTERNATIONAL CONVENTIONS IN COPYRIGHT.....	43
7.5.3	THE EFFECT OF BERNE CONVENTION.....	44
7.5.4	SOFTWARE AND COPYRIGHT.....	44
7.5.5	ADVANTAGES AND DISADVANTAGES.....	45
8	ALTERNATIVE WAYS TO PROTECT INNOVATION.....	46
8.1	CONTRACTUAL PROTECTION, CONFIDENTIAL AGREEMENTS...	46
8.1.1	IDENTIFYING THE PARTIES.....	46
8.1.2	SUBJECT.....	46
8.1.3	DISCLOSED INFORMATION.....	47
8.1.4	USE OF INFORMATION.....	47
8.1.5	TERM OF THE AGREEMENT.....	47
8.2	TRADE SECRETS.....	48
8.2.1	HOW TRADE SECRETS ARE PROTECTED.....	49
8.2.2	TRADE SECRET PROTECTION IN EU.....	50
8.2.3	PHYSICAL RESTRICTIONS AND SECURITY IN THE ELECTRONIC ENVIRONMENT.....	51
8.2.4	ADVANTAGES AND DISADVANTAGES.....	52

8.3 EMPLOYEE RELATIONSHIP.....	53
8.4 DEFENSIVE PUBLISHING.....	54
9 CONCLUSION.....	55
10 BIBLIOGRAPHY.....	56
10.1 DIGITAL.....	56
10.2 WEBSITES.....	57

1. INTRODUCTION

Innovation has long and widely been argued to be the engine of growth. Innovation is also considered as a key factor in sustainable economic development, social development, new job creation and industrial competitiveness, being a topic of discussion and debate for a very long time. The creation, management and promotion of innovation is a multidisciplinary exercise requiring the expertise of many areas such as engineering, manufacturing, marketing and business strategy, finance, human resources managements. Innovative and creative ideas are at the heart of most successful businesses. Ideas by themselves, however, have little value. They need to be developed, turned into innovative products or services and commercialized successfully so as to enable the SME's to reap the benefits of your innovation and creativity. Intellectual Property (IP), can be crucial for turning innovative ideas and inventions into competitive products that significantly increase profit margins.

Small businesses account for 99% of all European companies and 66% of private-sector employment. They are the heart of the European economy, driving entrepreneurship, growth, innovation, competitiveness and employment. As such, they have been given a central role in the EU's economic reform agenda (the "Lisbon strategy"), as part of its new partnership for growth and employment. This should see both EU and national policies tailored to ensure the most favourable possible climate for such firms to operate.

The value of intellectual property (IP) is often not adequately appreciated and its potential for providing opportunities for future profit is widely underestimated by SMEs. However, when IP is legally protected and there is demand for the IP-protected products and/or services in the marketplace, IP can become a valuable business asset.

The rules of intellectual property law prevent competitors from imitating the innovative appearance or function of products. However, these rules are not derived from one single source, but are found in copyright law, designs law, patents law, trade secrets law and, when it comes to novel appearance, also in passing off and trade marks law. Bringing together all these rules of intellectual property in a practical format, Intellectual Property Law and Innovation covers the areas of intellectual property law that are most relevant to both product and technological innovation.

Innovation is a central theme of our times, and within it IP law plays a significant, if difficult to evaluate role. Encouraging innovation and using intellectual property law to capitalise on investment in innovation are topics well rehearsed and frequently addressed in public forums by government bodies, public institutions and private advisers. Intellectual property law relating to innovation consists largely of regimes that are technology-neutral, ie the criteria for protection are abstract and do not identify the subject matter by its concrete technological nature or visual character.

STRUCTURE OF THE DOCUMENT

This document the protection of innovation and IPR's in the contemporary market landscape and specially for SME's. A common understanding within the EU is that small and medium sized enterprises (SMEs) are a driving force for the economic growth and improved employment. We analyze the the issue of innovation from two options.(1) protection of IPR from institutional mechanisms (2) protection from inside the innovative bussines and the advantages and disadvantages of each way of protection. We focus to protection of IPR for SME's and how they can benefit from this protection in order to take a competitive advantage to the contemporary market place.

2. THE IDEA OF INNOVATION

Innovation is a complicated and heterogeneous process, the dynamics of which will tend to vary from case to case. In general terms the innovation process can however be understood to involve the sustainable generation, distribution and utilization of new economically-relevant knowledge which continuously accumulates and is recombined in the economy. This process boils down to an ongoing interaction between the generation of technological variety and its selection. There is a complex set of factors that induce and promote the creation of diversity and affect the selection process. It follows that there is likewise a complex interrelationship that keeps the virtuous circle of the two in swing. Intellectual property rights regimes and institutional standardization are two central institutions that play complementary roles in perpetuating such a balance. The purpose of innovation is to create a new value, be it for individual, team or for the society at large.

Invention → to conceive the idea

Innovation → to use the process by which an invention or idea is translated into the economy.

Yet innovation takes many forms. In addition to traditional technological innovation, there is innovation through new business models, new ways of organising work, and innovation in design or marketing. Managing and exploiting to best effect all these different kinds of innovation represents a major challenge to businesses today.

Technological innovation:

Products & Services Development with:

1. Creating Departments Research & Development
2. Employment of qualified staff
3. Personnel training in new technologies

Organizing - Administrative Innovation with:

1. Upgrading - Automated Production Line
2. Implementation of quality systems

3. Application of modern methods to promote products
4. Application flexible organizational structure.

3. SMALL AND MEDIUM-SIZED ENTERPRISES

In the increasingly knowledge-driven economy, intellectual property (IP) is a key consideration in day-to-day business decisions. New products, brands and creative designs appear almost daily on the market and are the result of continuous human innovation and creativity. Small and medium-sized enterprises (SMEs) are often the driving force behind such innovations. Their innovative and creative capacity, however, is not always fully exploited as many SMEs are not aware of the intellectual property system or the protection it can provide for their inventions, brands, and designs. If left unprotected, a good invention or creation may be lost to larger competitors that are in a better position to commercialize the product or service at a more affordable price, leaving the original inventor or creator without any financial benefit or reward. Adequate protection of a company's intellectual property is a crucial step in deterring potential infringement and in turning ideas into business assets with a real market value. Taking full advantage of the IP system enables companies to profit from their innovative capacity and creativity, which encourages and helps fund further innovation. To help SMEs more fully utilize their IP assets in their business activities, the World Intellectual Property Organization (WIPO) has established a program to assist entrepreneurs, SME-support institutions, and national governments in increasing awareness and use of the IP system among SMEs across the globe.

4. INTELLECTUAL PROPERTY RIGHTS IN CONTEMPORARY MARKET LANDSCAPE (SMEs)

The economics literature tends to cast IPRs, particularly patents, as “appropriation mechanisms whose dominant function is to create an incentive for private R&D where the market does not. Intellectual Property is being increasingly recognised as a powerful tool to create wealth through knowledge. The TRIPS (*Agreement on Trade Related Aspects of Intellectual Property Rights*) defines use of technologies,

marketing, territorial restrictions and non-tariff barriers. Importance of IPR in technology development needs to spread widely in SME sector. The protection of technology is increasing for industrial investment particularly in technology sensitive sectors as pharmaceuticals, information technology etc.

The system of intellectual property (IP) rights creates a mechanism to resolve the “appropriability” problem of knowledge, by creating property rights over knowledge. IP rights may be defined as exclusive rights granted by the State giving the owner the right to exclude all others from the commercial exploitation of a given invention, new/original design, trademark, literary and artistic work and/or new variety of plant. By providing a fair degree of exclusivity over the exploitation of innovation(s), the system of IP rights creates an incentive to invest in scientific, technological, and organizational R&D activities so as to reduce the risk of free-riding by others while commercially exploiting product and process innovations.

The creation of property rights enables the exercise of ownership over the intellectual output of R&D activities. This is done by creating, using, and leveraging IP rights that enable the owner of IP rights to enter into negotiations with others in order to take a new product to market through various kinds of partnerships. Often, these partnerships are based on special contractual arrangements known as licensing contracts that permit third party use of one or more types of IP rights in exchange for a valid consideration in cash or kind. A secure access to IP rights, through ownership or licensing of IP rights, may also be important for obtaining funds from financial institutions and investors, particularly business angels and venture capitalists.

In the OECD (organization for economic co-operation and development) countries, SMEs account for 95% of companies and 60 to 70 % of employment. Given the significant role of SMEs in the national economy in terms of their sizeable contribution to GDP (gross domestic product), employment generation, export performance, and achieving sustainable national economic development, all national governments in the OECD consciously seek to facilitate the creation and development of the national SMEs sector. Over the past two decades, government policies have consistently sought to encourage innovation among SMEs, on the understanding that the development of a vibrant and dynamic SMEs sector, requires constant creativity and innovation to adapt to fast-changing market conditions, short product cycles and intense market competition.

SMEs, however, are an extremely heterogeneous group. Their innovative capacity and ability to develop new and innovative products, processes and services varies significantly, depending on their sector, size, focus, resources and the business environment in which they operate. For new technology-based firms (NTBFs), reliance on IP rights for a competitive edge is increasingly important. NTBFs are new firms established for the purpose of commercializing new technology or providing an innovative service on the basis of new technology. Such enterprises generally have limited capital and tangible assets and largely depend on intangible assets to succeed in the marketplace. The innovative idea is usually the main asset of the company during its start-up phase and the basis on which it will seek investors to take the product or service to market. For technology-based entrepreneurs and start-ups it is critical to find ways of appropriating their innovative ideas, products and processes in order to survive in the marketplace, obtain a competitive edge and have a credible business plan to present to investors.

In a number of other sectors, however, innovation by SMEs mainly consists in minor adaptations to existing products, innovation in designs, mode of service delivery or management and marketing practices. In many such sectors, SME innovations are mainly of an informal nature, without formal R&D investments, R&D laboratories or R&D personnel. In such cases, other intellectual property rights, such as utility models, industrial designs and trademarks may play a bigger role than patents in providing a competitive edge to SMEs.

IP rights such as trademarks and industrial designs may provide companies with the ability to differentiate their products, segment markets, create a brand image, find niche markets, target specific customer groups and obtain exclusivity over the commercial use of a mark or design that may be the main selling point of a new or improved product or service. The strategic use of IP rights by enterprises, including SMEs, will depend on the company's overall business strategy. Effective management of IP rights may provide new business opportunities for companies with the appropriate skills, innovative capacity and resources to benefit from the range of options offered by the IP system.

SMEs are often constrained in many more ways than larger enterprises in making an effective and efficient use of the IP system. The heterogeneity of SMEs in terms of their ability to innovate and to use existing technology is also reflected in the ways that such enterprises use the IP system; it varies widely from company to company,

sector to sector, country to country, and over time. The crucial point to note is that SMEs of varying sizes and levels of technological sophistication may benefit from different aspects of the intellectual property system according to their specific needs and technological capacity. In the knowledge-based economy, it is their ability to use the IP system efficiently and effectively which will largely influence their capacity to make the most of their creative and innovative capacity and recoup their investments in innovation.

5. IPRs ORGANIZATIONS & APPROPRIATE INNOVATION BY SMEs.

5.1 WIPO:

WIPO was established by the WIPO convention in 1967 with a mandate from its member states to promote the protection of IP throughout the world through cooperation among states and in collaboration with other international organizations. Its headquarters are in Geneva, Switzerland. WIPO's vision is that IP is an important tool for the economic, social and cultural development of all countries. This shapes its mission to promote the effective use and protection of IP worldwide. WIPO has 5 strategic goals:

- To promote an IP culture
- To integrate IP into national development policies and programs
- To develop international IP laws and standards
- To deliver quality services in global IP protection systems
- To increase the efficiency of WIPO's management and support processes.

5.2 WTO (TRIPS AGREEMENT):

The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) is an international agreement administered by the world trade organization (WTO) that sets down minimum standards for many forms of intellectual property (IP) regulation. It was negotiated at the end of the Uruguay Round of the general agreement on tariffs and trade (GATT) in 1994. The TRIPS agreement introduced intellectual property law into the international trading system for the first time, and

remains the most comprehensive international agreement on intellectual property to date.

5.3 EUROPEAN PATENT OFFICE (EPO):

The EPO was established by the contracting states to the EPC signed in Munich in 1973 (entry into force in 1977) with the aim of increasing co-operation within Europe in the protection of inventions by providing a centralised granting procedure and standard rules for patents granted by this procedure. As explicitly declared in 2001: *“The mission of the EPO is to support innovation ,competitiveness and economic growth for the benefit of the citizens of Europe. Its task is to grant European patents for inventions, on the basis of a centralised procedure. By filing a single application in one of the three official languages (English, French and German) it is possible to obtain patent protection in some or all of the EPC contracting states.”*

5.4 UNITED STATES PATENT AND TRADEMARK OFFICE (USPTO):

The United States Patent and Trademark Office (PTO or USPTO) is an agency in the United states department of commerce that issues patents to inventors and businesses for their inventions, and trademark registration for product and intellectual property identification. The USPTO cooperates with the European patent office (EPO) and the Japan patent office (JPO) as one of the Trilateral patent offices. The USPTO is also a Receiving Office, an International Searching Authority and an International Preliminary Examination Authority for international patent applications filed in accordance with the patent cooperation treaty.

The mission of the PTO is to promote "industrial and technological progress in the United states and strengthen the national economy" by:

- administering the laws relating to patents and trademarks
- advising the secretary of commerce , the president of the united states, and the administration on patent, trademark, and copyright protection and
- providing advice on the trade-related aspects of intellectual property.

5.5 JAPAN PATENT OFFICE (JPO):

The Japan Patent Office (JPO) is a Japanese governmental agency in charge of industrial property rights affairs, under the Ministry of economy, trade and industry. The Japan Patent Office is located in Kasumigaseki, Chiyoda-ku, Tokyo and is one of the world's largest patent offices. The JPO cooperates with the United States Patent and Trademark Office (USPTO) and the European Patent Office (EPO) as one of the Trilateral patent offices.

5.6 CENTRALISED IP COURTS:

In 1982 a new court, the CAFC, was assigned jurisdiction over appeals of patent cases at United States federal circuits. The creation of the CAFC tends to be considered as one of the most fundamental changes the United States patent regime has gone through in the past few years, affecting both directly and indirectly many different dimensions of the system. A number of CAFC decisions have paved the way to the expansion of subject matter observed at USPTO, and CAFC decisions have had an effect on the strength of rights held by patent holders by reducing the rate of invalidation of USPTO decisions. The specialisation of courts in intellectual property issues has also been a priority in Japan and Europe. Between 1997 and 2002, Japan improved its technical settlement system for intellectual property suits by increasing the number of divisions specialised in IP, the number of judges in charge of IP and *chosakan* (court investigators) at Tokyo High Court, Tokyo District Court and Osaka District Court. In 1998 Tokyo District Court and Osaka District Court were allowed concurrent jurisdiction over IP-related proceedings. Apart from the immediate effect of shortening the duration of litigation proceedings for IP-related suits significantly, from 31.9 months on average in 1993 to 18.3 in 2001, it remains to be seen whether their impact of those measures in Japan has been as pervasive as that of the creation of the CAFC in the United States.

The creation of a centralised IP court in Europe is highly dependent on the project to establish a Community Patent, given that if it moves forward, it would involve setting up a community patent court to secure uniformity of the jurisprudence (to be established by 2010 at the latest, as reads the current proposal). Along the same lines, negotiations on the EPLA have been paused at the moment waiting for some more

definitive plans on the Community Patent and its proposed centralised litigation system.

6. APPROPRIATE INNOVATION

Studies from various OECD countries reveal that SMEs face a number of difficulties in using the IP system. This is often the result of their limited knowledge of the ins and outs of the IP system, lack of clarity about its relevance to their business strategy and competitiveness, and of their finding the system too complex and expensive to use. Available studies/research on the use of the IP system by SMEs are largely limited to the use of patents. This empirical evidence paints a picture in which the propensity to apply for patents is highly related to the size of the company. This is the case even when focusing exclusively on innovative companies. The evidence is somewhat similar, though to a lesser degree, for trademarks (WIPO, 2003). SMEs that do not apply for patents stated that the main reasons for not doing so are the costs and time needed for filing applications, while some SMEs also mentioned the ineffectiveness of the patent system. There is a major information deficit among SMEs on the patent system, which leads to a low level of filing of patent applications by potential applicants, and a lack of active government support to assist SMEs in the patenting process given the large number of barriers faced.

SMEs often use alternative means of appropriating their innovations. Some of the alternatives to patenting include secrecy, exploitation of lead-time advantages, moving rapidly down the learning curve, use of complementary sales and service capabilities, technical complexity, on-going innovation, relationships based on trust and use of trademarks to differentiate their products from those of imitators.⁷ It is often noted that secrecy and lead-time advantages may be the most common way of appropriating innovations among firms, particularly (though not exclusively) among SMEs. One of the main reasons for this is that a large variety of innovations may lack the inventive step to be protectable under the patent system (in such cases utility models, where such protection is available, or industrial designs may be suitable alternatives) or because process innovations or innovations in certain low-technology sectors are less likely to be patented.

With respect to the use of secrecy as a means to appropriate innovation, companies may rely on legislation on trade secrets and/or unfair competition for the protection of

their confidential business information. Trade secrets are intellectual property rights recognized as such by international agreements such as the WTO/ TRIPS Agreement. However, very little is known on how SMEs protect their trade secrets and to what extent they are aware of the protection offered by specific national laws on trade secrets and/or laws on unfair competition that also deal with protection of trade secrets. There is a general perception that SMEs often use trade secret protection by default, i.e. as a way of avoiding the expenditure and administrative procedures involved in patent protection, without taking adequate measures that need to be in place in order to ensure that confidential information is considered a legally protectable trade secret. According to most national IP laws, for a trade secret to be protected, there is a need to prove that (1) the information is secret (i.e., it is not generally known among, or readily accessible to, circles that normally deal with the kind of information in question), (2) it has commercial value because it is secret, and (3) the rightful holder of the information has taken all possible reasonable steps under the circumstances to keep it secret or confidential (e.g., through confidentiality agreements, non-disclosure agreements, etc.).

An area that has not been fully explored, is the extent to which SMEs use titles of protection other than patents. Raw statistics on applications for utility models and industrial designs have shown that, with some exceptions, SMEs have generally made limited use of these two forms of protection, despite them being considered titles of protection that would appear to be most suited to SMEs. For example, it appears that SMEs, in most countries where designs may be protected by copyright and as registered design rights, rely more often on copyright as a means of protection, as it does not require registration as a condition for protection. Again, it would be appropriate to inquire whether reliance on copyright is the result of conscious business strategy (in which case, appropriate measures to keep necessary evidence to prove ownership would be required) or whether reliance on copyright is by default as a result of limited knowledge of the existence of industrial design protection or as away to avoid the costs involved in industrial design registration.

The difficulties to appropriate innovation by SMEs are, therefore, many. In the first place, low awareness of the system limits the exposure SMEs have to the IP system and their ability to use all the elements offered by the IP system effectively, including not just patents but also utility models, trademarks, industrial designs, trade secrets, patent databases, copyright and other IP rights. Poor IP management skills within

SMEs reduce their ability to fully benefit from the system and, therefore, discourage its future use. Secondly, limited access to the necessary human resources and/or accessible legal advice make use of the IP system complicated and decreases the chances of success in the application process for registration/grant of IP rights. Efficient IP management requires an array of skills ranging from the legal to the scientific/technical and the commercial that not all SMEs have in-house. In fact, such expertise is generally lacking in many if not most SME support institutions; this is equally true of SME consultants and business advisors in the private sector. Thirdly, high costs, not just for acquiring and maintaining but also for monitoring and enforcing IP rights are an additional barrier, particularly for firms that are operating in a number of geographically dispersed markets.

7. INSTITUTIONAL MECHANISMS OF PROTECTION

The focus on innovation will naturally draw the bulk to the patent system. However, it is important to bear in mind that innovation in its broadest sense may be protected through a variety of different intellectual property rights, depending on the nature of the innovation, the sector a company is operating in, the legal instruments available in a given country and a company's business strategy. The main types of IP rights are: (1) patents and utility models (for inventions), (2) trademarks, (3) industrial designs, (4) valuable undisclosed information or trade secrets(5) copyright.

An area that has not been fully explored, is the extent to which SMEs use titles of protection other than patents. Raw statistics on applications for utility models and industrial designs have shown that, with some exceptions, SMEs have generally made limited use of these two forms of protection, despite them being considered titles of protection that would appear to be most suited to SMEs. For example, it appears that SMEs, in most countries where designs may be protected by copyright and as registered design rights, rely more often on copyright as a means of protection, as it does not require registration as a condition for protection. Again, it would be appropriate to inquire whether reliance on copyright is the result of conscious business strategy (in which case, appropriate measures to keep necessary evidence to prove ownership would be required) or whether reliance on copyright is by default as

a result of limited knowledge of the existence of industrial design protection or as a way to avoid the costs involved in industrial design registration.

7.1 PATENTS

Patents are considered to protect technological inventions, either products or processes. A patent provides the patent holder with the right to exploit the invention during 20 years in an exclusive manner. He can also prevent others from producing, offering, selling or using his invention, without his permission. Society benefits from the inventor's contribution thanks to its disclosure through the patent.

An invention is defined as a creation, an intellectual effort that produces a result, in the technical domain. It is a technical solution to a technical problem. This solution can be qualified as an idea. Patents protect ideas once they have been materialised and fulfil the three patent protection requirements. In fact, it is the materialisation of an idea, which enables the idea to be protected. The European Patent Convention does not explicitly provide a definition of invention. It just enumerates a non exhaustive list of things that are excluded from patentability such as discoveries, scientific theories, mathematical methods, aesthetic creations, schemes, rules and methods for performing mental acts, playing games or doing business, and computer programs and presentations of information. The main argument for the exclusion of discoveries is that they are already part of the physical world. However, it must be pointed out that in the case of an existing thing, that is already known by everybody, there could be an intellectual creation if the inventor has used it in a new practical aim, in order to solve a problem, and so, it shall be patentable. An example of an existing thing in human nature is DNA sequences. These are already present in life, but in the moment that a sequence is isolated using different technical methods, which involves a human intervention, it exists a potential patentability that will have to be assessed afterwards with patent requirements.

7.1.1 REQUIREMENTS FOR GRANTING PATENTS

Three requirements must be fulfilled: the invention must be new, must imply an inventive step, must be susceptible of industrial application.

NOVELTY:

The European Patent Convention defines this requirement in article 54: “an invention shall be considered new if it does not form part of the state of the art”. The state of the art is “everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application or the priority date if the application has one”.

INVENTIVE STEP:

The invention must not be obvious to a person “skilled in the art”, who is practitioner who knows the technical field in which the invention falls.

INDUSTRIAL APPLICATION:

The invention must be susceptible to be used in any kind of industry, including agriculture.

7.1.2 PATENT APPLICATION

In order to grant for a patent, some formal documents need to be provided in the patent application phase. These documents are not linked to the invention itself, but are necessary to proceed with the prior art search and the substantive examination of the patent requirements. This procedure can be expensive and it can be useful to carry out a cost benefit analysis. Specialised firms or law firms can help to develop an invention and then apply for the patent.

Due to the territorial nature of patent rights, you should consider the geographical protection you wish to obtain with the patent before applying.

- To obtain a national patent, valid for the territory of the country in which you have filed the application (the patent is granted by the national patent office) .
- To obtain a European patent with validity in several European member countries of the European Patent Organization, granted by the European Patent Office.
- To obtain an international patent via the Patent Co-operation Treaty, with validity in several signatory countries of the PCT convention, granted by national patent offices.

7.1.3 TERMS OF PROTECTION

The term of protection runs for a maximum of 20 years as from the application date for national patent. This term can be abbreviated by the patentee.

7.1.4 THE EUROPEAN PATENT CONVENTION (EPC)

According to the European Patent Convention (EPC) (from 1973 a special association within the Paris Convention which currently has 28 contracting states (2004)), protection by a European patent may be achieved in one, several or all contracting states of the European Patent Organization with a single application to the European Patent Office (EPO). After the patent is granted, competence is transferred to the designated states explicitly mentioned in the application. The unitary term of the European Patent is 20 years from the filing date of the application. Even though the European Patent Convention contains a system of law common to the contracting states, the national law of the designated states is also applicable, because after they are granted European Patents are treated as national patents. Therefore, any infringement of a European patent is dealt with by national law. In the context of this treaty, applicants may claim the date of the filing of the European Patent (priority date) for the same invention for subsequent European or national filings, because the application is regarded as equivalent to a regular national filing. Vice versa, a duly filed national application in and for any associated state of the Paris Convention enjoys a priority right for the purpose of filing a European Patent application.

7.1.5 THE PATENT COOPERATION TREATY (PCT)

The Patent Co-operation Treaty (PCT) concluded in Washington in 1970 is a multilateral treaty with 123 contracting states (August 2004). The PCT allows an international application procedure as a preliminary stage to the national assignment process in the contracting states “designated in the international application. The international application procedure has the same effect as a national or regional (e.g. European) application, including the priority of the date of application. International patent applications can be filed with each National Patent Office acting as a PCT-

Office or with the International Bureau of the WIPO. Where a PCT Contracting State is party to a regional patent treaty, such as the EPC, the regional office is the designated regional office (other regional patents can be obtained from the ARIPO office, the Eurasian Patent Office, or the OAPI office). While the application procedure follows the PCT status, the granting procedure conforms to national/regional laws of the states designated in the application. One can connect the granting procedure for the European patent at any time with the parallel acquisition of patents under the PCT system. This procedure is known as the Euro-PCT-route.

7.1.6 NATIONAL, EUROPEAN AND INTERNATIONAL PATENT APPLICATION

An applicant can also choose, if he wishes to apply for a national patent, to do so via a European office or to file an international patent application.

7.1.6.1 NATIONAL PATENTS:

Almost every state in the world has its own patent system. However, there are a couple of national differences in the patent systems. Most states, such as in Europe, apply the so-called first-to-file rule. According to this rule, the first applicant has priority over any subsequent applicant. In some other countries, such as in the US, the corresponding rule is known as first-to-invent. According to this principle, in the event of conflicting applications, the person who first made the invention is entitled to the patent and not the person who first applied for the patent.

7.1.6.2 EUROPEAN PATENT:

Since 1st June 1978, patent protection based on a single European patent application has been obtainable in a number of states. An applicant requests protection for the invention in one or more countries party to the European Patent Convention via the European Patent Office. Once a patent is granted using a centralised procedure, a European patent breaks down into national patents like a bunch of flowers. European patents are then treated as national patents in each of the designated states.

7.1.6.3 INTERNATIONAL APPLICATION:

An application is international when it is filed under and with reference to the Patent Cooperation Treaty (PCT). The PCT makes it easier for inventors to obtain protection in more than one state or region as they only need to file a single patent application to do so. A PCT procedure consists of two main phases. It begins with the filing of an international application and ends with the granting of national and/or regional patents. In addition, there are several other regional Patent Agreements, such as the Eurasian Patent Convention, the African Regional Industrial Property Organization and the African Intellectual Property Organization.

7.1.7 BUSINESS METHODS

Business method inventions can be defined as broadly as “new ways for doing business”. However, in the absence of a more appropriate operational definition, they tend to be narrowly identified with inventions classified under patent class 705 at USPTO, entitled as “data processing: financial, business practice, management or cost/price determination”. Patents for business methods have been granted in the United States since the 1880s, however, they were until very recently small in number and easily challenged in court. United States courts began to look at business method patents more favourably in 1982, when the Federal Court validated in *Merrill Lynch v. Paine Webber* a business method patent against claims from a competitor that the invention was not patent subject matter. Remaining legal uncertainty was removed in 1998 when the CAFC explicitly stated in the *State Street Bank* decision that a mathematical algorithm should not be excluded from patentability if it produces a ‘useful, concrete and tangible’ result. In the past five years, thousands of business method patents have been granted at USPTO to financial inventions on asset valuation, debt management, education finance, mortgages, privatisation, risk assessment, stock picking and working capital finance, among others, but they represent a very low share of the total number of patents granted in the United States (Hall, 2003; Thomas, 2001).

In Japan, JPO clarified the patentability of software-related inventions of new business methods and their examination practice in guidelines issued in 2000. The guidelines state that the inventive step will be denied to software-related inventions of business methods that merely consist on the application of a known technology in one

field to another specific field, the automation of manual tasks or a change of design based on artificial arrangements. As a result, software-related inventions of business methods are deemed not patentable in Japan when *“the invention can be easily conceived through combining publicly known means and methods by those having common knowledge on the business field related to the patent application and technological knowledge on the computer technology.”*

In Europe, the EPC rejects the patentability of business methods *as such* in Art. 52, as is the case for software. Moreover, the EPO has expressed its negative position towards the patentability of business methods and the proposal for a European Commission Directive on the patentability of computer-implemented inventions clearly excludes business methods from patentability as seen above. Nevertheless, between 30% and 40% of business method inventions for which a patent is granted by USPTO are also applied at EPO. Around 70% of those were also awarded a patent at EPO during the 1980s and early 1990s, however this only represented about 40 EPO grants per year on average in the 1990s.

7.1.8 COST OF PATENTING

The cost of patenting are generally perceived as one of the greatest barriers for SME. In budgeting the costs relating to the acquisition of IP rights, companies need to take into consideration not only the official fees (including application fees, publication fees and maintenance fees) but also the costs relating to application preparation and prosecution, legal advice and translation costs whenever the applicant intends to apply for protection abroad. Overall, the costs of protection may be perceived by many SMEs as exceeding the potential benefits to be obtained from protection, particularly considering that a significant part of the costs may be incurred before the product has reached the market and that lenders, investors or government programs rarely provide financial support for the protection of IP rights. Nevertheless, evidence gathered by some national IP offices (e.g. the Danish Patent and Trademark Office) suggests that a reduction of fees for SMEs would not necessarily lead to an increase in the number of patent applications from that sector. It may be that the other costs related to patent protection, other than the official filing and processing fees may be more of an obstacle, or that the perception of high costs, complexity or ineffectiveness of the patent system, especially in terms of enforcement of patent

rights, may be more of a limiting factor than the actual costs involved. However, it may also be that the reasons for low use of the patent system by SMEs may be totally unrelated to costs of filing but relate, for example, to business strategy, to a limited knowledge of the IP system or to limited access to expert advice on the subject matter. EPO has recently introduced substantial reductions in the administrative costs of patenting for applicants, bringing costs more in-line with those in the United States and Japan and making patents a more affordable means of protecting intellectual property in Europe. The administrative costs of obtaining patent protection in Europe have been traditionally much higher than in the United States and Japan. Patent fees for a standard EPO application (including eight designated states) were about three times higher than for standard applications at JPO or USPTO, until 1997, and the difference between EPO and USPTO fees was even larger for small firms, universities or individuals, who enjoy a 50% reduction at USPTO. But application fees are a small part of total patenting costs in Europe. Efforts to reduce total costs of patenting in Europe are one of the main reasons behind the proposal of the creation of a Community Patent discussed above. Large part of the cost differential between a standard EPO patent and USPTO or JPO patents depends on renewal fees and translation costs. After a patent has been granted by the EPO, the patentee needs to translate his/her patent into the national languages of all states where he/she wants to validate, and pay renewal fees. Patent attorney's and agent's fees also count for a large part of the differences in total costs of patenting across jurisdictions and are difficult to estimate. Reducing the administrative costs of patenting is indeed one of the priorities in European patent policy agenda, and some recent developments reflect these efforts. First, a number of EPC countries signed the London Agreement in 2000 eliminating the obligation to translate EPO applications into their national languages. However, the London Agreement has not been implemented yet due to lack of ratification by a number of states. Second, the common political approach on the Community patent reached on 3 March 2003, proposed several cost-reducing measures, in particular, as regards translation costs. However, as seen earlier, no definitive agreement has been reached yet on the Community Patent.

7.1.9 GRACE PERIOD

According to the European patent law, an invention has to be absolutely new (Art.54 EPC). This means that patents will only be granted if they do not form part of the art, and, thus, the invention has not been published or made available to the public in any way by the time of the patent application. In contrary, some countries (Germany, Austria) provide a grace period for utility models. The central idea is that despite the publication of the invention by the inventor himself, he can subsequently file for an application within a period of sixth months after disclosure.

In the USA, Canada and Japan, a grace period traditionally exists for patents too, so that the inventor has the possibility filing a patent application within 6 months after his or her publication. Therefore, there are discussions in Europe about introducing such a reprieve. Public sector researchers in particular attach great value to the possibility of disseminating and publishing their results without delay. SMEs point out that they need time before making a patent application to estimate the technical and commercial use of the invention.

A counter-argument often used by big industry is the legal uncertainty caused by a grace period as regards the novelty of an invention. By the publication of results that can be patented, the decision on their dissemination is made impossible for several months. That is in fact as long as the extent of hypothetical claims in conjunction with probably granted intellectual property rights is not known. Moreover, this kind of reprieve would not grant adequate protection for fast moving technology sectors like biotechnology, pharmaceuticals and information technology due to the danger that clever competitors will use the knowledge.

7.1.10 MEASURES AIMED AT ENCOURAGING SMEs FOR PATENTING

There are three main types of measures that are employed to encourage SMEs to patent. The first arises from the perception that SMEs are deterred by the costs of applying for and maintaining patents. Thus the easiest measure is to either reduce application fees (as at the EPO) or in some cases eliminate such fees altogether (as in the UK). However this is only a small fraction of the overall actual cost to the firm (other costs include the hiring of patent attorney and translation costs in the case of a European patent). Thus in some countries firms are offered financial assistance

towards acquiring patents (examples are Belgium and Germany). The other costs that deter small firms are those related to defending a patent from infringement by a rival, especially if the rival happens to be a large firm with greater financial resources. The second set of measures are aimed at reducing the complexity of patenting procedures both at the national and the European level. While these are not specifically aimed at SMEs, they are likely to be the major beneficiaries. In this respect the advent of a single European patent may be the single most important event that will ease the administrative and financial burden on potential applicants. Finally, in some EU countries, measures aimed at awareness building among SMEs are also being pursued. The underlying assumption here being that some firms may not be patenting simply because they are not aware of the benefits of doing so.

7.1.11 THE SHORT-TERM PATENT

This is an expedited patent that is cheaper than a traditional patent. It confers the same rights, but for a shorter period of time, normally six years. This option exists in the Netherlands and Belgium. In fact, it does not mean that a legal right different from a patent is legally recognised but that respective patent laws allow the option to obtain a patent without fulfilling all of the procedural requirements necessary to obtain an ordinary patent, with the proviso that the duration of the exclusive right is then shorter. In France, however, there is a specific legal protection called the "certificat d'utilité", which can be applied for independently to protect a technical invention. However, despite the name, the certificat d'utilité is a second-tier patent, different from what we know as a utility model. In the Netherlands and Belgium, as well as in France, protection by means of a short-term patent or a certificat d'utilité is for technical inventions that fulfil the patentability requirements (novelty, inventive step and industrial application). There is no lesser inventive step requirement, nor are process inventions excluded.

7.1.12 ADVANTAGES AND DISADVANTAGES

Patents are arguably one of the best incentive systems for innovators and help diffuse technology by requiring disclosure of inventions, supporting entrepreneurs and facilitating the creation of markets for technology. Firms report that over the past 10 years, patents have become a more effective means of protecting competitive

advantage. Two thirds of respondents perceived a rise in the economic value of patents, such as the value to be gained through exploiting the patented invention or licensing it to others and 89% reported higher risks associated with not patenting, such as might accrue from competitors making use of an unpatented invention. The two factors that have the most influence on firm's patenting strategies appear to be increased product market competition and the bargaining power of a strong patent portfolio in negotiations with other firms. More than 80% of firms found them either very important or moderately important. 60% of respondents cited product market competition, and almost 48% cited bargaining power as a very important determinant of patenting strategy. Patents are used by holders for securing their position both in competitive and co-operative processes. Other factors – reduced barriers to entry, potential licensing revenues, changes in the administrative ease and cost of filing patents, and effects on stock price – were considered very important by around 20% of respondents and not important by larger shares of respondents.

However, the exclusive rights they confer may distort competition and the efficient allocation of resources, and may represent an obstacle to follow-on innovation. Patent policy needs to ensure the right balance between creating incentives for innovation and enabling the diffusion of knowledge to stimulate further research. This balance is influenced by the economic and institutional environment and results in an ongoing evolution and articulation between changes in economic activities and patent regimes, which in recent years have led toward stronger patents.

A survey of innovative SMEs in five high technology sectors in the Netherlands shows that defence costs are an important reason not to patent for smaller firms (Arundel *et al.*, 1997). For the Dutch firms the cost of a patent application was again the most frequently cited reason (40% of firms), followed by ease of circumvention (35%), information disclosure (34%), and defence costs (27%).

7.2 THE UTILITY MODEL

The utility model is a legal institution the origins of which go back to 1891 in Germany. It was created to fill a gap in the law. The German patent office only granted patents for inventions that were new and displayed a certain level of inventiveness. But there were a great number of technical solutions consisting of industrial creations with little technical or constructive complexity. They were characterised by the fact that they generally included a formal modification of objects in common use and simple tools, where, despite the simplicity of the innovation, there was nonetheless a technical advance on what was previously known. These "small inventions" were not patentable, but the German legislature believed that they did not deserve to remain unprotected seeing as they had an undeniable economic value. That is why the legislature deemed it necessary to create a specific exclusive right, different from the patent and suitable for protecting these minor inventions. The utility model was soon adopted by other countries, including Japan, Poland, Spain, Italy, and Portugal. Not only has the utility model survived in all those countries, but more recently, it has also been introduced in other states such as Greece (1987), Finland (1991), Denmark (1992) and Austria (1994).

Broadly speaking, and excluding some particularities of different States' laws, the utility model protects technical inventions (process inventions are excluded from the protection of the utility model) that fulfil the requirements of novelty and industrial application - some degree of "inventive step" is also required, but it is much lower than for patents. The duration of the exclusive right granted for a utility model is, as a general rule, ten years (except in Greece, where the duration is seven years.)

7.2.1 REQUIREMENTS FOR UTILITY MODEL

The novelty requirement is the same as for patent law, that is to say, the invention is novel if it is not included in the worldwide state of the art when the application is submitted. There are some exceptions, such as in the case of Spain, where only national novelty is required and Germany, where only written disclosures made in any part of the world and the use of the invention within German territory may affect the novelty of a utility model. The requirement of an inventive step is defined differently from the requirement of an inventive step for a patentable invention. In most legislation on utility models, a lower level of inventive activity is required. Although

it is very difficult to assess the level of inventiveness that qualifies, there have been attempts to express, in legal terms, the lower rigour of this requirement with expressions such as "the invention should not derive from the state of the art in a very obvious way for an expert in the field" (instead of the expression "it should not be deduced in an obvious way..." used in patent law). Sometimes the requirement of inventiveness (the "inventive step") does not apply. For instance, Polish law requires that the model itself be useful, meaning that a practical aim is achieved through the solution in the production and use of the products. Finally, in some countries, for example Germany and Austria, there is a grace period. That is to say, the printed publication or use of the invention by the applicant (or by someone acting on the applicant's behalf) does not affect novelty as long as it has taken place within a period of six months prior to the date of filing the application for the utility model.

7.2.2 CHARACTERISTICS OF THE PROCEDURE FOR OBTAINING A UTILITY MODEL

Usually, the procedure for obtaining this form of protection is a simple registration procedure. That is to say, the patent office only examines the fulfilment of the formal requirements for application. Once this formal examination has been completed, the body will proceed to grant the utility model. In this way, the time during which the applicant has provisional protection is considerably shortened. As a general rule, six months after an application is filed, a utility model can be obtained, which means full exclusive rights to the invention are granted. In Spain, for example, after the formal examination of the application, there is an opposition stage: a third party with a legitimate interest may oppose the registration of the utility model by claiming that the invention lacks one of the requirements for protection established by law. In Germany, Austria, Finland and Denmark, the applicant may ask the relevant patent office to write a "report on the state of the art". From this report, it can be determined whether the invention is novel and whether it involves an inventive step. But the report is not legally binding, and the office must grant utility model registration no matter what the result of the report may be. In Portugal, the new Industrial Property Code, approved in March 2003, introduced a patent and utility model granting process that includes the examination of the protection requirements, even though, as regards

utility models, it is, in principal, a voluntary process. If the utility model applicant does not request a prior examination, the Patent Office, once it has examined the formal requirements of the application, will register the utility model. This will be considered a "provisional utility model". This provisional title will be made "definitive" once the applicant, at any moment of the registration procedure, or any third party, once the provisional utility model has been registered, requests that the patent office carry out a prior examination. The corresponding examination fees should also be paid. In addition, if the holder of a provisional utility model intends to enforce its right against a third party, it will have to request that the Office carry out a prior examination. Poland is an exception to this general rule: formal examination of the application is followed by an examination of the legal conditions for protection. In almost all national utility model systems, certain mechanisms connect the utility model to the patent. These mechanisms exist to prevent mistakes on the part of the inventor in applying for adequate protection: there will often be a way to transform a patent application into a utility model application and vice versa. In other cases, these mechanisms prevent the invention from being deprived of protection when the inventor does not have a clear idea of the invention's level of inventiveness. Thus, inventors are allowed to simultaneously apply for a patent and a utility model for the same invention, the registration of the utility being granted only if the patent application fails for want of an inventive step. Finally, in other cases, there is an attempt to offer the inventor full protection for the invention by granting a utility model registration while the patent application is pending (which, as we have said, usually takes a couple of years). This is the case of the so-called internal priority or derivation. Again, Poland is an exception. The change of application is only one-directional, that is to say that during the examination stage or for a period of two months from the refusal to grant a patent, the applicant may apply for a utility model protection right. It is not possible, however, to convert a utility model application into an invention application.

7.2.3 ADVANTAGES AND DISADVANTAGES

Since the requirements in case of a utility model are partly restricted in comparison to a patent they are easier to fulfil. While the granting of a patent requires a special degree of inventive step, the one required for a utility model is lower. Especially for SMEs, utility models are the interest because depending on the companies restricted

personal and financial resources-SMEs typically generate smaller inventions that do not in all cases fulfil the strict requirements for obtaining a patent. Further, the procedure to grant a utility model is a simple registration procedure. Only formal aspects are examined by the national competent granting authorities, there is no verification of substantial requirements such as novelty and inventive step. Therefore, it is possible for inventors to gain protection quite (from 3 to 6 months) and this could be very useful for participants of indirect actions within FP6. In contrast the processing time for a patent application is up to 4 years. The quick registration procedure allows a quicker commercial utilization of the invention by granting licenses or own direct utilization. The right holder is also able to start advertising for a product and to defend acts of infringement quickly. Furthermore, utility models are less expensive because of the simpler registration procedure. Especially for inventions for which commercial success is difficult to estimate, the expense factor is of great importance. This applies in particular to SMEs who do not always have the necessary market information to estimate the sales opportunities of a product.

The shorter term of protection of a utility model can be disadvantageous (6 years in France and Belgium, 7 years in Greece, 10 years in Austria, Poland, Estonia, Slovenia, the Czech Republic, Denmark, Germany, Finland, Italy, Ireland, Portugal, and Spain). However, this is not necessarily disadvantageous, because some inventions do not need the long protection of 20 years meaning that this issue must be decided on a case-by-case basis. Some types of inventions cannot be protected by a utility model. In some EU-Member States inventions referring to a method or procedure are explicitly excluded from this form of protection (e.g. Greece, Denmark, Germany, Finland, Italy, the Czech Republic and Spain). The most important disadvantage of utility models is the low degree of legal certainty, due to the fact that substantial requirements are not examined in the granting procedure. Thus, the holders of utility models are in greater danger of losing possible infringement or nullity disputes. Therefore, it can be useful where is possible (for example in Germany) to carry out a novelty search before applying for a utility model in order to minimize uncertainties about the state of the art. An additional disadvantage is the lack of harmonization in Europe and the lack of a common granting procedure that allows utility models protection to be applied for in more than one state, like under the European Patent system.

7.3 TRADEMARKS

A trade mark is any sign that distinguishes the goods and services of one trader from those of another. In most countries, a trade mark must meet two requirements in order to be validly registered: it must be distinctive and capable of graphic representation. A trade mark can include, for example, words, logos, letters, numbers, colours, pictures, three-dimensional forms, signs perceived by the senses (sound, smell, taste and touch) or a combination of these, provided it overcomes the graphic representation requirement. Registering a trade mark provides the proprietor with the exclusive right to use it and with effective protection against copying, imitation, misappropriation, forgery or use of its reputation. In most countries, trade mark registration lasts 10 years, renewable indefinitely for 10-year periods.

The right to a trade mark may be obtained in two ways:

By use:

The right to a trade mark belongs to whoever uses that specific sign for the first time in an effective way to designate goods or services on the market. Some legal systems provide for the protection of non-registered trade marks if they have a certain popularity in the market and are recognised by consumers.

By registration:

The exclusive right to a trade mark is obtained by registering the sign at a trade mark office. Through registration, the holder obtains the right to exclusive use of the mark, as well as the right to forbid third parties to use identical or similar signs. The protection granted by the registration of a mark is broader than the protection conferred by its simple use. Hence, the enforcement options associated with a trade mark are more effective because it is easier to prove who the holder is.

7.3.1 THE ROLE OF TRADEMARKS

According to the World Intellectual Property Organization (WIPO), a trademark is defined as a “distinctive sign, which identifies certain goods or services as those provided by a specific person or enterprise ” (WIPO, 2004). The two objectives of protection and dissemination built into this definition are practically indistinguishable. Like patents, a trademark affords the owner legal protection by granting the exclusive right to use it to identify goods or services, or to license its use to another entity in

return for payment. Rights are granted at the national level but, unlike patents and copyrights, once trademarks are registered they can be renewed indefinitely on payment of additional fees. The common expectation in trademark regimes is that a registered trademark is used, otherwise it may be cancelled and applied for by another company after a period of grace. Its maintenance by economic agents can thus be seen as indicating the exercise of regular business activities; an unused trademark is implicitly regarded by IPR law as a barrier to economic activity. Trademarks are an IPR issued by an authorised national government agency following an examination process that is dependent on legal criteria and on a mix of limited human and technical resources administered by that agency. Once an application has been filed, examiners search available databases to detect any other marks in use that may come into conflict with that of the applicant. Whereas patents are granted to inventions on the basis of non-obviousness, inventiveness in the face of prior art and the potential for industrial application, a commercial sign, on the other hand, may be denied registration, but only if judged deceptive to consumers (e.g. if it can be confused with other marks, if it contains a misleading description of the character or quality of the goods or services, etc.), if it is deemed contrary to morality or if it denotes symbols reserved for the use of the state or public organisations. A successfully registered trademark is recognisable by having one of these two symbols attached: “®” or “TM”. The lag between the trademark filing and its formal registration is much shorter than that for patents. For instance, while it normally takes up to a year to register a CTM, it can often take over 5 years to obtain a patent from the European Patent Office.

Trademarks are the outcome of establishing recognisable designations and symbols for goods and services, as well as firms’ identities. They play a crucial role in the process of marketing innovations, being instrumental in differentiating the attributes of goods and services in the marketplace. These characteristics make trademarks a potential indicator of product innovation and sectoral change. Moreover, recent developments in the institutions for the international regulation of trademarks, as well as the increasing availability of digital databases, have increased the case for using trademark statistics as a new source of information in industrial and innovation studies. Trademarks are of interest for social science research for at least three reasons: they confer the exclusive right to use a brand, therefore enhancing

companies' ability to appropriate the economic returns on new and existing products; they are an important aspect of contemporary culture world-wide and they constitute a source of qualitative and quantitative information on socio-economic activities.

As an intellectual property right (IPR), trademarks are designed to differentiate certain products from those provided by other firms. In this context, the filing of new trademarks by economic actors partially reflects the introduction of new offerings aimed at persuading potential buyers that the range of their problems is not being solved by the supply of solutions currently available in the market. In this way, since companies have to pay fees to register and renew their rights in national and international offices, the effort involved in filing for a new brand name or logo reveals an economic decision that is worth investigating. Furthermore, given the growing demand from governments, firms and academics for more reliable information on innovation, we find here an opportunity to test trademarks as a complementary indicator to the more traditional measures of innovative activity, namely R&D expenditure and patents. Trademarks are used by a wider set of business firms, capturing change in service activities as well as in small and medium-sized enterprises (SMEs).

MOTIVATIONS FOR OBTAIN A TRADEMARK

- Building inelasticity around the product and achieving a premium pricing (differentiation, line extensions).
- Improving the conditions for appropriating the returns on innovation whenever other means are not effective.
- Extending the protection conferred by other IPRs after their expiry date (namely patents).
- Opening up opportunities for entering new product segments or entirely new lines of business (brand-stretching or diversification).
- Penetrating new geographical markets (geographical market diversification).
- Signalling changes in strategy or changes in corporate identity (internal and external marketing).
- Entering the market for trademarks (licensing).
- Saving on promotion expenditures (building loyalty).
- Achieving greater bargaining power against suppliers (supply chain coordination)

7.3.2 TRADEMARKS AND INNOVATION

The use of trademarks as a complementary indicator in innovation studies can be justified on both analytical and empirical grounds. Research into innovation has shown that firms use different strategies to protect their innovations. Large-scale industrial surveys carried out over recent decades (Levin et al., 1987; Cohen et al., 1996, 2000) have made it clear that firms improve the conditions for appropriating the returns on their innovations through different channels, including lead time and moving quickly down the learning curve, secrecy, exploiting their reputation and implementing sales and services efforts, or using patents. The ranking of these strategies varies according to the sector of the firm, as well as between product and process innovations. A common finding of these studies is that, as a means of appropriating innovation returns, patents tend to rank lower in these hierarchies, with the exception of a few industries in which they play a strategic role. In contrast, marketing activities and assets tend to play a wider and more significant role.

CIS 3 results

	Trademark use (%)		Patent use (%)	
	Innovative Firms	Non-innovative firms	Innovative firms	Non-innovative firms
Belgium	22	6	15	1
Denmark	25	8	14	1
Germany	21	6	21	2
Greece	23	6	6	0
Spain	15	4	12	2
France	34	9	27	5
Ireland	–	–	–	–
Italy	17	6	13	2
Luxembourg	19	10	8	1
The Netherlands	15	7	14	1
Austria	21	8	18	1
Portugal	18	7	6	3
Finland	25	5	20	2
Sweden	41	15	28	5
United Kingdom	37	14	14	1
Iceland	–	–	5	0
Norway	27	8	18	1

Source: European Commission (2004)

The results from the Third Community Innovation Survey (CIS 3) presents the proportion of firms, for the different EU countries, Iceland and Norway, which made use of patents or trademarks to protect their products. The results for each protection method are presented according to the innovative character of the responding firms. The CIS results indicate that the use of trademarks is higher than that of patents, which is not surprising. But what is relevant for our argument is that innovative firms consistently use more trademarks and patents. The differences in the use of patents and trademarks between innovative and non-innovative firms are evident. The fact that non-innovative firms report considerably less trademark use than innovative firms is reassuring news in relation to the value of trademarks as an innovation indicator.

7.3.3 THE COMMUNITY TRADEMARK SYSTEM (CTM)

As of 1 April 1996 the European Union implemented a trademark registration system that enables trademark owners to file a single CTM application for protection in all EU Member States. On 1 May 2004 the CTM was automatically extended to coverage in the ten new EU Member States. The CTM registration system does not replace national or international trademark rights but co-exists with them. The system is opposition based, which means that the Community Trademark Office examines marks for inherent registrability but not for conflicting prior rights. Once the application is approved, it is advertised for opposition. Oppositions may be brought on the basis of earlier priority rights on the CTM or National registries. Due to the unitary character of the CTM it has equal effect throughout the Community. Consequently, it can only be registered, transferred, surrendered or revoked with respect to the entire Community. Thus, if an opposition is successful in one Member State the CTM registration is lost in all 25 countries. However, applications that are opposed successfully, or otherwise refused, may be converted into national applications retaining the original priority date.

7.3.4 ADVANTAGES AND DISADVANTAGES

Given the experience with using patents as an output indicator of technological activities (e.g. Griliches, 1990), we will take advantage of this accumulated knowledge and techniques to explore the potential of trademark data as an indicator of product innovation. As with patents, trademark statistics have the advantage of a reasonably unambiguous legal definition, being collected and classified by (the same) specialised institutions in accordance with international agreements, and long time series are also available. The basic classification system of trademarks follows from the 1957 Nice Agreement Concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks. The Nice classification system distinguishes between goods and services. It is regularly revised and is now in its 8th edition, which has been in force since January 1, 2002; it has 34 classes of manufactured goods and 11 classes of services (three new classes of services were added in the last edition). One difficulty, however, is that these classes do not have a direct connection with sectoral nomenclatures such as NACE (Statistical Classification of Economic Activities in the European Community). For the purpose of the analysis of innovation and industrial dynamics, the greatest limitation of this classification is that the different classes are highly aggregated. Another characteristic of trademark data is that a given trademark for a word or symbol can be requested for either just one or several or even all Nice classes. This means that the number of counts in all classes will be much higher than the total number of trademarks applied for, even if it is possible to identify such multiple classifications. This is a limitation for crosssectoral analysis, and it is different in this respect from other output indicators. Furthermore, trademark applications are not classified according to the main product line or productive sector of the applicant company. Conversely, a given product or supplier can also be protected by more than one trademark.

A further limitation is that there are many unregistered brands in use in the market place, for instance many small firms such as shops, restaurants and the like work under the official firm designation and do not register it as a brand name. This problem is similar to the one that is found in patents: not all inventions can be patented and not all patentable inventions are patented. In the case of trademarks, brands take the place of inventions. Unlike inventions, however, a given brand might be protected by many trademarks (words, logos, 3D mark, sound, etc.) whereas a

novel device is supposed to be protected by just one patent. The effect of this on different companies, product categories, industries and countries is not yet fully clear, and other limitations are possibly not yet identified. One lesson to be drawn from patent analysis is that decisions to file an IPR vary among different companies, technologies, industries and countries. Likewise, there is no reason why decisions to trademark should not vary as well. On the positive side, the large and increasing numbers of trademarks allow us to remain confident that many aspects of corporate commercial activities can be revealed through this indicator. Because they are cheaper and do not require a technological breakthrough, a much wider range of SMEs are likely to be involved in applying for trademark rights compared to patent rights. The nature of the products offered by service companies also make them more appropriate for trademark protection than for patent protection. This allows us to cover a wide range of traded products and a broad spectrum of the industrial structure.

7.4 INDUSTRIAL DESIGNS

This industrial property right has been defined by the Council Regulation on Community Designs as the appearance of the whole or a part of a product resulting from the features of, in particular, the lines, colours, shape, texture and/or materials of the product itself and/or its ornamentation. It can be deduced from this definition that the design represents the aesthetic or ornamental character of a product. Technical features or functional characteristics do not fall under the design. Its main function is to attract consumers attention by making the product more attractive.

Behind a design there is an idea. This idea cannot be protected as such. The materialisation of an idea can benefit from protection. In order to be protected by design, this materialisation will have to be revealed by the colours, shape and material, among other elements, employed in the elaboration of the design. These elements are important insofar as they help the design to fulfil its function, appealing to the consumer in such a way that he decides to buy the product. But the design will have to fulfil certain criteria as set out below, in order to be recognised and protected.

The design must be new, original or enjoy an individual character. To be new, the design must have been made public before the date of the registration application. By original, we understand that the design must be it's author's work and not the imitation of another's work. It's individual character will be based on the consumer's

impression when he sees the product. If his impression is different from his previous attitude concerning another product, the individual character will be satisfied. Some countries consider the product's useful function as another criterion. The product must be useful, it must have a function for which it has been created.

The community design, which is valid for the whole territory of the European Union, must fulfil the criteria of novelty and individual character in order to be protected, according to the Council Regulation.

7.4.1 WAYS OF PROTECTION

For the design to enjoy legal protection as an industrial design, the creator must apply to the competent body for the registration of the design, although there are some laws that provide for the protection of designs without previous registration (as is the case of the unregistered design included in the Community Regulation as well as in the United Kingdom's legislation). A design may be protected if it is new , i.e., provided the form of the product is not already known before protection is applied for. Apart from being new, according to most national laws on industrial designs, the design must be original or have an individual character . Moreover, in some countries, such as Australia, Benelux, Canada, the United States of America, Brazil or Mexico, the product to which the design is applied must have a useful function .

Like any other industrial property right, design protection is territorial in nature, i.e., the geographic scope of design protection may be national, international or for the whole of the European Community, depending on the State or States where protection is applied for.

Thus, from the geographic point of view, a design may have different levels of protection:

a. National:

Protection is granted for each country individually in accordance with its national laws. The exclusive right obtained can only be asserted within national territory.

In the European Union, Directive 98/71/EC has compelled Member States to harmonise their national laws on industrial designs on certain vital points. The deadline set for member states to adopt the provisions established by the aforementioned Directive expired on 28th October 2001.

b. Community:

Registered Community design. Protection granted by the OHIM in compliance with Regulation EC 6/2002, and Regulation EC 2245/2002. The legal protection granted by the Community design covers the whole territory of the European Union.

c. International:

Protection granted by the WIPO in compliance with The Hague Agreement concerning the International Deposit of Industrial Designs. The main advantage is the possibility of having a registration which is valid in several countries, i.e., to freely choose the countries in which the industrial design registration is to be asserted. This protection is valid in the signatory countries of the Treaty.

7.4.2 COMMUNITY DESIGN

The term "Community design" includes bi- and three-dimensional industrial designs. Community design means the appearance of the whole or part of a product, which is derived from its features, especially the lines, outlines, colours, shape, texture and/or materials of the product in itself and/or its ornamentation.

The concept of product covers any industrial or handmade article, specifically excluding computer programmes. One of the main qualities of the Community design is its unitary character, i.e., the design has a uniform effect throughout the entire territory of the European Union. Therefore, it may only be registered, transferred, surrendered, declared expired or invalid, or have its use prohibited, for the Community as a whole. The protection period of the Community design varies depending on the type of design concerned:

The UNregistered Community design will be protected for 3 years from the date the design has been made public for the first time in the European Union.

The protection of the Registered Community design will have a duration of 5 years from the date of filing of the registration application. Likewise, a renewal may be requested for one or several subsequent periods of 5 years, up to a maximum of 25 years.

7.4.3 TYPES OF COMMUNITY DESIGNS

Community Legislation distinguishes two different types of Community design:

1. UNregistered Community design:

The design is made public within the European Union. It is considered public when it has been published, exhibited, used in trade or disclosed in any way in commercial trade. Protection is obtained automatically, without any formality requirements. This sort of design constitutes a vital instrument of protection for the industries which normally renew their product collections every season, such as the footwear, textile or jewellery industry or the toy or furniture industry.

2. Registered Community design:

Condition held by the design which is registered at the OHIM in compliance with the registration procedure provided in Regulation EC 6/2002, and Regulation EC 2245/2002. In order for this sort of design to be protected, an application must be filed and registration granted. The exclusive right conferred by design registration is much stronger and more extensive than the protection provided for the unregistered design.

7.4.4 INDUSTRIAL DESIGNS FEES

The actual costs will vary significantly from country to country. However, it is important to bear in mind the different types of costs that may be involved in the process:

There will be registration fees to be paid to the national or regional IP office. The fees will generally vary depending on the number of designs to be registered and the number of countries in which registration is being sought. By way of example, an application for a single Community Design in the countries of the European Union costs 350 Euros. This amount would rise to 1,925 Euros if the application contained 10 designs. Details on the exact fees should be obtained from your IP agent or from the IP offices concerned. There will also be costs associated with the hiring of the services of an IP agent to assist you in the registration process, if you choose to rely on expert advice to file your application.

7.4.5 ADVANTAGES AND DISADVANTAGES

An industrial design adds value to a product, making it more attractive and eye-catching to customers and can even become the main reason for buying the product. Protecting valuable designs is therefore usually a fundamental part of any designer or manufacturer's commercial strategy. When protecting an industrial design by registering it at a national or regional industrial property (IP) office, the holder obtains the exclusive right to prevent its unauthorised reproduction or imitation by any third party. This practice is business logic, as it improves a company's competitiveness and tends to create additional revenue in one or several of the ways described below.

When a design is registered, the right to prevent its reproduction or imitation by the competition is acquired, strengthening the company's competitive position.

Registering a valuable design contributes to better returns from capital invested in creating and marketing the product, leading to higher profits. Industrial designs are business assets that can increase the commercial value of a company and its products. The more successful a design is, the greater its commercial value to the company.

A protected design can also be assigned (or sold) to others by granting a license and receiving an agreed payment, which serves as a way of accessing markets that might otherwise be unapproachable. Registering industrial designs encourages loyal competition and honest commercial practice, which in turn promotes the production of a wide diversity of products that are attractive for their form. On the other hand the owner of unregistered designs is unable to prevent unauthorized copying or limitation of his or her design by third parties, and also unprotection of industrial designs discourages unfair competition & dishonest trade practices.

7.5 COPYRIGHT

Of all the tool of Intellectual Property Rights, Copyright and the Related Rights cover protection for the broadest range of innovative works. It provides a framework for the protection of creative works that are expressions fixed in any medium. Copyright by its very nature interfaces with the publishing, photography, computer generated works, entertainment including films, drama, architectural, works of artistic craftsmanship, audio recordings, dance forms, educational, transmission / broadcasting, art including industrial drawing, sculpture, painting, lectures etc. Creative expressions are as old as human societies and hence this field of IPR also gets organically linked to cultural dynamics of societies. There is thus copyright of the creators in literary, dramatic, musical and artistic works and neighbouring rights or related rights for those who produce sound recordings, films, broadcasts, cablecasts and published editions. Copyright, neighbouring and related rights is therefore of immense significance to all sectors including the SMEs involved in traditional businesses and e-businesses of creative arts, crafts, technologies. Copyright as a form of IPR has been most strongly influenced by the development of technologies related to communication, reproduction and evolution of the medium for fixing of works. The law has had to keep pace with technology (though with some phase lag) and has had to make several adjustments in its scope, definitions, nature and extent of rights, features of enforcement etc.

In order to enjoy copyright protection, a work needs to fulfil two conditions regarding its form of expression and originality.

- Form of expression

By form of expression, we understand materialization, whatever may be the mode or form of expression. It could be a piece of choreography, a book, a computer program, and so on. Copyright never protects ideas as such. In an abstract way, ideas form part of thoughts. As far as they have not been materialized into a certain form, copyright does not protect them. The initial stimulus of a potential later work is not protected. Once this idea is made perceptible to the senses, this concretization may receive protection. For instance, the idea of painting a tree or a story for a book is not protected. Therefore, if somebody steals the idea, no copyright infringement occurs.

However, if a person takes a picture of a painting, and reproduces it for commercialization without the consent of the author, it will be considered an infringement.

- Originality

The originality concept has not been harmonized in Europe, except for database and software protection. In continental countries, a work is original if it is marked by the personality of its creator. This supposes that the creator has played a decisive role in determining the form of the work. On the contrary, in the United Kingdom the concept of originality is more linked to a special skill or labour. The originality does not imply the protection of the idea as such. Two persons can have the same idea and even if they represent it in the same way, their works could be protected as long as they reflect each one's personality. In this case, we must point out that both authors must have created their works independently one from another. For example, two authors paint a landscape with a big tree on a green hill with a blue sky. Even if they have painted the same landscape, both will receive copyright protection because it is not the idea of painting a landscape that is protected, but its materialization. Two persons can arrive to express themselves in the same way, but this statement does not lead to the conclusion that they will not be protected because it is the materialization of the idea, which is indeed protected, and not the idea of painting this landscape.

7.5.1 RIGHTS GRANTED WITH COPYRIGHT

Copyright grants two kinds of rights: economic rights and moral rights

Economic rights

Economic rights aim to enable the author to gain some revenue from the exploitation of his work. The author has, among others, the exclusive right to reproduce and communicate his work to the public. Reproduction rights allow the author to reproduce, in whole or in part, his work, on whatever medium and in any form. Any reproduction of a copyrighted work requires the prior consent of its author. The right to communicate the work to the public covers any direct communication of the work to the public, without any material embodiment (concert, television, webcasting...). The prior consent of the author is also required. In the EU and other systems,

economic rights expire 70 years after the death of the author. Economic rights may be transferred. Economic rights may be transferred.

Moral rights

Moral rights aim to protect a creator's personality which is expressed through the work. The scope of these rights varies from one country to another. The author has a paternity right, which allows him to have his name on the work. The most important moral right, from a practical point of view, is the integrity right which enables the author to refuse any modification to the work which would be prejudicial to his legitimate interests, his honour or reputation. Moral rights do not have a harmonised term: in some countries (France, Poland, for instance), moral rights are perpetual, whereas in others, they expire at the same time as economic rights (e.g. German, Sweden). Moral rights cannot be transferred. The author remains, therefore, owner of moral rights forever.

7.5.2 INTERNATIONAL CONVENTIONS IN COPYRIGHT

Treaties in the field of Copyright and Neighbouring Rights

- Treaty Providing for the Protection of Copyright
- Berne Convention for the Protection Literary and Artistic Works (1886)
- WIPO Copyright Treaty (WCT) (1996)
- WIPO Performances and Phonograms Treaty (WPPT) (1996)

Treaties providing for the protection of Neighbouring Rights

- Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations (1961)
- Geneva Convention for the Protection of Producers of Phonograms Against Unauthorized Duplication of Their Phonograms (1971)
- Brussels Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite (1974)
- Documents of the Diplomatic Conference on Certain Copyright and Neighbouring Rights Questions (Geneva, December 2 to 20, 1996)
- WIPO Copyright Treaty (1996)
- WIPO Performances and Phonograms Treaty (1996)

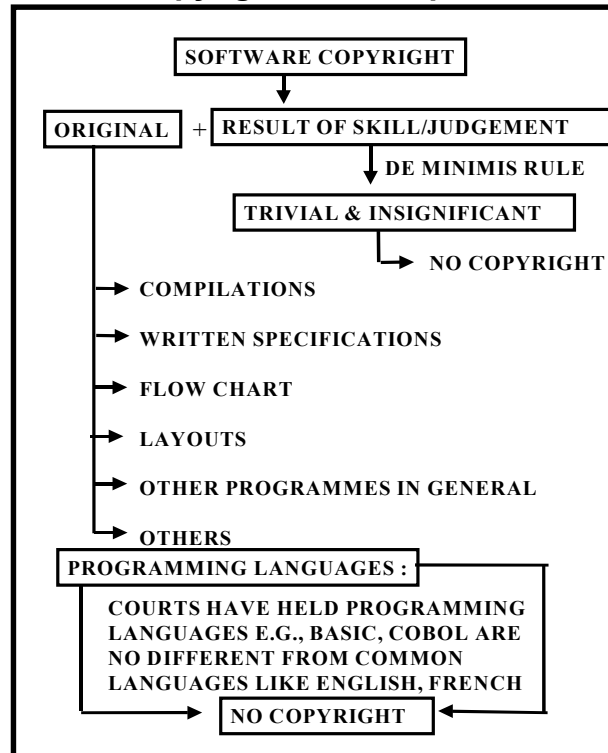
7.5.3 THE EFFECT OF BERNE CONVENTION

The Berne Convention protects the rights of authors in their literary, dramatic, musical and artistic works. As per the convention, each Member must follow the principle of National Treatment i.e. where the country or origin is a Berne State, other members must accord to the work the same treatment as they offer to their own nationals. By this convention, the rights of an author as a result of copyright in one country are recognized in another member state. One therefore does not have to register copyright separately in various Member /states of the Berne Convention. The convention also requires each Member /States to apply national treatment in respect of the rights which it accords to performers, record producers and broadcasting organization. Advantage may therefore be taken of this convention by the SME sector as their copyright in their country of origin should be adequate to enforce the copyright to their works in any of the Berne Convention countries without having to separately register a copyright application in those countries

7.5.4 SOFTWARE AND COPYRIGHT

Historically software has been considered to be a subject matter that may be protected by copyright. It is obvious that any item protected by copyrights automatically comes under the ambit of the Berne Convention, and all statutory provisions under the copyright law become applicable to the software protected by copyright. One has to be very clear about the concepts of authorship and ownership of computer programs. The programmer or programmers are to be considered as joint authors of a work. If the work is created in the course of one's employment, then the first ownership goes to the employer in the absence of any contrary contractual agreement. If someone is specifically hired to develop the program then it is implied that the ownership is assigned to the one who commissioned the work. However one has to exercise considerable care as issues of prior knowledge, proprietary object codes from one's library may be used for the development of the program & the associated applications and hence the issue of authorship and ownership can get fairly murky under such circumstances. The general criteria for the protection of software using copyright are illustrated in Table1.

Table1. Copyright and Computer Software



Ref: “Intellectual Property Rights... Unleashing the Knowledge Economy”; P. Ganguli (Tata McGraw-Hill, India, 2001) .

7.5.5 ADVANTAGES AND DISADVANTAGES

Copyright is part of the family of intellectual property rights. It provides legal protection to creators of works so they can control the way their works may be exploited, and rewards those who invest in these creations. It is a tradable commodity and can be a major contributor to wealth. For the more developed nations, it is big business, especially now in the information revolution. However, copyright was designed to encourage the creation of ideas, and such creative works should contribute to the culture of a nation. On the other hand Rights owners are worried about misuse of their work, and obtaining a fair return on it. Once stored in a computer, works can be transferred unseen, and republished in some other format and rights owners will lose sales. There is also fear that uploading and downloading from the Internet will become the norm. The facilities for electro-copying are available, reasonably cheap and convenient, and some fear that because they exist, there are no barriers to their use. Authors also feel that their moral right of integrity could be violated by manipulating and adapting works in digital form.

8. ALTERNATIVE WAYS TO PROTECT INNOVATION

8.1 CONTRACTUAL PROTECTION. CONFIDENTIAL AGREEMENTS

Confidentiality agreements guarantee a person/organization that information that it is about to be made available to another person/organization, for example under a joint project, will not be revealed to third parties and will possibly be returned to it at the end of the project. This contract can take place in many different situations, such as in the contractual relation between the employer and his employee, two persons sharing a common project, a person who has an idea and looks for an enterprise to develop it.

8.1.1 IDENTIFYING THE PARTIES

The agreement has to make the parties which are bound by the confidentiality obligation clearly identifiable:

- Name of the person/organization that reveals information(owner or discloser)
- Name of the person/organization that receives information and is responsible for ensuring its confidentiality

When the parties are legal entities, the natural person who signs the contract on their behalf must have formal permission to do so according to the statutes of the organization. If a document gives a mandate to the signatory to represent the legal entity, this document may be annexed to the confidentiality agreement.

8.1.2 SUBJECT

It is necessary to describe the subject of the agreement, since this is a factor that determines the type of contract. The description of the subject matter can prevent the contract from being upgraded to another type of agreement, for example in the event of a dispute:

The aim of the confidentiality agreement is to put into place a legal framework organization the disclosure of information and to guarantee that the latter will not be communicated to third parties

8.1.3 DISCLOSED INFORMATION

In certain cases, information that will be the subject of a confidentiality obligation is not protected by intellectual property. In such a case, allowing the disclosure of non-patented inventions, ideas or concepts, to third parties would very often invalidate the owner's efforts to obtain such protection. It is necessary to be able to identify the information which is the subject of the confidentiality agreement. At least two hypothetical cases can arise:

- The information is completely related to a precise project (the description of an invention).
- The information will be revealed gradually in an extended collaboration between the parties.

8.1.4 USE OF INFORMATION

To enable parties to check the use that will be made of revealed information, it is important to determine these operating conditions in the agreement. The parties can define the uses which may be made of revealed information such as:

- Use for research purpose
- The technical or commercial assessment of an invention or a product

These uses have to be clearly defined to avoid any problem of interpretation. Meetings can be organised regularly between the parties to check the use made of revealed information and to measure the progress carried out in research or the industrialisation/marketing progress, according to the nature of the project.

8.1.5 TERM OF THE AGREEMENT

The term of the confidentiality agreement has to be mentioned either in the form of a date (e.g. on 31 December 2010), a period of time (e.g. 10 years from the conclusion of the confidentiality agreement) or a time limit (e.g. 5 years after whenever the project concerned ends). The term of the agreement should not be clearly excessive, for example, compared to the end date, if one has been fixed of the collaboration project between the parties. The parties may also wish to specify a term before which

all the confidential documents provided to the recipient will have to be destroyed or returned to the owner.

8.2 TRADE SECRETS

As enterprises increasingly rely on intangible or knowledge-based assets rather than tangible or physical ones for creating and maintaining their competitiveness in the marketplace, their ability to create, deploy and strategically manage such proprietary assets is becoming a crucial factor in business success. Trade secrets are widely used by SMEs. In fact, many SMEs rely almost exclusively on trade secrets for the protection of their IP (although in many cases they may not even be aware that trade secrets are legally protected). It is important, therefore, to make sure that enterprises take all necessary measures to protect their trade secrets effectively. This includes:

- Firstly, considering whether the secret is patentable and, if so, whether it would not be better protected by a patent.
- Secondly, making sure that a limited number of people know the secret and that all those who do are well aware that it is confidential information.
- Thirdly, including confidentiality agreements within employees' contracts. Under the law of many countries, however, employees owe confidentiality to their employer even without such agreements. The duty to maintain confidentiality on the employer's secrets generally remains, at least for a certain period of time, even after the employee has left the employment.
- Fourthly, signing confidentiality agreements with business partners whenever disclosing confidential information.

Today's business environment has increased the importance of trade secret protection and the development and implementation of information protection practices. These must address the risks associated with a global marketplace, rapid advances in technology and telecommunications, a mobile, highly-skilled work force, and network strategic business relationships, including extensive outsourcing. Under these circumstances trade secrets are rapidly becoming, in some cases, a choice form of intellectual property protection in the information economy. Machinery and mechanisms were the brainchildren of the Industrial Age and patent law was designed

to protect these. In the Information Age, trade secret protection is, in some cases, the most attractive, effective and readily available intellectual property right. While the information economy has made trade secrets more important, it has also made them more likely to be stolen. A more mobile workforce, the increased use of contractors and consultants, and increased infrastructure outsourcing all provide opportunities for trade secret information to leave the company's control. Information technology itself contributes to the mobility of information. Increasingly, information is stored in copied computer files, and internet connectivity and high-density media such as CD-ROMs make these files easy to transport. A disgruntled employee can literally walk out the door with the company in his pocket. Adequate and effective creation, protection, use and management of trade secrets is the starting point on the road to successfully developing and managing an intellectual property strategy and integrating it into the general business strategy of an enterprise.

8.2.1 HOW TRADE SECRETS ARE PROTECTED

Contrary to patents, trade secrets are protected without registration, trade secrets are protected without any procedural formalities. Consequently, a trade secret can be protected for an unlimited period of time. Moreover, it does not/may not cost anything. For these reasons, the protection of trade secrets may appear to be particularly attractive for Small and Medium - sized Enterprises (SMEs). Nevertheless, trade secret protection is limited. A trade secret holder is only protected from the unauthorized disclosure and use of the trade secret by others and from another person obtaining the trade secret by improper means. Indeed, it is illicit to acquire another's trade secret if one knows or has reason to know that the trade secret has been acquired by improper means. Improper means include theft, bribery, misrepresentation, breach or induced breach of a duty to maintain secrecy, or espionage by electronic or other means. Reverse engineering or independent derivations alone are not considered improper means.

8.2.2 TRADE SECRET PROTECTION IN EU

Depending on the legal system, the protection of trade secrets either forms part of the general concept of protection against unfair competition or is based on specific provisions or case law on the protection of confidential information. It should be pointed out that there was a noticeable movement towards increased trade secret protection in many countries of the world during the 1990's and a surprising uniformity in the treatment of trade secrets. Trade secret theft now constitutes a crime in many countries.

France: French law recognizes three types of trade secrets: manufacturing trade secrets (*secrets de fabrique*), know-how (*savoir-faire*) and confidential business information. French law provides for penal sanctions against theft of manufacturing trade secrets (Article L621-1 Code de la Propriété Intellectuelle and (Article L152-7 of the Code du Travail). Companies that are victims of manufacturing secret theft may also file a complaint before the civil courts. The same applies when the wrongful acts have not been committed by an employee but by third parties using fraudulent devices. In this case the complaint is to be filed on the basis of unfair competition pursuant to Article 1382 et seq of the French Civil Code. Injunctive relief, damages and third-party liability is available to the private litigant.

Germany: Germany provides strong protection for trade secrets. The new German Act against Unfair Competition (*Gesetz gegen den unlauteren Wettbewerb – UWG*) which came into force on 8 July, 2004, penalizes, in Chapter 4, betrayal of trade or industrial secrets (Section 17 UWG), betrayal of documents or instructions of a technical nature (Section 18 UWG), and seeking to induce another person to betrayal (Section 19 UWG). Private litigants can also obtain injunctive relief and damages (§§ 823, 1004 *Bürgerliches Gesetzbuch – BGB*). There is third-party liability.

Italy: Italy provides strong protection for trade secrets. Trade secret theft is a crime (Article 513, 623 *Codice Penale*). The full panoply of remedies for trade secret misappropriation are available (Article 2598(3), 2600 *Codice Civile*). There is a third-party liability. The new Italian Code of Industrial Property (“Codice della proprietà industriale”), which consolidates all previous IP laws and which came into force on

March 19, 2005, provides legal protection for corporate secret information. The Code provides that anyone who acquires or receives corporate secret information shall be bound not to use or reveal the company information and the commercial or techno-industrial experience to third parties (Article 98 and 99).

Poland: Poland provides strong protection for trade secrets. The provisions of the Unfair Competition Law of April 16, 1993 as amended, cover disclosure, unfair acquisition and unfair use of trade secrets. The Law provides the injunction and other equitable remedies for the infringement of trade secrets, inter alia, damages and monetary relief (Article 18) and penal remedies in the form of a fine, restriction of liberty or imprisonment for up to two years (Article 23).

Spain: By enacting a new Criminal Code, effective as from 24 May 1996, the imposition of fines and imprisonment for various terms (max. 5 years) is provided for a number of new crimes relating to trade secrets including the taking of data in order to discover a secret, the divulgence of stolen trade secrets by the person stealing them, breach of nondisclosure agreements and divulgence of stolen trade secrets by a third party (Article 278 and 279). Under Law on Unfair Competition (Law 3/1991 of January 10, 1991) practices of unfair competition include the infringement of industrial and commercial secrets (Article 13). The legal actions envisaged in Article 18 may be instituted against such practices.

United Kingdom: The UK provides broad and effective protection for trade secrets. Search and seizure orders may be issued to protect trade secrets and preserve evidence. There exists the full panoply of remedies for a "breach of confidence" including injunctive relief, damages and third-party liability.

8.2.3 PHYSICAL RESTRICTIONS AND SECURITY IN THE ELECTRONIC ENVIRONMENT

A good policy provides that physical access to a trade secret document repository or to a manufacturing or research and development facility requires a security pass. A good way to block physical access to trade secret material is to separate this information from other non-proprietary information keeping it in a locked filing cabinet. Access to such information has to be limited to key personnel and should be

disclosed only on a need-to-know basis. Physical restrictions, especially regarding visitors and other outsiders, which limit access to organisation facilities and to areas containing valuable proprietary information, especially trade secrets, are essential.

The advent of the fully networked enterprise where intranets, extranets and the Internet are all used to gain competitive advantage has significantly increased the importance of integrating digital and information systems security measures into the security programme. Protective measures must include efforts to identify and safeguard digital intellectual assets inside the networked enterprise. However, given the speed and propagation of information, internal security measures must be supported by an external monitoring and surveillance function. Thus cybersecurity is expensive. Thus cybersecurity is expensive. For detailed information on and the installation of key and encrypted computer data accesses as well as antivirus software, so-called "red team attacks" and the protection of e-mail communication, IT professionals should be consulted.

8.2.4 ADVANTAGES AND DISADVANTAGES

Protecting your company's business trade secrets is a vital step to keeping the advantage your company holds over its competitors. Owners of a valid trade secret have the right to prevent others from using their valuable information and in some cases, to collect money damages for illegal use. For this reason, it is important to recognize the types of information in your business that constitute trade secrets and what steps your company should take to protect them. A trade secret is any type of information used in your business that is not generally known to the public. They give your company an advantage over its competitors by virtue of the fact that other companies do not use or know of this information. An important factor to consider when determining the status of company information as a trade secret is whether or not the information is actually kept secret. In essence, the information must be protected such that, except by the use of improper or illegal means, a competitor would have great difficulty acquiring it. If your company itself does not take basic steps to protect its secrets, courts will later refuse to offer the company protection under the law when competitors begin to use this valuable information.

It has to be kept in mind, however, that trade secret protection is generally limited and therefore weaker than any patent or utility model protection, and that the

conditions for information to be considered a trade secret, and the scope of its protection may vary from country to country depending on the existing statutory mechanisms and case law. One should remember that courts may require very significant and possibly costly efforts to preserve secrecy. Patent and utility model protection, wherever possible, will provide much stronger protection.

8.3 EMPLOYEE RELATIONSHIPS

During the term of employment, employees must be made aware of their fiduciary duty to protect confidential information and be periodically warned about situations that may result in the inadvertent loss of trade secrets. An employee may have legitimate access to an employer's trade secret, and yet treat that information carelessly. Thus there must be processes in place for notifying employees of the company's trade secret rights and for protecting trade secrets as they are used in the company's business operations.

Training and awareness are without a doubt the most cost effective aspects of any protection programme. The keys to successful training are:

- Continuity, rather than a intensive introductory course that is then not followed up
- Accountability in order to manage its correct and effective functioning

Trade secrets cases bring to the fore the problem of accommodating competing policies in law: the right of a businessman to be protected against unfair competition stemming from the usurpation of his trade secrets and the right of the individual to the unhampered pursuit of the occupation and livelihood for which he is best suited. There are cogent socioeconomic arguments in favour of their position. Society as a whole greatly benefits from technological improvements. Without some means of post-employment protection to ensure that valuable developments or improvements belong exclusive to the employer, businessmen could not afford to subsidize research or improve current methods.

On the other hand, any form of post-employment restriction reduces the economic mobility of employees and limits their personal freedom to pursue a preferred

professional course. The employee's bargaining position is weakened because he is potentially shackled by the acquisition of alleged trade secrets, and thus paradoxically, he is restricted by his increased expertise from advancing further in the industry in which he is most productive. It should be clearly pointed out that general knowledge, skills and experience of a former employee cannot be restricted. Society as a whole suffers when competition is diminished by reducing the dissemination of ideas, processes and methods. Therefore, employees leaving the company should be reminded of their continuing responsibilities and of the need to return any information or documents that may contain trade secrets. They should also sign a separate report attesting to the return of all confidential information and trade secrets.

8.4 DEFENSIVE PUBLISHING

Defensive publishing, requires disclosing an enabling description of an innovation so that it enters the public domain and becomes prior art. Appropriately placed defensive publications can protect your freedom to practice *without* patenting. Well-placed defensive publications are valuable for two reasons: first, to support examiners in preventing overly broad competitive patents from issuing; and second, in cases where overly broad patents have issued, to be available and admissible years later to form the basis for an invalidity defense in a patent case. With patenting on the rise, patent offices have become overburdened. This has resulted in patents for technology that has already been in the public domain, sometimes for years because patent examiners have very limited time and resources to search prior art. As a result, many references that examiners could use to reject patent applications are never found. The first reaction some have when considering these issues is to defensively publish *everything*. However, defensive publications can be a double-edged sword. If placed in the right prior art database, they can be powerful weapons for destroying competitive patents. But, they can also be powerful weapons for destroying *your own* patents. So, to get started it's a good idea to properly disclose innovation that has *already* been placed in the public domain, but isn't in a location readily or easily utilized by patent examiners.

9. CONCLUSION

As innovation becomes an ever more central issue for the development of firms and world economies, so the need for improved assessments of innovative performance grows more urgent. In the past decade intellectual property rights (IPRs) - such as patents, trademarks, design registration and copyrights - have attracted considerable interest amongst both policymakers and analysts. The main reason for this growing interest is the underlying belief that in the knowledge-based economy IPRs are of great importance for innovation and competitiveness. EU policy initiatives towards encouraging greater use of IPRs are predicated on the belief that in the knowledge based economy such rights are of great importance for innovation and competitiveness, especially for SMEs.

Innovation by SMEs mainly consists in minor adaptations to existing products, innovation in designs, mode of service delivery or management and marketing practices. In many such sectors, SME innovations are mainly of an informal nature, without formal R&D investments, R&D laboratories or R&D personnel. In such cases, other intellectual property rights, such as utility models, industrial designs and trademarks may play a bigger role than patents in providing a competitive edge to SMEs. Studies from various OECD countries reveal that SMEs face a number of difficulties in using the IP system. This is often the result of their limited knowledge of the ins and outs of the IP system, lack of clarity about its relevance to their business strategy and competitiveness, and of their finding the system too complex and expensive to use. Available studies/research on the use of the IP system by SMEs are largely limited to the use of patents. This empirical evidence paints a picture in which the propensity to apply for patents is highly related to the size of the company.

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