



**TAMPERE UNIVERSITY OF TECHNOLOGY**  
*Degree Programme in Industrial  
Engineering and Management*

**MIIA SULA**

**DEFENSIVE METHODS AGAINST THIRD PARTY PATENTS**

Master of Science Thesis

Prof. Saku Mäkinen has been appointed as the examiner at the Council Meeting of the Faculty of Business and Technology Management on August 19, 2009.

# ABSTRACT

TAMPERE UNIVERSITY OF TECHNOLOGY

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Keywords: Intellectual property rights, patents, intellectual property strategies, patent litigation, litigation defensive methods.

The objective of this thesis is to study, not only intellectual property strategies and how they can contribute to the likelihood of getting into a patent dispute, but also the tools and methods available to defend against possibly harmful third party patents. Europe, United States and China have been selected as countries to be studied as they comprise the most litigious regions. Inside Europe, again the most litigious countries have been selected for the study, that is, France, Germany and the United Kingdom.

In the theoretical part of the study, the reader is introduced to the background of intellectual property, patents, patent disputes and management of the intellectual property. Intellectual property strategies are then described using a five level value hierarchy, including a defensive level, cost control level, profit center level, integrated level and visionary level. Each higher level in the pyramid represents the increasing demands placed upon the intellectual property function and each higher level also decreases the likelihood of getting into patent disputes. On the highest level, the company could, in theory, be relatively safe from any patent disputes from their competitors. But a new type of companies, called patent trolls, can still threaten companies who have mastered all five levels of the value hierarchy.

Next, the defensive methods in Europe, United States and China are identified, together with the prerequisites for using them. It can be seen that even if the patent law is somewhat harmonized in Europe, each country can still interpret it differently. Furthermore, even if some of the methods are called the same in different countries, they can still have unique differences in when and how they are applied. Based on the comparison, advantages and disadvantages of each method's applicability can be summarized. However, it should be noted that the use of any defensive method should be investigated case by case in order to determine its effect on the efficient resolution of a patent dispute.

# TIIVISTELMÄ

TAMPEREEN TEKNILLINEN YLIOPISTO

Tuotantotalouden koulutusohjelma

SULA, MIIA: Defensiiviset menetelmät kolmannen osapuolen patenteja vastaan

Diplomityö, 76 sivua, 17 liitettä (32 sivua)

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Avainsanat: Immateriaalioikeus, patenti, immateriaalioikeus strategia, patenttioikeudenkäynti, oikeudenkäynti puolustusmenetelmät.

Työn tavoitteena on tutkia, ei pelkästään immateriaalioikeusstrategioita ja kuinka ne voivat vaikuttaa todennäköisyyteen joutua patenttiriitoihin, vaan myös sitä, millaisia menetelmiä on käytettävissä puolustauduttaessa mahdollisesti vahingollisia kolmannen osapuolen patenteja vastaan. Eurooppa, Yhdysvallat ja Kiina on valittu tutkimuskohteiksi siitä syystä, että niissä käydään eniten patenttioikeudenkäyntejä. Euroopan sisältä on samasta syystä työhön valittu Ranska, Saksa ja Iso-Britannia.

Teoriaosuudessa lukijalle esitellään immateriaalioikeuden, patenttien, patenttiriitojen ja immateriaalioikeuden hallinnan perusteita. Immateriaalioikeusstrategioita esitellään käyttäen viisitasoista arvohierarkiaa, sisältäen defensiivisen tason, kustannusseuranta tason, tuottavuuskeskeinen tason, integroidun tason, sekä edelläkävijä tason. Jokainen korkeampi taso pyramidissa edustaa lisääntyneitä vaatimuksia immateriaalioikeuden yksikölle ja jokainen korkeampi taso myös vähentää todennäköisyyttä joutua patenttiriitaan. Korkeimmalla tasolla yritys voi, ainakin teoriassa, olla suhteellisen turvassa kilpailijoiden aktivoimilta patenttiriidoilta. Uudentyyppiset yritykset, joita kutsutaan patenttipeikoiksi, voivat silti olla uhka yrityksille, jotka hallitsevat kaikki viisi tasoa arvohierarkiassa.

Seuraavaksi identifioidaan defensiiviset menetelmät Euroopassa, Yhdysvalloissa ja Kiinassa, sekä perusedellytykset niiden käyttämiseen. Voidaan nähdä, että vaikka patenttilainsäädäntö onkin jokseenkin harmonisoitu Euroopassa, voi jokainen maa tulkita sitä eri tavoin. Tämän lisäksi, vaikka eräät esitetyt menetelmät ovat samannimisiä eri maissa, niissä voi silti olla suuria eroja sen suhteen, milloin ja miten niitä voi soveltaa. Kun eri menetelmiä verrataan keskenään, voidaan yhteenvetona esittää niiden käytettävyyden hyötyjä ja haittoja. On syytä kuitenkin huomioda, että jokaista defensiivistä menetelmää ja sen käyttökelpoisuutta patenttikiistojen tehokkaassa ratkaisemisessa, on syytä tutkia tapauskohtaisesti.

## PREFACE

About six years ago I was told, by a colleague, that I'm too much of a humanist. For the surprise of everyone (including myself) I started studies for my second Master's degree in order to become more of an engineer. Now, before I've even graduated, my colleagues think that I'm too much of an engineer.

This study provides me with an opportunity to make use of the most valuable assets of these extremes. The research subject calls for analysis of hard technical facts but also drawing conclusions based on contemplation, something the humanists are good at – or blamed for, if you ask the engineers. I trust this study helps me to navigate and find the right path in the middle ground of these worlds. Hopefully, it will also give my colleagues something else to talk about.

Anyway, I want to thank the teachers at the Tampere University of Technology for their passion to guide new students to the world of industrial management, technology strategy and telecommunication technology, and for making the completion of this study possible. Most importantly I want to thank Prof. Saku Mäkinen for guiding my thesis to the new and unexplored roads.

I also want to express my sincere gratitude to the people in Nokia Legal and Intellectual Property Rights department who have given their support to the work one way or another – especially Kukka Antila, Robert Gray, Anand Gupta, Terhi Nykänen, James Proffitt and Jessie Zhu. My special thanks go to Harri Valio for introducing me to the subject of the thesis and for guiding me all the way.

Last but not least I want to thank my friends and family for giving me the support to finish this challenge.

Legal disclaimer: It should be noted that this thesis represents the views of the author and does not necessarily represent the views of Nokia Corporation.

November 10, 2009 Tampere

Miia Sula

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## ABBREVIATIONS AND NOTATION

<b>Antitrust</b>	A defense argument to a patent infringement litigation. It is targeted against the plaintiff's actions which violate the antitrust laws.
<b>Assertion</b>	An accusation of patent infringement in a form of a letter advising the infringer of the existence of a patent and asking the infringer to consider taking a license or stop the selling and production of the infringing product.
<b>BAI</b>	Board of Appeals and Interferences having responsibility over interference actions in the United States among other things.
<b>Claims</b>	Collection of single-sentence statements that define the scope of the patent owner's rights.
<b>Compulsory license</b>	A nonconsensual patent license that a government compels a patent owner to grant to a third party.
<b>Declaratory judgement</b>	An accused infringer can initiate a legal action against a patentee, seeking a declaration from the court that the accused infringer does not infringe the patent is question.
<b>Defendant</b>	Person against whom an action or claim is brought in a court of law.
<b>Double patenting</b>	A prohibition against granting of more than one patent on a particular claimed invention in the same country.
<b>EPC</b>	European Patent Convention – A treaty allowing for the filing of a single patent application in order to obtain national patents in designated European countries, which have ratified the EPC.
<b>EPO</b>	European Patent Office – The central clearing house empowered to grant patents in all the countries that have signed the European Patent Convention. At grant, a single application results in a series of national patents.

<b>Equitable estoppel</b>	A defense argument to a patent infringement litigation. It is targeted against the plaintiff's misleading actions.
<b>Filing</b>	The submission of the patent application to the patent office. The invention must be kept confidential before first filing to prevent invalidation on the grounds that it already existed in the prior art, except in countries having a grace period.
<b>FPC</b>	Federal Patent Court, is the first instance to take care of patent litigations in Germany.
<b>Grace period</b>	The inventor does not lose the rights for a patent if a patent application is filed within a specific period of time after making the invention public.
<b>Inequitable conduct</b>	A defense argument to a patent infringement litigation. It is targeted against the plaintiff's improper acts in procuring a granted patent.
<b>Infringement</b>	The legal transgression that occurs when a third party utilizes the essential elements or characteristics of a patent invention.
<b>Injunction</b>	Equitable remedy, whereby a court can order a party to do or not do certain acts. I.e. to stop patent infringement.
<b>Interference</b>	Proceedings conducted in the USPTO to determine which of the two (or more) rival parties was the first to invent a particular claimed invention.
<b>Intervention</b>	A defence action allowing the accused infringer to intervene to open opposition proceedings after the opposition period has ended.
<b>Invalidate a patent</b>	See Revoke a patent.
<b>IP</b>	Intellectual Property – intangible products of the human mind.
<b>IPR</b>	Intellectual Property Right – a legal right to exclude others from using or benefiting from persons creativity

and inventions. Defined rights protected by means of patents, trademarks, utility models, design registrations, and copyrights.

<b>ITC</b>	International Trade Commission is a federal agency in the United States responsible for example on adjudication of cases involving imports that allegedly infringe intellectual property rights.
<b>Laches</b>	A defense argument to a patent infringement litigation. It is targeted against the plaintiff's unreasonable delay in filing a patent infringement action.
<b>License</b>	An agreement or covenant between a patentee and a licensee that the patentee will not sue the licensee for acts that would otherwise constitute infringement.
<b>Litigation</b>	An act or process of bringing a lawsuit.
<b>Nonobviousness</b>	A criteria of patentability. Even if the invention is novel, it must represent enough of a qualitative advance over prior art (nonobviousness) in order to qualify for patent protection.
<b>Novelty</b>	A criteria of patentability. The invention must be new compared to prior art.
<b>Opposition</b>	The process by which a third party can attempt to challenge the validity of a granted patent in order to have it revoked or reduced in scope.
<b>Patent</b>	A legal means of protecting a technical invention which confers a state monopoly lasting for up to 20 years. It must be applied to a genuinely novel product, process or apparatus which is also a truly inventive step forward.
<b>Patent office</b>	An official government office where patent applications are filed, prosecuted, opposed, appealed and granted. Most developed countries have their own national patent offices.

<b>Patentee</b>	Patent owner. A person, group or a company that has been granted a patent.
<b>Patent misuse</b>	A defense argument to a patent infringement litigation. It is targeted against the plaintiff's behaviour in improperly expanding the scope of its rights.
<b>Person skilled in the art</b>	A hypothetical person from whose perspective the nonobviousness criteria is judged.
<b>Plaintiff</b>	Person or company who brings an action in a court of law.
<b>Prior art</b>	Any form of communication in the public domain prior to first filing that refers to the technology embodied in an invention. The patent application will fail if the essential technology already exists in the prior art.
<b>Priority date</b>	The earliest date in which an individual patent application can depend on in order to circumvent prior art. Anything published or disclosed after this date is not regarded as prior art.
<b>Prior use</b>	A defense argument to a patent infringement litigation. It is targeted to the prior actions of the accused infringer to allow the utilization of their product or process as they were before the patent in question was filed.
<b>Revocation action</b>	Action to revoke a patent.
<b>Revoke a patent</b>	Granted patent is revoked if the grant is overruled. I.e. the rights relating to the patent are lost.
<b>Reexamination</b>	A defense method to resolve questions of patent validity via USPTO.
<b>Scope of protection</b>	The degree to which claims made in a patent can be extended to bring more potential products or processes into the range of the patent - thereby gaining additional commercial advantage.

<b>SIPO</b>	The State Intellectual Property Organization (SIPO) in China having administrative control of patents and utility models.
<b>Third party observations</b>	An action where any third party can submit material to the patent office which they think could effect the allowing of the patent.
<b>USPTO</b>	United States Patent and Trademark Office (USPTO) managing the examination of patent applications and the granting of patents.

# 1. INTRODUCTION

## 1.1. Background

Patents are a form of legal protection for intellectual property. By protecting their invention by patent, the patent holder has a right to prevent unauthorized use of their invention. If a third party makes, sells or offers to sell an infringing product, they may be subject to penalties such as injunctions and damages. This right to recover economic damages from infringers is an important component of a system for intellectual property protection. (Mueller 2006, p. 5-8; Sepetys & Cox 2009, p. 1)

The protection of intellectual property usually becomes more important when companies, nations or countries go through transition from manufacturing-based to knowledge-based production. In knowledge-based high technology industries, patent litigations are strategic actions used as means of improving competitive position in product and patent business. (Sepetys & Cox 2009, p. 1)

Patent infringement litigations are becoming more and more popular around the world. Not surprisingly, USA has been the leader in the number of patent litigations for a long time. However, in 2005, China surpassed USA as the world's most litigious country for patent infringement disputes (Bai et al 2007, p. 45). In 2005, intellectual property disputes filed with Chinese courts totaled 13 424, whereas only 10 905 cases were filed in the United States (Evalueserve, 2008). The amounts of damages awarded in China are also growing as can be seen in Table 1 (Sepetys & Cox 2009, p. 8), but they are still nowhere near the amounts awarded in USA.

Table 1. The highest damage award in China (in US Dollars)

Year	Highest damage awarded in China
2004	50 000 USD
2005	1 100 000 USD
2006	210 226 USD
2007	44 300 000 USD
2008	2 780 000 USD

The largest damage awarded in USA was 1.5 billion US Dollars by the Federal District Court in the Microsoft v. Alcatel-Lucent litigation. The damage award was later reversed by the Court of Appeals for the Federal Circuit, so it remains to be seen if the

award stands. But this clearly draws attention to the magnitude of economic impact of patent litigations. (Levko et al 2008, p. 1)

## **1.2. Research objective**

Increasing number of patent disputes all over the world and their economic impact has made it necessary for the companies of today to understand the patent environment they operate in. The aim of this thesis is to study not only intellectual property strategies and how they can contribute to the likelihood of getting into a patent dispute, but also the tools and methods available to defend against these possibly harmful third party patents. The emphasis here is to offer guidelines for defensive methods to be used against European, United States and Chinese patents, so that companies can make decisions to act upon risk of litigation. This means that conventional and non-conventional counter-strategies available for a defendant are identified and alternative methods are compared to each other. The research questions are:

1. What role does the company's intellectual property strategy play in relation to the likelihood of getting into a patent dispute?
2. What are the defensive methods available to be used against a third party patent, and what are the prerequisites for their use?
3. Compared to each other, what are the advantages and disadvantages of the defensive methods?

## **1.3. Research scope and limitations**

The first research question can be answered by examining intellectual capital and the framework for generating and extracting value from it. Once the framework has been defined, it can be brought to the level of intellectual property and applied there. This brings the reader closer to the actual implementation of the intellectual property strategies available. Once the different strategies are presented, it can be discussed how they can effect the likelihood of getting into a patent dispute.

The second research question can be tackled by identifying methods available specifically against European, United States and Chinese patents. Europe, United States and China have been selected as they comprise the most litigious regions. Different countries have different laws and methods which companies can utilize in order to protect against litigious companies and also the prerequisites can vary from country to country.

Literature relating to law usually bundles together methods available via court proceedings, whereas literature relating to intellectual property describes methods available via the national or regional patent offices. These methods have rarely been discussed together and comparison of the methods is even rarer. The third research question can be answered when the different methods are compared to each other and their advantages and disadvantages are identified.

Some of the discussed methods available for European patents are handled in a centralized way (i.e. in European Patent Office), whereas some of the methods are available only at a national level and each jurisdiction can have its own distinct approach to handle them. In that respect, only France, Germany, and United Kingdom have been analyzed. These three countries are again the most litigious within Europe, mainly because they comprise a big market. France, Germany and United Kingdom have been selected for other reasons as well, as they represent both common law and civil law countries (to be discussed on chapter 3.3) and due to their single/dual track systems (to be discussed more on chapter 3.4.4)

The emphasis of the research is on studying methods which can be used against the actual patent in question, but still some of the methods discussed can be used against the actions of the patentee. The currencies used in the studied cases are as follows: \$ stands for United States dollar, £ stands for Great Britain pound and € stands for European Union euro.

Methods which can arise from agreements and contracts with third parties, such as indemnifications received from suppliers and licensing contracts, are out of the scope of this study. Also the prime defense, a non-infringement argument, is not considered here, as it will depend on the patent and the accused infringing product or method. Same applies also to a design-around method, which will depend on the actual patent and accused product or method. Moreover, only literature written in English or Finnish has been analyzed, even though some of the used laws and rules defined in the studied countries have been originally written in other languages.

#### **1.4. Research approach and methodology**

It is essential to identify and explain the approach taken, as well as the methodology used in the research. Olkkonen (1994, p. 26) divides scientific research into positivism and hermeneutics. Positivism is also known as logical empirism as it emphasizes natural empirical facts and the utilization of logic (Turunen 1978, p. 21). According to Metsämuuronen (2005, p. 200) anything that is visible and can be identified concretely shall be taken as granted. So positivism tries to find out regularity, which defines reality abstractly (Turunen 1978, p. 49). Therefore a researcher is an objective observer and any other research conducted on the subject should result into identical conclusions

(Olkkonen 1994, p. 35). The main weakness in positivism research is that it easily ignores the qualitative side of the research subject (Turunen 1978, p. 52).

The qualitative research is based on hermeneutics, where the approach is to emphasize deeper understanding of the studied subject (Olkkonen 1994, p. 33). In hermeneutics the research subject is examined using subjective reasoning, therefore the conclusions will be based on the reasoning of the researcher having an effect on the repeatability (Olkkonen 1994, p. 35). Positivism promotes research topics which can be easily structured whereas hermeneutics presents topics which are difficult to analyze and where there is no theory to back it up (Olkkonen 1994, p. 37).

In the Finnish business economics Neilimo & Näsi (1980, p. 67) have divided the research methodology into four distinct approaches: conceptual, decision-oriented, nomothetical and action-oriented. Kasanen et al (1991, p. 257) have later supplemented the model with a fifth approach called the constructive approach. Figure 1 will present the five research approaches.

	<b>Theoretical</b>	<b>Empirical</b>
<b>Descriptive</b>	Conceptual approach	Nomothetical approach Action-oriented approach
<b>Normative</b>	Decision-oriented approach	Constructive approach

Figure 1. Five research approaches (Kasanen et al., 1991)

The approaches have been divided into two axes. The horizontal axis (Theoretical – Empirical) describes method used for gathering information. The vertical axis (Descriptive – Normative) presents the intention of the study. In descriptive study the intention is to describe an event by creating concepts, classifying and presenting correlations in order to understand it better. In normative study the intention is to find results which can be used as guidelines for developing or creating activities. (Olkkonen 1994, p. 44)

The borders between the five approaches are not exclusive or particularly clear. The division into positivism and hermeneutics is not quite straightforward between the categories. However, positivism in its most pure form is presented in the nomothetical approach, whereas the characteristics of a hermeneutic study can be identified in the action-oriented approach. By nature, the decision-oriented approach can be categorized as positivism when theoretical reasoning is based on logical deduction. Conceptual approach can be classified as either positivism or hermeneutics depending on whether the purpose is to understand the event or to make conclusions based on empirical information. (Olkkonen 1994, pp. 60-80)

The purpose of the conceptual approach is to produce conceptual systems. New systems are needed to describe and identify different types of event. The produced concepts can be entirely new or an improvement of an earlier concept. The used basis for conceptual approach is usually other concept systems, empirical information about the subject and relating theories. The method utilizes comparisons, analysis and synthesis. (Olkkonen 1994, pp. 65-66)

Decision-oriented approach aims to develop mainly methods based on mathematics, which can be utilized in decision making. The results are usually more or less mathematical or software models, which can be used to study the results of a decision or which gives a recommended decision. In this kind of research the model is usually created based on the known dependences of the variables. (Olkkonen 1994, p. 70)

Nomothetical approach aims to find dependencies between variables in the empirical material. The purpose is to find which variables are influencing the change of the research subject. The results can be used to plan activities or to forecast events. (Olkkonen 1994, pp. 67-68)

Action-oriented approach focuses on understanding the researched subject. It is typical that there are no neutral observations, which the researcher could measure. In fact, the researcher will base his/her interpretation on his/her own understanding of the subject matter. The research problem is usually more or less dynamic and it might be hard to divide it into smaller research sections. Material is empirical even though there is usually only a low number of events available for analysis. Verification of the results is challenging and on many occasions there simply is no verification for the conclusions. (Olkkonen 1994, pp. 72-74)

Constructive approach aims to solve problems with the help of models and plans and to verify the results in practice by developing a proposed decision. Creativity and innovation are the basis for forming a conclusion in the constructive approach. The value of the results is that it will increase the general knowledge and improve the theory

regarding the tools for solving that particular type of problems. (Olkkonen 1994, pp. 75-79)

Business economics research is rarely exclusively under only one type of research approach (Olkkonen 1994, p. 80). It is typical that the first part of the study applies primarily conceptual approach and the rest utilizes the hermeneutics approach (Olkkonen 1994, pp. 80-81). Next, the research problems, which were presented in chapter 1.2, are used to determine the most efficient approach to be used.

This research will utilize both positivism and hermeneutics viewpoints. First, the theory behind intellectual property, patents, patent disputes and intellectual property management will provide a starting point for this study. Literature survey forms the basis for the study and introduces the reader to the world of intellectual property.

Different defensive methods will be identified based on verified facts, and they can be categorized based on their operation. This approach is relatively near to the conceptual approach. Next, the methods are studied further to clarify the differences between them and to use those results to identify their advantages and disadvantages. Empirical data available will also be taken into account. So the last research question will be answered by using both action-oriented and constructive approaches. The advantages and disadvantages are all subjective evaluations and it will be hard to verify the results for that reason. On the other hand the comparison will definitely increase the general knowledge on how patent disputes can be handled. This is true also when studying the intellectual property strategy in relation to patent disputes. The strategy is defined using conceptual approach and when different strategies are compared to each other, the conclusion on the effect on the likelihood of patent disputes can be drawn. Again, researchers own subjective view is used to understand the relationship between the intellectual property strategy and patent dispute likelihood.

## **1.5. Research structure**

The structure of the study is presented in figure 2. The research questions are shown inside a circle and the theory behind them in rectangles. The arrows represent the logical reasoning on how the questions can be answered.

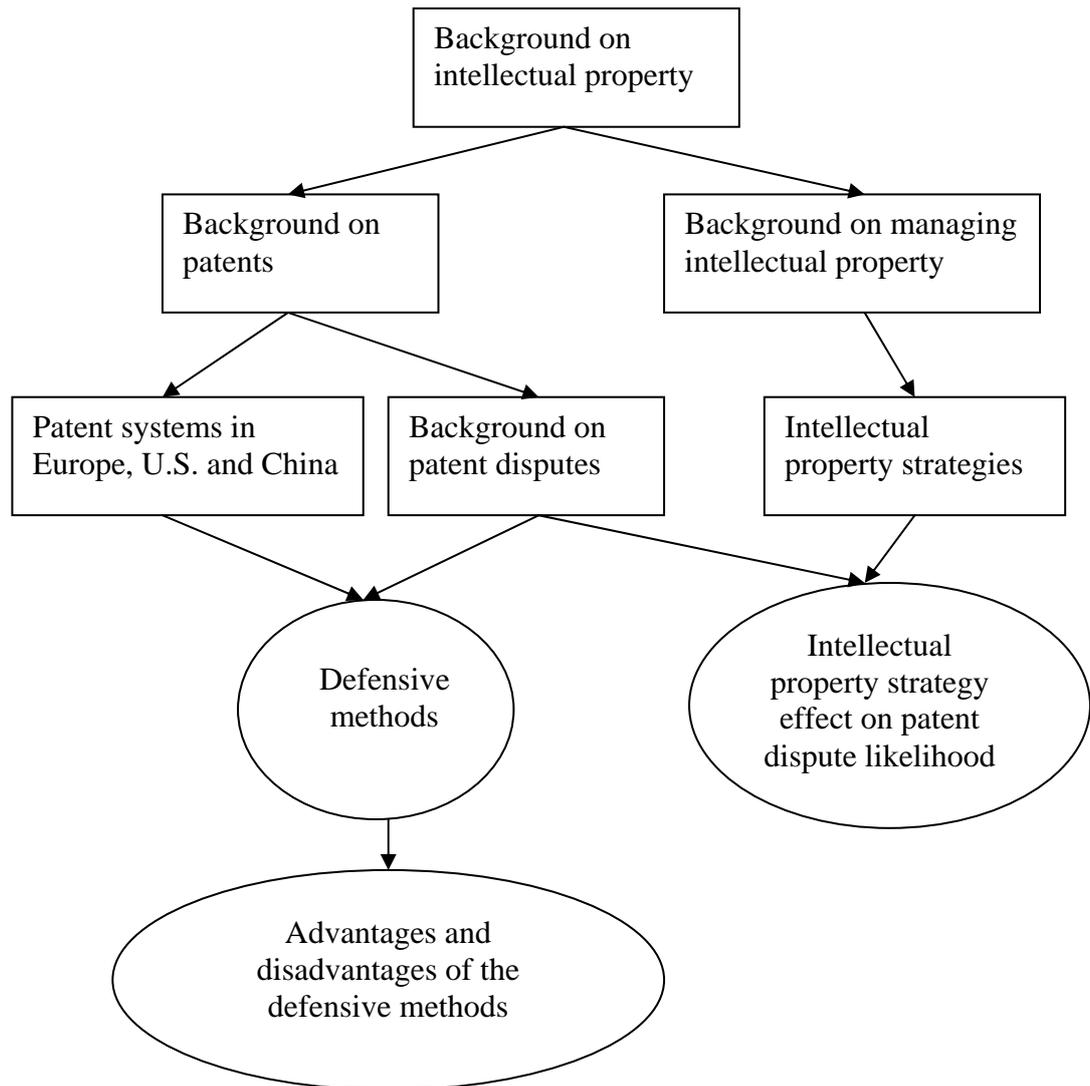


Figure 2. Structure of the study

Chapter 2 will lead the reader to the background of intellectual property and how to manage it. It will also dive into the details of patents and patent disputes. Chapter 3 will then define the intellectual property strategies and the logical thinking performed is used to identify the relation to the likelihood of patent disputes. Chapter 3 will also present the patent systems in Europe, United States and China before going into the details of the defensive methods available in each country. Each defensive method, together with the prerequisites for their use, is introduced to the reader.

Chapter 4 will compare the different methods to each other in order to find out their advantages and disadvantages. This is finally summarized into a table providing information about each defensive method, prerequisites for their use and the found advantages and disadvantages. The final chapter will also include the assessment of the study and recommendations for further study.

## 2. BACKGROUND ON INTELLECTUAL PROPERTY, PATENTS, AND PATENT DISPUTES

### 2.1. Background on intellectual property

The copying and reproduction of products has become much easier than it was previously. Therefore the laws created by many countries to protect inventions and creative work have become increasingly important to companies and individuals. The adopted patent laws give exclusive rights to the author, inventor or applicant but the rights are usually transferable. The main categories of intellectual property rights are presented in figure 3. Intellectual property protects also other rights such as trade secrets, know-how, domain names, appellations of origin, and indications of source. Intellectual properties owned by a company are often called intangible assets. (WIPO, 2005; Oesch & Pihlajamaa, 2008)

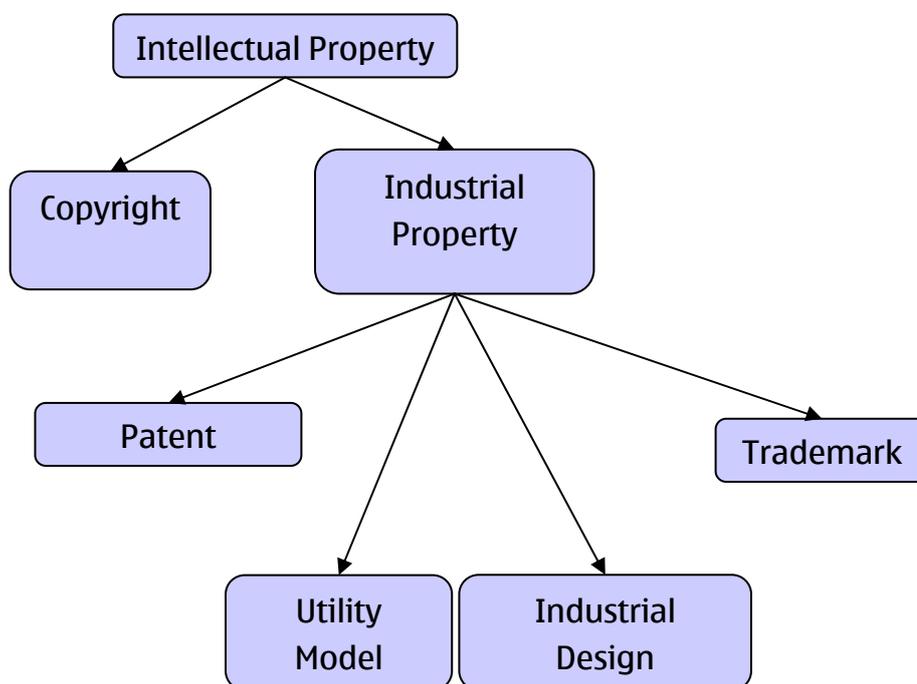


Figure 3. Intellectual Property

Copyright protects the rights of an author, performer, producer and broadcaster. Copyright is gained by the initial creation of a work and does not necessitate any

registration of the right or publicity of the work. A wide range of creative work is covered by copyright, such as musical, artistic work, computer programs, photographic work, literary, technical drawings and motion pictures. The purpose of the copyright is to protect only the physical or otherwise detectable layout of the work or performance, not the idea or the message. The term of the copyright is usually bounded to the author's lifetime. But typically the copyright is also effective for 50-70 years after the author's death. (WIPO, 2005; Charmasson 2004, p. 13)

Trademarks are distinctive signs, used to differentiate between identical or similar goods and services offered by different producers or services providers. The form of a trademark can vary widely. They can include, for example, letters, numbers, words, drawings, colors, sounds, fragrances, or any combination thereof. Trademarks can be established either on the basis of use or registration. (WIPO, 2005; Oesch & Pihlajamaa 2008, p. 401)

Industrial designs (also called design patents) protect ornamental or aesthetic aspects of products, they do not protect any technical aspects. The industrial design can consist of two- or three-dimensional features, such as shape, surface, patterns, and color. (WIPO, 2005; Oesch & Pihlajamaa 2008, p. 390)

Utility models, also known as "petty patents" are very similar to patents, but are a cheaper and quicker form of protection. They are usually applied to smaller inventions and the protection period is shorter than for a patent. This form of protection is available only in a few countries, e.g. in Finland, Germany and China. (WIPO, 2005; Oesch & Pihlajamaa 2008, p. 384)

This Master's Thesis concentrates specifically on patents and, therefore the background of patents is discussed in the next chapter.

## **2.2. Background on patents**

The patent system was created to prevent inventions from being copied. It was thought that inventors possessed a natural right to their inventions and those rights must be recognized by law. In order to obtain a patent, an inventor has to file an application to a patent office, such as the National Board of Patents and Registration in Finland. The application must describe the invention in words in such detail that an expert in the field can understand it. The patent application must also include claims which define the scope of protection for the patent. (Fitzsimmons 2002, p. 6-7; Durham 2004, p. 1-14)

An examiner at the patent office will examine the application since the patent application claims should pass three criteria before it can be granted. These criteria are novelty, nonobviousness and technical feasibility. When a blocking prior art is

discovered, it is informed to the applicant in interim decisions and the applicant can narrow the scope of the invention by amending the claims in such way that the criteria of novelty and nonobvious are fulfilled. (Oesch & Pihlajamaa, 2008)

A patent may then be granted if the invention is considered to be new and nonobvious to a person skilled in the art. Each patent normally has a limited lifetime of 20 years, although this can be sometimes extended if granting of the patent is delayed for some reason. Once the patent is granted, it can be licensed or used in litigation. (Fitzsimmons 2002, p. 6-7; Durham 2004, p. 1-14)

With few exceptions, a granted patent can only be utilized in the specific country where it has been granted. In order to obtain a reasonable coverage for an invention companies often apply for a patent for the invention in multiple countries. The priority date is the day on which a first patent application (e.g., the parent of a patent family) was filed in a national patent office. Later, when the patent owner files similar patent applications in other countries, the first filed priority application can be claimed and the latter applications receive the same effective filing date (priority date) as the first application. The effective filing date (priority date) can be claimed only during a 12-month period after the first filing. So a single invention can often result in a bunch of patents and patent applications in various countries. Such a bunch is called a patent family as they all share the same priority date (Oesch & Pihlajamaa 2008, p. 43)

A patent can also be applied for through some regional patent systems, one important of which is the system provided by the European Patent Convention (EPC). EPC allows patents to be centrally examined and granted in 39 European countries at the moment. National validation of a granted EPC patent is still needed in the individual designated states where the patent holder wants to have the invention protected. Patents obtained via EPC are called European patents and will be discussed more on chapter 3.2. (Charmasson 2004, p. 273-281; Oesch & Pihlajamaa 2008, p. 148-158)

Another important patent system is the Patent Cooperation Treaty (PCT) which provides an almost worldwide unified procedure for filing patent applications. However the PCT application does not provide a grant of the patent, but merely an international search on patentability, which the contracting states can utilize in case a national patent is applied later. The main advantage of filing a PCT application is to delay the filing of national or regional patents. As usually the deadline for filing any national or regional patents is 12 months from the date of filing the first application, but with a PCT application that deadline can be as much as 31 months from the first filing date. (Oesch & Pihlajamaa 2008, p. 145-148)

### **2.3. Background on patent disputes**

An accusation of patent infringement can be in the form of a lawsuit or in the form of a letter advising the infringer of the existence of a patent and asking the infringer to consider taking a license or stop the selling and production of the infringing product. The latter is called a patent assertion and that can also be done before the patent is granted. In that case, the patent owner does not have the statutory right to ask the accused infringer to stop the selling and production of their products though. In the case of a patent infringement lawsuit, the patent in question must be granted and enforceable. (Grossman & Hoffman 2005, p. 21-26)

By asserting a pending patent application against a possible infringer the patentee can, however, ask a royalty charge from the infringer or even intimidate with possible litigation action in the future once the patent is granted. Once a notice of a third party patent existence is delivered to a company, the potential infringer has a duty to exercise due care in determining whether they are infringing (Heyman 2005, p. 9). In some jurisdictions the assertion letter has even higher significance, as damages can be calculated from the date that the infringer became aware of the patent or patent application (Yang et al 2004, p. 60).

### **2.4. Managing intellectual property**

Generally speaking, company assets can be used to create value and to extract value. But what are companies' assets nowadays? A study performed by Dr. Margaret Blair (2001, p. 1) indicates a significant change between companies' tangible and intangible assets. Her study showed that in 1978, only 17 % of a companies' value was associated with their intangible assets, but in 1998 as much as 69 % of the same companies' value was based on with the value of their intangible assets. Davis and Harrison (2001, p. 7) lists a couple of reasons for this development such as the rapid rise of the internet and the value of information. They also mentioned the growing awareness of intellectual property rights due to patent infringement proceedings taken place in the United States, but also due to counterfeit products which companies now need to battle with (Davis & Harrison 2001, p. 7).

Intellectual capital (see figure 4) is often seen as a hidden value, including for example employees' skills and knowledge, company's processes, documents, and also intellectual property. So the value is created by the Human Capital and can be extracted via Intellectual Assets. (Sullivan, 2000; Davis & Harrison, 2001)

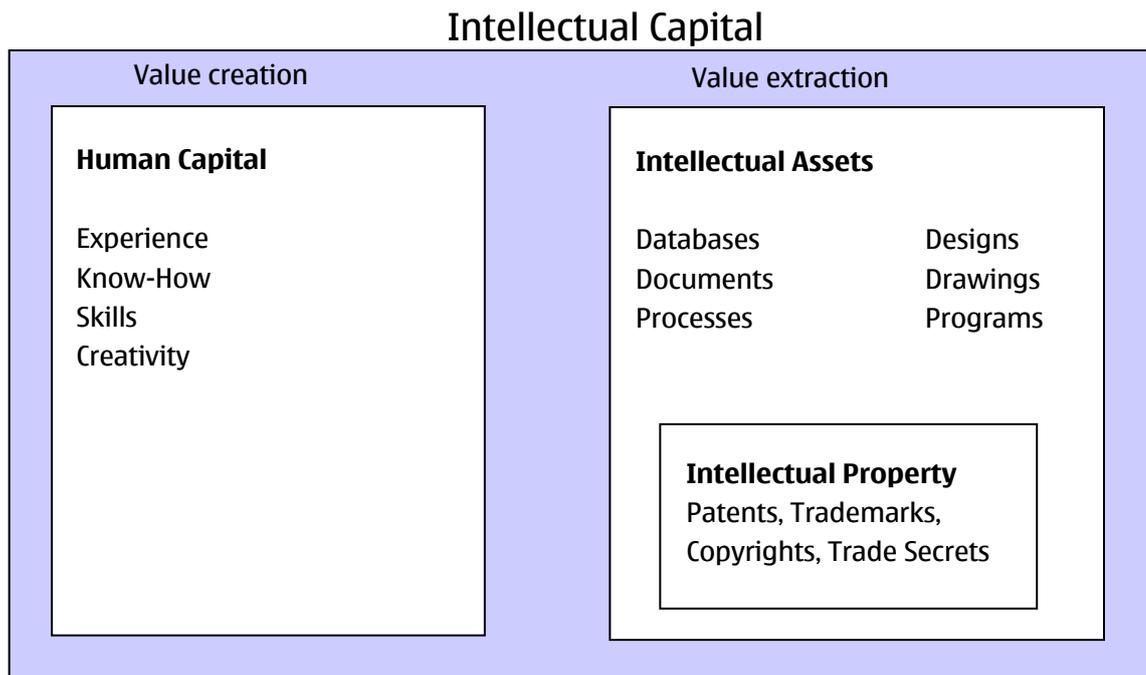


Figure 4. Intellectual Capital with its components (Adapted from Sullivan 2000, p. 18)

It can be challenging to assess the value of intellectual capital, because it cannot always be measured by direct cash flow. Products with innovative features can bring extra profit to company, and that profit can be measured. New processes can reduce the manufacturing cost and that surplus can be also be quantitatively analysed. But some intellectual capital value is indirect, such as company image or using intellectual property to block competition. (Sullivan, 2000)

Managing intellectual property is fundamental to extracting value from it. In this area, technology companies (i.e. companies selling physical innovative products) have an advantage over service companies (i.e. companies that provide services via human capital), that do not hold a portfolio of intellectual properties. Technology companies can develop decision processes, databases and work processes to successfully extract value from their intellectual properties. In doing so, the companies create a culture, structure and decision-making capabilities for systematically extracting value from their intangibles. (Sullivan, 2000)

If a company lacks the foundation of an intellectual property management system, they usually do not extract the degree of value from their intellectual capital they would be capable of. Usually, when many companies want to extract new or extra value from their intellectual properties it means a shift in focus away from defensive use into an offensive use. In defensive use the company views that the main value of their patent portfolio is to protect the company's innovations from competitive attack. The contrasting view, that is offensive use, regards the portfolio as a great source of corporate value for companies willing to exploit it. (Sullivan, 2000)

According to Sullivan (2000), the value extraction activities must meet two criteria in order to accomplish an effective way for extracting value from intellectual property. First, the activities must be aimed at improving the company's competitive position and second, they must become part of a systematic set of decision processes supported with databases that collectively allow the company to manage its intellectual property assets. (Sullivan, 2000)

In short term, the value can be extracted by reducing patent portfolio expenses and increasing patent portfolio income by selling patents or by improving licensing revenue income. Much of the expenses associated with patent portfolio come in the form of patent maintenance fees and taxes. It is not unusual that companies find that some of their patents are no longer useful and can therefore be eliminated. Companies that have out-licensed their patents usually receive far less in licensing revenue than they expected based on their licensing agreements. Auditing the licensing income usually increases the amount of income in short term, even to outweigh the cost of auditing. In mid-term, the value can be extracted by increasing the patent portfolio quality, increasing the use of the portfolio in business negotiations, and expanding licensing, joint venturing and strategic alliance activities. (Sullivan, 2000)

## **3. IP STRATEGIES AND DEFENSIVE METHODS**

### **3.1. Intellectual property strategies**

Patents are one form of intellectual property and they can be used both defensively and offensively to bring value for the company. By owning patents, a company can exclude others from using the protected intellectual asset. This can create indirect value to the company. When patents are used offensively, this can mean producing and selling protected products, licensing the rights of the patent to competitors or selling the patents. This can create direct value for the company. Offensive use of patents can also mean using them to reduce costs, for example by reducing the possibility that other companies would sue the patent owner in fear that they would make a counter-attack with their own patents. (Sullivan, 2000)

Sometimes patents are even more valuable than cash. For instance, when a company needs access to a technology owned by their competitor, the patents owned by each company can be used as bargaining chips to establish licensing agreements. The image of a company can also rely on their innovation capabilities and the technology leadership can be measured by the size and quality of their patent portfolio. (Sullivan, 2000)

A company's intellectual property strategy can be either defensive or offensive by nature. This will of course depend a lot on the company's business strategy and the role intellectual property is expected to play in it. The company defines a vision which it intends to achieve, and the company strategy should outline how the company will achieve it. Once the vision and strategy have been set, the company can define how intellectual property will contribute either by creating value or by extracting it. The flow of thought for aligning the vision, strategy, and intellectual property is shown in figure 5. (Sullivan, 2000)

Davis and Harrison (2001) have developed a value hierarchy (Figure 6), identifying five levels of activity and use for companies' intellectual property. Each level represents a different expectation that the company has about the contribution that its intellectual property function should make for supporting the company's vision and strategy. Each higher level in the pyramid represents the increasing demands placed upon the intellectual property function. Few, if any, companies in the world have mastered all five levels and extracted the maximum value from their intellectual assets. Not every

company needs to do so, but every company has room for improvement. The different levels of the pyramid are discussed more in the following. (Davis & Harrison, 2001)

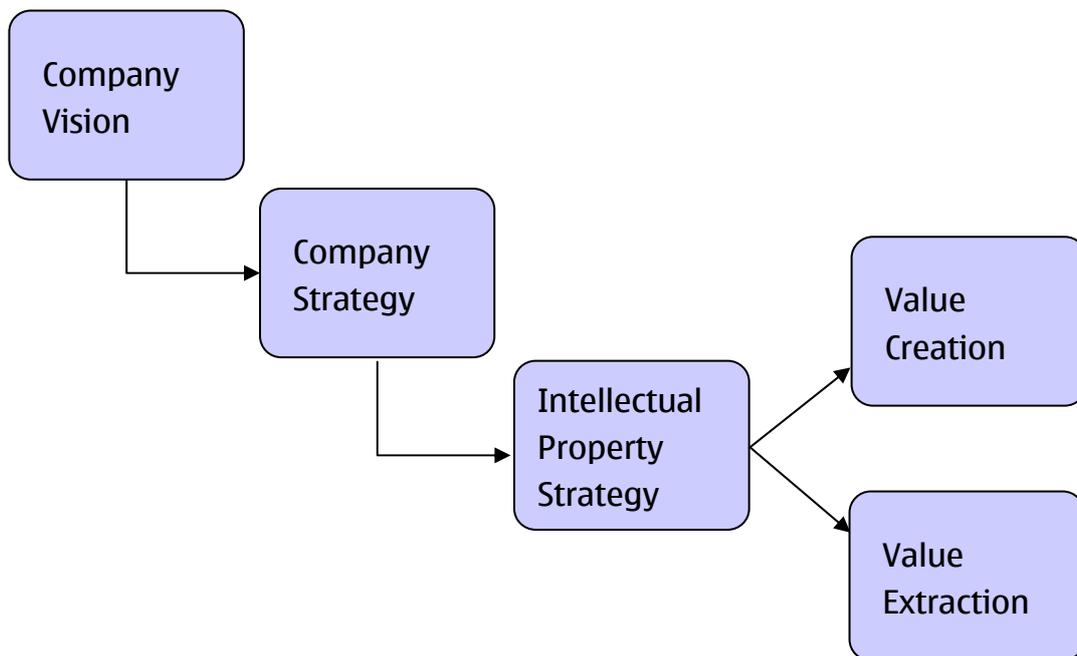


Figure 5. Alignment of vision, strategy, and intellectual property (Adapted from Davis & Harrison 2001, p. 99)

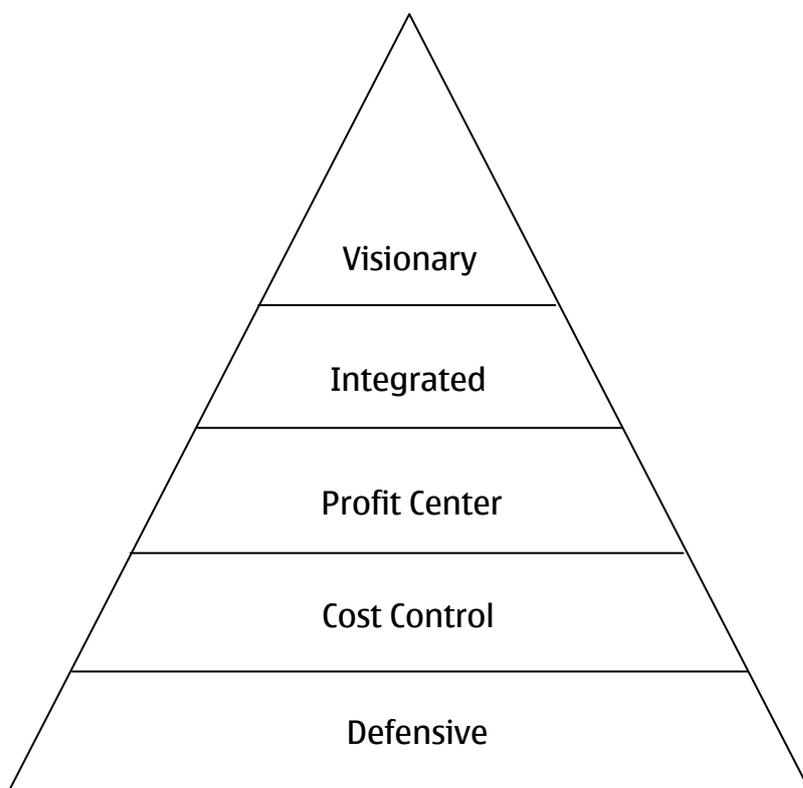


Figure 6. The value hierarchy by Davis & Harrison (2001)

On the defensive level, the main purpose of the intellectual property owned by the company is to use it for protection. By creating a pile of patents, bigger than their competitors, the companies hope to keep out any litigious competitors, since they would be able to negotiate a cross-license rather than go to court. At this level, the company can also use the intellectual property assets to prevent competitors from using them. (Davis & Harrison, 2001)

On the cost control level, the focus is on reducing the cost of filing and maintenance of the portfolio. More effort is put on to decision-making regarding the countries in which to file, patent portfolio pruning is conscientious and patent agent selection is done based on more intensive negotiations. (Davis & Harrison, 2001)

On the profit center level, companies turn to more proactive strategies that can generate additional revenues. Hence, portfolio mining and patent enforcement become of interest to companies at this level. (Davis & Harrison, 2001)

On the integrated level, intellectual property ceases to focus only exclusively on self-centered activities and companies on this level have integrated their intellectual property activities with those of other functions and embedded them in the daily operations, procedures and strategies. On this level, intellectual property function will contribute to decisions made by executives in research and development, human resources, marketing, mergers and acquisitions, etc. (Davis & Harrison, 2001)

On the final visionary level, the intellectual property function has become deeply ingrained into the various other functions in the company and takes on the challenge of identifying future trends in customer preferences as well as future trends in the industry. (Davis & Harrison, 2001)

Moving from one level to the next in the value hierarchy requires discipline, organization and coordination. So how will each level protect a company from dealing with litigious companies? On each level, the protection will be based on the company's own patent portfolio, but as the quality of the patent portfolio increases from level to level, it will also increasingly deter competitors from even starting a patent litigation against the company. On the final visionary level, the company should have very good knowledge about new technology needs and customer preferences, so that they would be, at least in theory, able to protect the needed innovations before their competitors. In an ideal world this would mean that the company would need to utilize only its own patented innovations and therefore there would not be any risk of patent litigation.

From the litigation risk point of view each new level brings more security when dealing with litigations from competitors in the market, but what if it's not a competitor who threatens with litigation? A new kind of formed company has recently been in the

headlines, companies whose main strategy is to gain patents and do business with them without any meaning of productization. These kinds of companies are often called patent sharks or patent trolls. When a patent troll approaches a company infringing its patents, the defending party cannot use its own patent portfolio for leverage in negotiations (Beyers, 2005). For this reason, it makes the patent trolls as threatening as the toughest competitor in the market. Therefore, the defensive methods identified in the next chapters are valuable guidelines for companies facing litigation, regardless of whether the plaintiff is a patent troll or a competitor.

### 3.2. European patent

The European Patent Convention (EPC) established a system for filing a single patent application to obtain national patents in countries designated in the patent application. The procedures of the EPC are under the control of the European Patent Office (EPO), which handles the patent prosecution. The EPC is a treaty open only to European countries and, according to EPO web page, the 36 countries which have ratified or acceded to the EPC at the moment are:

Austria	Hungary	Poland
Belgium	Iceland	Portugal
Bulgaria	Ireland	Romania
Croatia	Italy	San Marino
Cyprus	Latvia	Slovak Republic
Czech Republic	Liechtenstein	Slovenia
Denmark	Lithuania	Spain
Estonia	Luxembourg	Sweden
Finland	Malta	Switzerland
France	Monaco	Turkey
Germany	Netherlands	United Kingdom
Greece	Norway	Former Yugoslav, Republic of Macedonia

The European patent can also be extended to countries which are not EPC contracting states, but which have however negotiated arrangements with the EPO enabling them to be designated in a European patent application. These three extension states, according to EPO web page, at the moment are:

Albania	Bosnia and Herzegovina	Serbia
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The patentable subject matter according to EPC Article 52 (Appendix 1) are any inventions, in all fields of technology, provided that they are new, involve an inventive

step and are susceptible of industrial application. However, the following are not regarded as inventions, and are therefore not patentable subject matter as such:

- Discoveries, scientific theories and mathematical methods;
- Aesthetic creations;
- Schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
- Presentations of information.
- Inventions the commercial exploitation of which would be contrary to "ordre public" or morality; such exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation in some or all of the Contracting States;
- Plant or animal varieties or essentially biological processes for the production of plants or animals; this provision shall not apply to microbiological processes or the products thereof;
- Methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practiced on the human or animal body; this provision shall not apply to products, in particular substances or compositions, for use in any of these methods.

(EPC, 2007)

The novelty requirement, according to EPC Article 54 (Appendix 1), means that the invention must be new i.e. it does not form part of the state of the art (commonly referred to as prior art). The state of the art comprises everything made available to the public by means of written or oral description, by use, or in any other way, before the date of filing of the European patent application. The exception to this rule is other European patents. If another European patent was filed before the invention in question and might not even be published by the time of filing the patent in question, it is still considered as prior art to the later filed European patent, and should be taken into account when determining the novelty of the invention. (EPC, 2007; Chartered Institute of Patent Agents, 2007)

Inventive step requirement, according to EPC Article 56 (Appendix 1), means that taking into account the state of art, the invention is not obvious to a person skilled in the art. The person skilled in the art is an imaginary person who is presumed to have access to the entire state of the art and possesses a common general knowledge. However, the person skilled in the art has no inventive ingenuity. Inventive step can not however be challenged using a non-public earlier filed European patent. Non-public earlier filed European patent can only be used for challenging novelty. The industrial application requirement means that the invention can be made or used in any kind of industry. (EPC, 2007; Chartered Institute of Patent Agents, 2007)

### **3.3. European patent infringement actions**

If a patent owner wants to start a patent litigation using a European Patent, they can initiate it in those countries where they have validated the European Patent. If the patent owner would like to initiate litigation in multiple EPC countries, they must initiate parallel infringement actions in each selected country based on the same European patent and directed against the same alleged infringer. The infringement actions are handled by the national courts in the states where the infringing acts have taken place. This means that the infringement actions of a European patent is dealt with by national law. There are significant differences between various national court systems and the way the court handles patent cases. Therefore it is not uncommon to have different rulings on the same patent infringement action in different courts. (European Patent Office 2006, p. 1-2)

One of the significant differences is between common law and civil law countries. United Kingdom and Ireland are common law countries, whereas the rest of the EPC countries are civil law countries. These two systems have differences of approach. Common law is by origin based on customary law. It gives high value to precedents which are typically binding on courts of equal or lower status. Statutes are taken as prescriptive, with little room for creative interpretation. In contrast, civil law tends to be based on broader principles, with less emphasis on precedents, even though precedents are by no means ignored. Often the judge in civil law country has more freedom to interpret the law, if such circumstances call for it. (Ladas & Parry web page; Chartered Institute of Patent Agents, 2007)

Several factors play a role in the decision making about where to start a patent litigation using a European Patent; 1) where the accused infringer sells or manufactures the infringing products or services; 2) length of the proceedings; 3) cost issues; 4) single or dual track court system; etc. The most experienced patent courts are in France, Germany, The Netherlands and the UK. (Hoyng & Eijsvogels, 2007)

Since the infringement procedure in each EPC country can be a bit different, only Germany, France and United Kingdom will be discussed hereafter in more detail, as they represent the differences between common/civil law systems.

#### Germany

Speedy procedures of infringement actions certainly constitute a big attraction to the German jurisdiction. In first instance proceedings, most decisions are rendered within one year from the filing date of the infringement suit. According to German national law, several acts can be seen as infringing a patented invention, such as manufacturing,

offering for sale, selling, using, or importing a product which is a subject of the patent. (Hoyng & Eijsvogels, 2007, Schuster, 2004)

The patent infringement cases are first brought to one of the twelve District Courts in Germany. In principle, the plaintiff has the choice of which court they want to use. District Court of Mannheim is known for its particularly quick procedure and the Frankfurt District Court is known for its liberal approach to issuing preliminary injunctions. But the District Court of Düsseldorf holds centre stage in classical patent infringement matters having the greatest number of cases to be heard each year. Currently that number is over 400 new cases each year, which is about 50% of all German patent cases. The selected District Courts decide the cases with a panel of three judges and the decision can be appealed to the Court of Appeals within one month and from the Court of Appeals to the Supreme Court within one month. Figure 7 shows the German court system. (Hoyng & Eijsvogels, 2007, Schuster, 2004)



Figure 7. German court system

### France

According to French national law the following can constitute as infringing act:

- Making, offering, marketing or using a product which is the subject matter of the patent, or importing or stocking a product for such purposes;
  - Using a process which is the subject matter of the patent or when the third party knows, or it is obvious in the circumstances, that the use of the process is prohibited without the consent of the owner of the patent, offering the process for use on French territory;
  - Offering, marketing or using the product directly obtained by a process which is the subject matter of the patent or importing or stocking for such purposes.
- (Hoyng & Eijsvogels, 2007)

The infringement cases are first brought to one of the seven First Instance Courts. The judges deciding on the patent infringement do not have any technical background. But due to the vast majority of patent cases brought to Paris Courts an intellectual property chamber has been created. Judges in this chamber have developed a recognized experience in patent matters. An appeal from the decision rendered by the First Instance Court can be made within one month from the date of serving the decision to the Court

of Appeal and appeal of their decision can be made to the Supreme Court within two months from the date of serving the decision. Figure 8 shows the French court system. (Hoyng & Eijsvogels, 2007)



Figure 8. French court system

### United Kingdom

According to United Kingdom national law, the making, disposing of, offering to dispose of, using, importing or keeping a product which is subject of the patent is an act of infringement. Also if the patented invention is a process, the using of the process, offering for use the process, or disposing, keeping or importing any products obtained directly by means of that process is also an act of infringement. (Hoyng & Eijsvogels, 2007)

It is good to remember that United Kingdom is not a single jurisdiction but three: England and Wales, Scotland and the Northern Ireland. The patent disputes can be brought to four courts which are the Patents Court, the Patents Country Court in London, the Court of Session in Edinburg and the High Court of Northern Ireland in Belfast. A decision of the Patent Courts or High Courts can be appealed to the Court of Appeals and the subsequent Court of Appeals decision can be appealed to the House of Lords. Figure 9 shows the United Kingdom court system. (Hoyng & Eijsvogels, 2007)

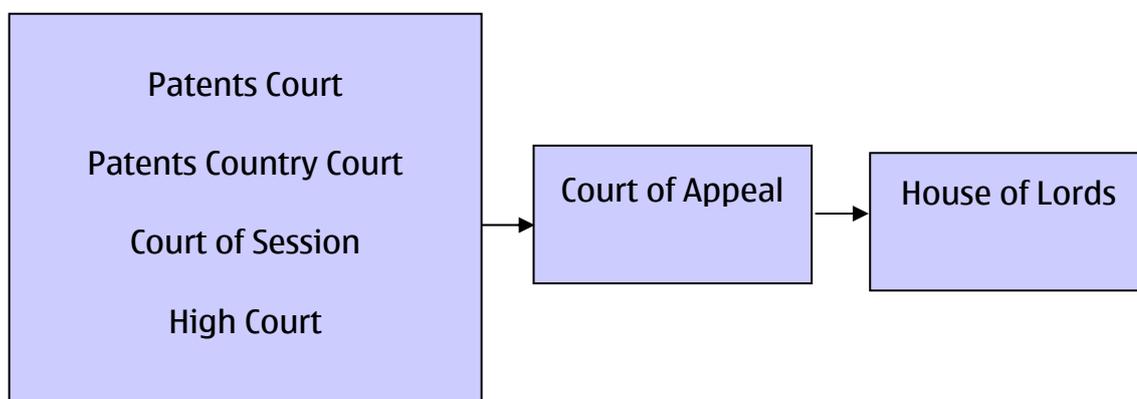


Figure 9. United Kingdom court system

### **3.4. Defensive methods in Europe**

#### **3.4.1. Opposition**

Opposition gives an opportunity to attack a European patent on a central basis with the objective of having it revoked or limited by amendment for all the countries to which it applies. (Chartered Institute of Patent Agents 2007, p. 25/6)

The granted European patent can be opposed on the basis of one or more of the grounds, defined in EPC Article 100 (Appendix 2), which are

- (a) the subject-matter is not patentable based on the patentability rules defined in EPC Articles 52 to 57 (Appendix 1).
- (b) the European patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, as defined in EPC Article 83
- (c) the subject-matter of the European patent extends beyond the content of the application as filed, or, if the patent was granted on a divisional application or on a new application filed under Article 61 (Appendix 3), beyond the content of the earlier application as filed. (EPC, 2007; Guidelines for examination in the European patent office 2007, p. 343)

An opposition must be filed with the EPO Opposition Division within 9 months from the grant of a European patent and it is not deemed to have been filed until the opposition fee has been paid. There are no restrictions on who can file an opposition, except that it can not be the patentee itself, and it can be also filed jointly by more than one person or company. An appeal of the opposition decision can be filed with the EPO Board of Appeal (EPO web page; Chartered Institute of Patent Agents 2007, p. 25/5-7)

Opposition proceedings usually take three to five years to resolve and they cost approximately €80,000 – €120,000. A European patent and each corresponding national patent remain in force unless and until revoked or surrendered. Therefore, filing an opposition does not preclude the opponent from subsequently filing a revocation or nullity action against the resultant national patent in the national courts unless the national law excludes this option. (EPO web page; Chartered Institute of Patent Agents 2007, p. 25/5-6; Nykänen, 2009)

#### **3.4.2. Intervention**

According to EPC Article 105 (Appendix 4), if an opposition period has expired but there is a pending opposition, any third party who proves that proceedings for infringement of the patent have been instituted against them can intervene in the

opposition. The grounds are then the same as for an opposition (see chapter 3.4.1). A notice of intervention must be filed within 3 months after the infringement proceedings were started. (EPC, 2007)

### **3.4.3. Third party observations**

According to EPC Article 115 (Appendix 5), a method called Third Party Observations can be used to oppose a patent before it's granted or during an open opposition. There are no restrictions on who the party can be, except that it can not be a party of the proceedings (examination, opposition or appeal). It can take as much as five year to get a result based on observations if the patent is in opposition, or as little as six months if the patent is in examination. The cost of filing an observation can be approximately between €1,000 and €12,000, even though there is no official fee for filing it. The observation must be filed in writing and must include a statement of the grounds on which they are based. The grounds can only be based on patentability rules as defined in Articles 52 to 57 (Appendix 1). (EPC, 2007; Chartered Institute of Patent Agents 2007, p. 4/30-31; Nykänen, 2009)

The observations can be filed at any time following the publication of a European patent application before the patent is granted, or during opposition or an appeal before the final decision is made. The party filing the observation does not however become a party to the proceedings (examination, opposition or appeal) and there will be no correspondence between the party and the EPO regarding the validity of the observations made. There is no limitation on how many times observations can be filed. (EPC, 2007; Chartered Institute of Patent Agents 2007, p. 4/30-31)

### **3.4.4. Patent revocation**

To obtain a revocation of a granted European patent in each designated country after the expiry of the opposition period, a revocation action must be filed separately in all of the designated states. Many issues such as procedural laws, judges and interpretation of claims can affect the outcome of the revocation action. For instance, the same European patent may be maintained as granted in Germany, amended in France and revoked in the United Kingdom. (European Patent Office 2006, p. 1-3)

If a litigation case is brought against a company in Europe using an EP patent it is possible to challenge the validity of the patent by filing a revocation action. In some countries the revocation action is handled by the same court as the infringement action, but in some countries it is handled by a different court. One reason for this is the cultural differences regarding how the grant of a patent is viewed. In France and United Kingdom a patent represents a contract between society and the inventor, and anyone accused with patent infringement can challenge the validity of the patent. The German

view is more paternalistic. Patents are granted because the state has decided, in its wisdom, that good will flow from their grant. Challenging the states decision is not viewed favorably and therefore in Germany a patent being invalid is not in itself a defense to a claim of patent infringement and therefore the same court will not decide on both actions. The following table (Table 2) will show if the same court will handle revocation action (single track) or if a different court will decide on it (dual track) (Ladas& Parry web page; Clerix, 2009)

Table 2. Single track and dual track countries (adapted from Clerix 2009, p. 18)

<b>Single track countries</b>	<b>Dual Track Countries</b>
Belgium	Austria
Cyprus	Bulgaria
Denmark	Czech Republic
Estonia	Germany
Finland	Hungary
France	Norway
Greece	Poland
Iceland	Portugal
Ireland	Romania
Italy	Slovak Republic
Latvia	
Liechtenstein	
Lithuania	
Luxembourg	
Malta	
Monaco	
Netherlands	
Slovenia	
Spain	
Sweden	
Switzerland	
Turkey	
United Kingdom	

In dual track countries, the defendant can request the infringement court to stay the proceedings until the validity issue is decided by another court. The practice of staying the proceeding is handled differently in different countries and in different courts. The main principle applied by the court in Düsseldorf (but also by other courts in Germany) is that the proceedings are stayed if it is highly likely that the revocation action proceeding will be successful. The high likelihood of revoking a patent is assumed if

prior art information can be presented to show that it is novelty destroying and in addition has not been assessed in the examination proceedings when the patent was granted. If the prior art presented is used only against lack of inventive step it is most likely that the request for stay is not granted. (Bergermann & Verhauwen, 2008)

The grounds for a revocation action, as defined in EPC Article 138 (Appendix 6) in the contracting states are the same as for opposition (see chapter 3.4.1) with a couple of extra options as well (EPC, 2007):

- d) the protection conferred by the European patent has been extended; or
- e) the proprietor of the European patent is not entitled under Article 60, paragraph 1 (Appendix 7).

Since the revocation procedure in each EPC country can be a bit different, only Germany, France and United Kingdom will be discussed here in more detail, as they represent the differences in common/civil law system and also the differences between single/dual track processes.

### Germany

In Germany, the accused infringer can file a revocation action with the Federal Patent Court (FPC), if they wish to challenge the validity of the patent. However, it is not possible to file a revocation action with the FPC if there is a pending opposition action for the same patent. An appeal of the FPC decision can be filed with the Supreme Court. Duration of the revocation proceedings depend on the court and delays can be expected if additional extensions are requested by the parties or if the court needs to appoint an expert. But generally, the revocation action lasts about 12-18 months in the FPC and 24-36 months in the Supreme Court. The cost of a revocation action can be approximately €45,000 – €110,000 in the Federal Patent Court. Figure 10 shows the German court system for revocation actions. (Blumenröder 2007, p. 2; Ladas & Parry web page; Bittner 2008, p. 5; Hoyng & Eijsvogels, 2007)

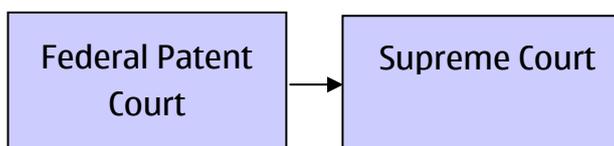


Figure 10. German court system for revocation actions

In principle, patentability is considered the same way as defined by EPC Articles 52-57 (Appendix 1), but the contents of prior applications may be interpreted in a slightly different way by the German FPC. There have been repeated discussions regarding the differences in practice between EPO and the German practice. Whereas in many cases the EPO seems to take the position of ‘photographic novelty’ the German practice has established a broader view which could be designated as ‘extended novelty’. The German courts consider that the ‘photographic novelty’ is something that is explicitly disclosed in the prior art documents and is therefore a more limited viewpoint. On the contrary, the ‘extended novelty’ approach also asks what the average man skilled in the art would read from the prior art document with the help of his knowledge. This means that also something that has not been explicitly mentioned in the prior art document can be considered to be disclosed if it is self-evident for the average man skilled in the art, as long as it is not considered as an inventive step. (Hoyng & Eijsvogels, 2007)

Novelty can be attacked in the German FPC by using non-public documents filed earlier than the patent in question either as a national application in Germany, as an European application, or as a Patent Cooperation Treaty (PCT) application designating Germany as a country for protection. German FPC has also taken a bit more strict approach than the EPO for defining an inventive step. It occurs frequently that the FPC finds an invention to be lacking the inventive step even if the EPO has – in opposition proceedings – upheld the patent with the same prior art. (Hoyng & Eijsvogels, 2007)

### France

In France, the accused infringer can file a revocation action to the same court where the infringement action is handled and they are heard together. Validity of the patent can be challenged based on the EPC patentability criteria as disclosed in chapter 3.2, as the French national law is very similar to the law under EPC. An appeal of the validity decision follows the same rule as for appeal for infringement, described in chapter 3.3 figure 8. Duration of the proceedings including infringement and/or validity of the patent takes usually 16-25 months in the First Instance, 15-24 months in the Court of Appeal and 24 months in the Supreme Court, but delays can be expected if additional extensions are requested by the parties. The cost of infringement and/or validity proceedings is approximately €80,000 – €200,000 in the First Instance. (Hoyng & Eijsvogels, 2007)

### United Kingdom

Validity of a patent can be challenged in the same court which handles the infringement action and is therefore a legitimate defense for infringement accusations. The revocation action can be filed even if there are no infringement actions ongoing. The approaches adopted by the United Kingdom courts for evaluating the grounds for revocation

(patentability, novelty and in particular inventive step) are not identical to those adopted by the EPO. As a common law jurisdiction, the precedents play an important role when courts assess these issues. (Hoyng & Eijsvogels, 2007)

The leading precedent on novelty based on prior publication remains *General Tire & Rubber Co. v. Firestone Tyre & Rubber Co. Ltd.* The key ruling in that case was that if prior publication contains a clear description or instruction to do or make something that would infringe the patentee's claim if carried out after the grant of the patentee's patent, the patentee's claim will have been shown to lack the necessary novelty. Another lack of novelty argument is if it can be shown that inevitable results of carrying out directions in the prior publication will result in something within the claim. (Hoyng & Eijsvogels, 2007)

On inventive step, the UK does not adopt the EPO's typical approach. The approach for analyzing inventive step is to follow the four steps laid down in a precedent of *Windsurfing International v. Tabur Marine Ltd.* The four steps by Hoyng & Eijsvogels (2007) are:

1. Identify the inventive concept in the patent.
2. Assume the mantle of the normally skilled but unimaginative skilled man of art at the priority date and impute to him what was, at that date, common general knowledge in the art.
3. Identify what, if any, differences exist between the matter being cited as "known or used" (i.e. the prior art) and the alleged invention.
4. The court must then ask whether those differences, absent any knowledge of the alleged invention, constitute steps which would have been obvious to the man skilled in the art, or whether they require any degree of invention.

An important factor in each case is assessing who is the man skilled in the art and what the "common general knowledge" was of that person at the time of the invention. This is assessed in a different and perhaps more exhaustive manner than in the EPO, primary evidence being provided by party-appointed experts in Court, who are typically cross-examined. An appeal process follows the same route as the appeal for infringement presented in chapter 3.3, figure 9. Duration of the proceedings including infringement and/or invalidity of the patent takes usually 9-14 months in the First Instance and 12-18 months in the Court of Appeal, but delays can be expected if additional extensions are requested by the parties. The cost of infringement and/or validity proceedings is approximately £350,000 – £1,000,000 in the Patents Court, the Patents County Court, the Court of Session and the High Court. (Hoyng & Eijsvogels, 2007)

### 3.4.5. Compulsory licenses

The compulsory license issue needs to be brought separately in each jurisdiction, as a defense argument. And again different jurisdictions can have different practices, therefore only Germany, France and United Kingdom will be discussed here in more detail. As the compulsory license defense will be heard by the same court where the revocation action is handled, the cost and duration of the proceedings are approximately the same.

#### Germany

A compulsory license can only be granted if the following conditions are fulfilled. The applicant has tried to obtain a license from the patentee and such efforts have lasted a reasonable time. The request also has to be made for reasonable conditions which are non-discriminatory. Only in a case where these efforts have been without success may a compulsory license be considered. (Hoyng & Eijsvogels, 2007)

The compulsory license can also be requested in situations where a later filed patented invention (owned by the compulsory license requestor) comprises an important technical progress of considerable economic significance than another earlier filed patented invention and the exploitation of the later filed invention is dependent on the exploitation of the earlier filed invention. In that case, the court may grant a compulsory license to exploit the earlier filed invention. (Hoyng & Eijsvogels, 2007)

If the compulsory license is granted, the licensee is obligated to pay the patentee reasonable royalties. Furthermore it has to be limited to the extent necessary. In Germany, the motion for granting a compulsory license has to be brought before the Federal Patent Court in the first instance. The decision can then be appealed before the Federal Supreme Court. In practice, there have been only a limited number of compulsory licenses requested, mainly from the pharmaceutical industry and the last case dates back to 1995. (Hoyng & Eijsvogels, 2007)

#### France

According to French national law, there are three different kinds of compulsory licenses granted:

- Compulsory license for non-exploitation
- Ex-officio license
- Dependency license

If, within a certain time period, the patent owner has not started to exploit or has not made any preparations to start the exploitation of the invention, or has not marketed the patented product enough to satisfy the market, or has abandoned the work of the patented invention for more than three years, a compulsory license for non-exploitation can be obtained if the applicant can also show that they have tried to obtain a license from the patent owner, but failed. (Hoyng & Eijsvogels, 2007)

Ex-officio licenses are granted if public bodies (public health, economic development or national defense) need it. Ex-officio licenses can be granted only by the Minister responsible for industrial property. (Hoyng & Eijsvogels, 2007)

The dependency license can be granted if a later filed patent can not be exploited without infringing an earlier filed patent. The later filed patent must also then have substantial technical progress and it must constitute an economic interest regarding the prior art. (Hoyng & Eijsvogels, 2007)

### United Kingdom

Compulsory licenses can only be sought if more than three years have passed after the grant of the patent. Based on who the patent owner is (WTO or non-WTO patent owner), different grounds for allowing the license are considered. A WTO patent owner is a national of or is domiciled in one of the WTO member countries or the patent owner has a real and effective industrial or commercial establishment in a WTO member country. Grounds for allowing a compulsory license for a patent owned by a WTO member are the following:

- Demand of the patented product is not being met on reasonable terms.
- The patent owner has refused to license the invention on reasonable terms when exploitation of a later filed invention is dependent on the exploitation of the earlier filed invention and the product in question has important technical advantages.
- The patent owner has refused to license the invention on reasonable terms and for that reason the establishment or development of commercial or industrial activities in UK is unfairly prejudiced.

(Hoyng & Eijsvogels, 2007)

In any situation, the compulsory license requestor is first forced to seek license from the patent owner and if unsuccessful after a reasonable time period, the compulsory license request can be made. Furthermore, the national law also specifically excludes semiconductor technology from the scope of compulsory licenses. Grounds for allowing a compulsory license for a patent owned by a non-WTO member are the following:

- Patented invention is not being commercially worked, or to the fullest extent reasonably practicable, in the UK and the demand is not being met by importation.
- Demand of the patented product is not being met on reasonable terms, or not being met via importation on a substantial extent.
- Commercially workable patented invention is being prevented or hindered from being worked in the UK.
- The patent owner has refused to license the invention on reasonable terms and therefore the export market from the UK is not being supplied.
- The patent owner has refused to license the invention on reasonable terms and it is preventing an exploitation of another invention which makes a substantial contribution to the art.
- The patent owner has refused to license the invention on reasonable terms and establishment or development of commercial activities in the UK is therefore prevented or hindered.
- Situations where products or processes not covered by the patent have been unfairly prejudiced by the patent owner.  
(Hoyng & Eijsvogels, 2007)

The application for compulsory license is made to the United Kingdom Patent Office and an appeal may be filed with the Patents Court. (Hoyng & Eijsvogels, 2007)

#### **3.4.6. Patent exhaustion**

The European Court of Justice has adopted a “community-wide exhaustion” approach comprising the entire European Union. This means that in some situations the patentee might lose his rights for opposing the free circulation of goods that infringe his patent, because he has used up or exhausted his patent rights due to expressed consent or implied consent. In principle, patent rights can be exhausted in the European Union if a specific product has been put on the market within the territory of patent protection either by the patentee or by a third party with the patentee’s consent. As a result, the patentee can not exercise his patent rights against third parties who use or sell or import to another EU country that specific product. The European Court of Justice has also ruled that putting the product on the market within European Union constitutes exhaustion irrespective of whether there is patent protection in the country where the product was put on the market the first place. As the patent exhaustion defense will be heard by the same court where the revocation action is handled, the cost and duration of the proceedings are approximately the same. (Mueller 2006, p. 440; Hoyng & Eijsvogels, 2007)

### **3.4.7. Prior use**

The prior use defense needs to be brought separately in each jurisdiction, as a defense argument. Again, different jurisdictions can have different practices, but in Germany and United Kingdom the practices are much the same and therefore they are discussed here together, whereas France is described separately. As the prior use defense will be heard by the same court where the revocation action is handled, the cost and duration of the proceedings are approximately the same.

#### Germany and United Kingdom

A person who has before the priority date of a patent either done an act in good faith which would constitute an infringement of the patent or has made serious and effective preparations to do such an act has the right to continue to exploit the invention. But the acts and preparations must have happened in the country in question. An act done in good faith will exclude for example acts carried out in breach of confidence or some other bad faith manners. In the United Kingdom, the serious and effective preparations need to be (according to precedents) at a very advanced stage, so that infringement is about to occur. The rights achieved this way are usually relatively narrow, protecting only the substance as it was on the day of priority in the UK. In Germany the serious and effective preparations are defined as having an intention to use the invention and that necessary arrangements for a use have been made. The rights achieved this way in Germany, include also variants of the product as long as they do not interfere with the subject of the patented invention. (Hoyng & Eijsvogels, 2007)

#### France

Any person, who within the territory possessed in good faith the invention before the priority date of the patent, shall enjoy personal right to work out the invention. The possession means that the prior invention must contain all the features claimed by the patent, even though full identity is not required, a simple equivalence between both is sufficient. French conception of prior use is very specific. Contrary to many countries, in France, the personal right is broadly recognized: the prior user does not have to prove acts intended to work out the invention as is the case in Germany and United Kingdom. (Hoyng & Eijsvogels, 2007)

### **3.4.8. Declaration of non-infringement**

Declaration of non-infringement has not been specifically provided by the European Patent Convention, however, such a declaration is available in some jurisdictions under national law (Chartered Institute of Patent Agents, 2007). In the United Kingdom, the

1977 Patents Act, chapter 37, Section 71 (Appendix 8) allows a court to grant a declaration of non-infringement of a patent if it is shown that

- a) the applicant has applied in writing to the proprietor for a written acknowledgement for a declaration of non-infringement and has furnished full particulars in writing of the act in questions, and
- b) the proprietor has refused to give such acknowledgement.

An application for a declaration of non-infringement relates to the product or process for which the declaration is sought, and no other. This means that if the patentee later observes any new products in the market and considers those to infringe its patent the patentee would have a possibility to raise new separate proceedings. (Chartered Institute of Patent Agents, 2007; United Kingdom Patent Act)

It is not possible to seek a declaration of non-infringement in Germany, but in France it has been possible since 1984. The grounds for applying it are basically the same as in the United Kingdom. This defensive action can delay the infringement proceedings, therefore allowing more time for the defendant to come up with any other defensive methods usable in the infringement proceedings. As the declaration of non-infringement will be heard by the same court where the revocation action is handled, the cost and duration of the proceedings are approximately the same. (Chartered Institute of Patent Agents, 2007)

The Brussels Convention of 1968 has made it possible to litigate patent infringement in a member state of the European Union even if the patent has been registered in another member state. If such patent infringement litigation is ongoing for example in Germany and a declaration of non-infringement action is started for example in the United Kingdom or France, the action may very well delay the patent enforcement in Germany. Thus, it can be a quite good defensive attack to select a country having a particularly slow judicial system. Italy is one example of such a slow judicial system and therefore a declaration of non-infringement action filed in Italy is sometimes also called as an 'Italian torpedo', reflecting how it can jeopardize the infringement proceedings taking place in another member state. (Chartered Institute of Patent Agents, 2007; Brussels Convention, 1968)

### **3.5. United States patents**

The United States Patent and Trademark Office (USPTO) is the administrative agency of the United States Government managing the examination of patent application and granting patents. According to Section 101 of title 35 of the United States Code (Appendix 9), the patentable subject matter is defined as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Thus basically everything under the sun that is made by man is, in theory, patentable in the United States. But first, the United States Constitution limits the power of Congress to the promotion of the “useful arts”, which are generally understood to include technological endeavors rather than, for example, artistic or social endeavors. Furthermore, section 101 also defines that the invention must fall within one of the statutory categories of process, machine, manufacture or composition of matter. But since the terms are still quite broad, many precedents have limited the patentability criteria more. So in practice, the law of nature, natural phenomena, abstract ideas, thinking processes, intelligent concepts, products found from nature, and publications are not regarded as patentable subject matter. (Greenlief, 2008; Durham 2004, pp. 23-29)

United States Code Section 102 of title 35 (Appendix 10) defines that a patent can be granted unless

- (a) the invention was known or used by others in the U.S. or was patented before or described in a publication anywhere in the world, before the invention was made, or
- (b) more than one year prior, the invention was patented or described in a publication anywhere in the world or in public use or sale in the U.S., or
- (c) the inventor has abandoned the invention, or
- (d) the inventor has applied a patent outside of the U.S. more than 12 months before applying for it in the U.S., or
- (e) the invention was described in someone else’s published U.S. patent application (or in a PCT application where the U.S. was designated and the publication language was English) filed before the invention was made, or
- (f) the applicant himself did not invent the invention, or
- (g) another inventor invented the same invention before and has not abandoned the invention.

Other requirements of patentability are novelty (United States Code, Section 102 of title 35) and nonobviousness (United States Code, Section 103 of title 35), which are analyzed quite differently in United States than in other countries. This is due to the unique “first to invent” system. The “first to invent” system differs from the “first-to-file” systems under which the rest of the world operates. The first to invent principle is

defined in United States Code, Section 102(g) of title 35 (Appendix 11). In theory this means that if two or more applicants apply for a U.S patent on the same invention, each having independently made the invention, the patent will be awarded to the one who was first in time to invent, regardless of the order in which the respective patent applications were filed. This does not however happen automatically, but the competing applicant must participate in an interference proceeding within the USPTO to determine which party was first to invent. For this reason the novelty and nonobviousness of an invention are evaluated, in theory, as of its 'invention date' which might differ from the actual filing date. (Mueller, 2006; United States Code, Section 102 & 103 of title 35)

United States patent applications also enjoy a 'grace period' (United States Code, Section 102(b) of title 35) comprising a one year time period. The inventor does not lose the rights for a patent if a patent application is filed within one year of making the invention public. (Mueller, 2006; United States Code, Section 102 & 103 of title 35)

The nonobviousness requirements are defined in United States Code, Section 103 of title 35 (Appendix 11). In practice, it states that the invention must not be obvious for a man skilled in the art at the time of invention. So the invention must represent enough qualitative advance over earlier technology. (Mueller, 2006; United States Code, Section 103 of title 35)

### **3.6. United States patent infringement actions**

According to United States Code, Section 271 of title 35 (Appendix 12) a patent infringement occurs when someone without authority makes, uses, offers to sell, or sells any patented invention within the United States, or imports into the United States any patented invention, during its grant term. United States District Courts have jurisdiction over patent infringement lawsuits. Local patent rules and jury demographics have however made some jurisdictions more attractive to patent plaintiffs. Appeal of the District Court's decision can be made to the Federal Circuit and in theory an appeal from the Federal Circuit's decision can be made to the Supreme Court, but in practice the majority of the latter are denied. (Hoyng & Eijsvogels, 2007; United States Code, Section 271 of title 35)

An alternative way to solve patent disputes is via the International Trade Commission (ITC). A patent owner whose rights are being infringed by a product, which is being imported into or out of the United States, can file a petition with the ITC according to USC Section 1337 of Title 19 (Appendix 13). The complaint will be investigated by the ITC which can issue a binding judgment and order the defendant to cease the infringement. The ITC proceedings are becoming a more popular forum for patent infringement cases because they cost less than proceedings via court and they are also more time-efficient. One of the major disadvantages for a patent owner using the ITC is

that they can not recover any damages because injunction is the only available remedy. In principle, the defensive methods available via court are also available via ITC and the appeal will follow the same route as well. Figure 11 shows the U.S. court and ITC system for infringement actions. (Prescott, 2006; United States Code, Section 1337 of title 19)

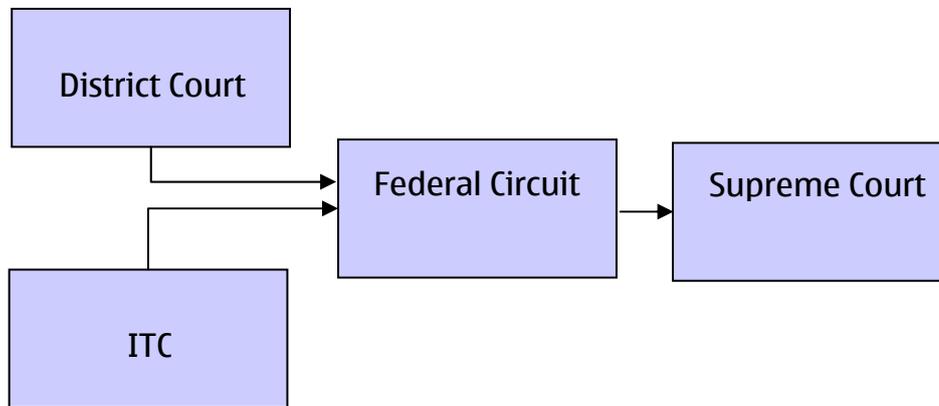


Figure 11. United States Court and ITC system

Numerous judicial decisions provide that the analyzing of patent infringement is a two-step process comprising: (1) interpretation of the patent claims and (2) comparison of the properly interpreted claims with the accused device. The claim interpretation is to be performed by the judge and many district courts now carry out their claim interpretation responsibilities in the context of a separate pre-trial hearing, usually referred to as a “claim interpretation hearing” or a “Markman hearing”. The second step of the patent infringement analysis requires that each limitation of the properly interpreted claim be compared to the accused device. Infringement cannot be determined by comparing the claimed and accused devices as a whole, but the analysis must be performed on a limitation-by-limitation basis. If even a single limitation is not met in the accused device, there cannot be an infringement. It should be noted that as a common law country, the precedents play an important role when interpreting the claims. (Mueller 2006, pp. 267-326)

### 3.7. Defensive methods in United States

#### 3.7.1. Reexamination

Reexamination, particularly *ex parte* reexamination, was established by legislation in 1980. The purpose was to provide a relatively low-cost alternative to federal court litigation in which to resolve certain questions on validity. Currently, there are two reexamination options available, *ex parte* reexamination and *inter partes* reexamination. *Ex parte* reexamination can be requested by anyone, even the patent owner, but *inter partes* reexamination can be requested only by third parties. The reexamination request

should include prior art that must raise a substantial new question of patentability. If a substantial new question of patentability exists, the USPTO will issue an order for reexamination. Therefore, the prior art should preferably be new compared to the cited prior art which the USPTO has already examined. A request for reexamination can be based only on prior art consisting of patents or printed publications which means that patentability can be challenged using only lack of novelty or obviousness criteria. (Mueller 2006, pp. 256-264; Greenlief, 2008; Sharer & Mauk, 2008)

One disadvantage in an ex parte reexamination is that the third party requestor is not entitled to any participation once the examination begins and the requestor can not appeal the final decision. In an inter partes reexamination the third party requestor is allowed to participate throughout the reexamination offering comments on the issues in office actions and to rebut contentions made by the patent owner during examination of the claims. Also the decision can be appealed to the Board of Appeals and Interferences (BAI) and from there to the Court of Appeals for the Federal Circuit. (Mueller 2006, pp. 256-264; Greenlief, 2008; Sharer & Mauk, 2008)

Reexamination may be a good option when the reexamination request is based on one or more good references that provide strong invalidity and obviousness arguments. Ex parte reexamination is cheaper than inter partes reexamination, the former costing normally less than \$50,000 and the latter normally less than \$200,000. But as the inter partes reexamination has additional advantages which may justify the increased cost. Both reexamination procedures take usually less than two years to complete. (Heyman, 2005; Sharer & Mauk, 2008)

### **3.7.2. Interference action**

In the case where two companies have both individually filed patent applications claiming coverage to a same invention, the one who thinks they have invented the patented idea first can file an interference action with the USPTO. Interference is an action where a company can claim that they are the first to invent what has been claimed in a patent (either pending or granted patent). The interference action can then be used to have the other party's patent either invalidated or to be modified to cover usually a much less broad idea than initially attempted. Both results may prevent any possible infringement of the other party's patent. (Mueller 2006, pp. 157-162; Sharer & Mauk, 2008)

An interference can be provoked in the USPTO either between two pending patent applications or between a pending patent application and an issued patent. In any case, the company seeking the interference must have a pending application. If the company does not have a pending application in the USPTO, a re-issue application can be filed (subject to certain time limits) based on the company's issued patents and the re-issue

application can be used to provoke an interference. (Sharer & Mauk, 2008; Heyman, 2005)

In order to provoke an interference the applicant must meet the following criteria according to Heyman (2005):

- The applicant's claims of the patent application must claim the same subject matter as one or more claims in the other party's patent.
- The patent application used to provoke the interference must be filed within one year of the grant date for the patent or within one year of the publication date of the published patent application.

Once the criteria has been met, the company notifies the USPTO examiner about the interference intention and the examiner will suggest the interference to the Board of Appeals and Interferences (BAI). The Board will decide if an interference should be declared. If the interference is declared, the parties will proceed to a hearing in front of the BAI. The hearing is similar to a trial and the BAI weighs all the evidence presented by the parties. The parties are identified as senior and junior parties, based on filing dates of their inventions, i.e. the patentee whose patent application has the earlier filing date is referred to as the senior party and the other applicant as the junior party. The heavier burden of proof will be on the junior party. The interference process can take a year or more before the actual decision is declared. Appeal of the final decision may be filed to the Federal Circuit. (Sharer & Mauk, 2008; Heyman, 2005)

An interference provides several advantages over litigation focused on invalidity. For example, the interference is conducted by the USPTO which has more experience in deciding priority of invention contests than the district courts. The BAI typically consists of individuals having technical degrees and in some cases legal degrees and they are experts in the USPTO rules and procedures. On the other hand, very few federal district court judges have technical degrees and are familiar with USPTO rules and procedures. In some cases, an interference proceeding may be used as a good basis for a motion to stay a patent infringement lawsuit. (Sharer & Mauk, 2008; Heyman, 2005)

A disadvantage of an interference proceeding is that the BAI may cancel one or more claims of the company's own pending application and give an even stronger position to the other party in a subsequent infringement litigation. Also, the interference is more expensive than a reexamination procedure costing generally less than \$1,000,000. (Sharer & Mauk, 2008; Heyman, 2005)

### **3.7.3. Invalidation via court**

A granted patent is always presumed to be valid, but it can be found invalid if it does not meet the requirements of patentability described in United States Code, Sections 101-103 of title 35 (described in chapter 3.5) or due to deficiencies in the specification and claims, as specified in United States Code Sections 112 of title 35 (Appendix 14), or for failing to comply with the requirements of reissue as defined in United States Code Sections 251 of title 35 (Appendix 15). (Hoyng & Eijsvogels, 2007; Grossman & Hoffman 2005, pp. 995-1015)

Validity of a granted patent is most often challenged in response to infringement lawsuits and therefore the same court will analyze and decide on both validity and infringement. All invalidity actions require the patent challenger to prove its case by clear and convincing evidence. The Supreme Court has characterized clear and convincing evidence as evidence which produces in the mind of the trier of fact an abiding conviction that the truth of the factual contentions is highly probable. The most common invalidity defenses are those based on prior art. The claims of the patent are anticipated under United States Code, Sections 102 of title 35 (Appendix 10), when a single prior art reference discloses every limitation of the claimed invention, either explicitly or inherently. To establish anticipation, one must identify the elements of the claims and determine their meaning in light of the specification and prosecution history. (Hoyng & Eijsvogels, 2007; Grossman & Hoffman 2005, pp. 995-1015)

The deficiency defense (Appendix 14) focus is different from the prior art defenses. These invalidity defenses are established by showing that the specification fails to provide the best mode or an enabling description of the invention or that the claims fail to clearly point out the invention. The reissue requirements (Appendix 15) deny for example double patenting and any enlargement of scope of the claims of the original patent if the reissue was filed more than two years from grant of the patent. The default is that claims must be construed the same whether the purpose is to demonstrate patent infringement or validity of the patent. (Hoyng & Eijsvogels, 2007; Grossman & Hoffman 2005, pp. 995-1015)

Duration of the proceedings including infringement and/or invalidity of the patent takes usually 2-3 years for the full litigation process. The cost of infringement and/or invalidity proceedings are approximately \$1,000,000 – \$25,000,000 in the District Court. (Hoyng & Eijsvogels, 2007)

### **3.7.4. Antitrust**

If the patentee violates the antitrust laws in connection with the use of its patent, an accused infringer may assert an antitrust counterclaim. Conduct that may violate the

antitrust laws include enforcing a patent known to have been obtained through fraud or to be invalid, tying the purchase of an unpatented good to a license under a patent, or using the patent to violate the antitrust laws in any other way. Antitrust counterclaims in patent cases are most commonly brought under the Sherman Antitrust Act (USC title 15 sections 1-7), section 2 (Appendix 16) which prohibits acquisition or maintenance of monopoly power through anticompetitive conduct. (Grossman & Hoffman 2005, pp. 1019-1024; Mueller 2006, pp. 370-380)

Patents have been mistakenly viewed as “monopolies”, such that accused infringers of patents have asserted that patent owner’s enforcement of their “monopoly” rights represented a violation of the antitrust laws. The law further forbids contracts or conspiracies in restraint of trade and monopolization or attempts to monopolize. The monopoly can be proven by showing the possession of a monopoly power in the relevant market and the willful acquisition or maintenance of that power as opposed to growth or development. The courts have been reluctant to impose the penalties on companies that have gained substantial market power without having engaged in conduct that otherwise violates the antitrust laws. The law does not aim to penalize companies that have succeeded because of superior foresight and skills. As the antitrust defense will be heard by the same court where the patent infringement and invalidation action is handled, the cost and duration of the proceedings are approximately the same. (Mueller 2006, pp. 370-380; Teece 2000, p. 182)

### **3.7.5. Patent misuse**

Patent misuse defense can be brought up in a patent infringement litigation case if the accused infringer can show that the patentee has impermissibly broadened the scope of the granted patent with anticompetitive effect. A successful result of this defense tactic is that the enforcement of the patent is barred until the misuse is purged. The misuse must be pleaded in any action involving validity or infringement. However, misuse often accompanies an antitrust claim. So that even if the patentee’s act may not be violating the antitrust law, it may still constitute patent misuse. Misuse focuses primarily on the patentee’s behavior in expanding the scope of its rights beyond the statutory patent grant, while antitrust measures the impact of that behavior on the marketplace. As the patent misuse defense will be heard by the same court where the patent infringement and invalidation action is handled, the cost and duration of the proceedings are approximately the same. (Grossman & Hoffman 2005, pp. 1024-1029; Mueller 2006, pp. 355-362)

### **3.7.6. Patent exhaustion**

The United States views the patent exhaustion in a more restricted way than the European Union. Where the European Union is applying a community-wide exhaustion,

the United States is applying a domestic exhaustion. The domestic exhaustion means that after the patentee or another authorized party sells a product in the domestic market, the patentee has no longer any enforceable right to control the disposition or profit from the subsequent resale of the same item within the domestic market. As the patent exhaustion defense will be heard by the same court where the patent infringement and invalidation action is handled, the cost and duration of the proceedings are approximately the same. (Mueller 2006, pp. 439-440)

### **3.7.7. Inequitable conduct**

The patentee is under a duty of candor in dealing with the USPTO and inequitable conduct is a breach of that duty. The USPTO has revised its applicable regulations over the years, so it is important to identify the rule that was in effect when the alleged inequitable conduct occurred. If the inequitable conduct is proven, the patent is unenforceable. The inequitable conduct defense process involves providing two threshold elements: (1) materiality of undisclosed information and (2) intent to deceive the patent examiner. Once materiality and intent are established, the court performs a balancing test and considers all circumstances before deciding on inequitable conduct. (Grossman & Hoffman 2005, pp. 1015-1019)

Finding information or material known by the patentee, whom the reasonable examiner would have considered important in deciding whether to grant the patent, is one task that the accused infringer must come up with. The intent to deceive a patent examiner with the undisclosed material or information follows after that. Publications raised by examiners in other countries are a usable source for finding any such evidence. As the inequitable conduct defense will be heard by the same court where the patent infringement and invalidation action is handled, the cost and duration of the proceedings are approximately the same. (Grossman & Hoffman 2005, pp. 1015-1019)

### **3.7.8. Laches and equitable estoppel**

The laches defense can be used in situations where the patent owner delays bringing the infringement suit for more than six years after the date the patent owner knew or should have known about the infringing activities done by the defendant (Mueller 2006, pp. 339-342). By using the laches argument, the accused infringer can stop any recovery of damages relating to patent infringement occurring prior to the filing of the infringement action (Mueller 2006, pp. 339-342). Two requirements need to be fulfilled in order for the defendant to use the laches defense. These requirements are according to Grossman & Hoffman (2005, p. 1030):

1. Unreasonable and inexcusable delay by the plaintiff in bringing the patent infringement suit; and

2. The defendant was materially prejudiced due to the plaintiff's delay.

The material prejudice can take a form of evidentiary prejudice, such as loss of documents and recollections of witnesses over time. The prejudice can also be economic, as where the defendant has encountered change in its economic position during the delay period. For example, the defendant has made substantial investment in manufacturing facilities needed to produce the infringing product before the patent infringement suit was filed. (Grossman & Hoffman 2005, p. 1030)

The scope of defense is a bit different in equitable estoppel, than in laches (Mueller 2006, p. 343). In equitable estoppel the focus is not on the plaintiff's unreasonable delay in suing, but rather on the unfairness of the plaintiff's actions in misleading the defendant into believing that it would not be sued and the defendant's reliance on it (Mueller 2006, p. 343). The required elements of equitable estoppel according to Grossman & Hoffman (2005, p. 1030) are:

1. The plaintiff misleads the defendant into reasonably inferring that the plaintiff does not intend to enforce its patents against the defendant, and
2. The defendant relies on the plaintiff's misleading conduct, and
3. Due to its reliance, the defendant will be materially prejudiced if the plaintiff is allowed to proceed with its infringement claim.

If the equitable estoppel defense is sustained, the result is that the plaintiff's infringement action is completely barred. Thus the penalty is considerably more severe than that for laches. As the laches and equitable estoppel defenses will be heard by the same court where the patent infringement and invalidation actions are handled, the cost and duration of the proceedings are approximately the same. (Grossman & Hoffman 2005, p. 1030; Mueller 2006, p. 343)

### **3.8. Chinese patents**

Compared to western countries, China has protected intellectual property only for a relatively short time. In 1984, China passed its first patent law that helped to create a similar patent system as used in Europe and Japan. A first amendment to the law was done in 1992, when the scope and length of the patent protection were extended. In 2000, the Patent Law was again amended in order for China to fulfill its obligations under TRIPS (Trade-Related Aspects of Intellectual Property Rights) and to become a member of the World Trade Organization (WTO). In accordance with TRIPS requirements, the amendments provided patent holders with the right to obtain a preliminary injunction against the infringing party before filing a lawsuit. The law also stipulated standards to compute statutory damages. In 2008, the patent law was

amended again to be more in line with other developing countries. (Hu & Jefferson, 2009)

After the 2000 patent law amendment, invention patent applications from both domestic and foreign inventors have grown at an annual rate of 23%. Several reasons for this patent explosion can be found, such as China's intensification on R&D and foreign direct investment, but the most significant has definitely been the China's patent law amendments. (Hu & Jefferson, 2009)

The State Intellectual Property Organization (SIPO) has the administrative control of patents and utility models. SIPO is responsible for examination and approval of IPR, interpretation of IP laws, supervision of IP activities and administrative settlement of IP disputes. (Liu, 2005)

The SIPO grants three types of patents: invention patents, utility models and design patents. The invention patents, herein called patents, have 20 year protection and the following patentability criteria (Cohen & Zhu, 2008; SIPO, 2006):

1. Novelty
  - Mixed Novelty for patents filed before Oct 1, 2009
  - Absolute novelty for patents filed on or after Oct 1, 2009
2. Inventiveness
3. Usefulness

Mixed Novelty means that a printed publication anywhere in the world destroys novelty, but oral disclosure or prior public use is novelty destroying only if it took place in China. The new patent law (effective as of October 1, 2009) is congruent with the European Patent system, requiring an absolute novel requirement, meaning that prior public use anywhere in the world is considered as novelty destroying. Inventiveness means that the invention has prominent and substantive distinguishing features and represents a notable progress or improvement. Usefulness means that the invention can be made or used and can produce positive results. (Cohen & Zhu, 2008, SIPO, 2006)

China also applies with the First-to-File rule, which is similar to that used by the European Patent Convention. However, a grace period concept is used in China as in the United States, meaning that the invention does not lose its novelty so long as an application is filed within six months of the occurrence of a triggering event, which includes the following:

1. The invention was first exhibited at an international exhibition sponsored or recognized by the Chinese Government;

2. The invention was first made public at a prescribed academic or technological meeting;
3. The invention was disclosed by any person without the consent of the applicant  
(Cohen & Zhu, 2008, SIPO, 2006)

The patentable subject matter under Chinese law means any new technical solution of

- 1) A product;
- 2) A process; or
- 3) Improvement of the product or process.  
(Cohen & Zhu, 2008)

The subject matter excluded from patentability are:

- Any invention-creation that is contrary to the laws of the state or social morality or that is detrimental to public interest
- Scientific discoveries
- Rules and methods for mental activities
- Method for the diagnosis or for the treatment of diseases
- Animal and plant varieties
- Substances obtained by means of nuclear transformation.  
(Cohen & Zhu, 2008, SIPO, 2006)

### **3.9. Chinese patent infringement actions**

Even if China has established intellectual property laws that generally meet international standards, weak enforcement continues to frustrate efforts to protect IP in China. Piracy and counterfeiting levels continue to be at a high level and impact products, services, brands and technologies in many types of industries. (Greguras, 2007)

Historically, China's culture perceived copying and imitation as an effective way of learning, and monopoly of knowledge was therefore disagreeable to the moral standards in China. Confucian ethics may have had an influence on the people and how they advocate that copying is widely practiced as a legitimate means of learning and sharing. (Yang, 2005)

Furthermore, before recent patent reformation, all patents were owned by the government and could be shared by any company that was willing to use them. This was even encouraged by the government and this might be one reason why Chinese companies even nowadays think that intellectual property is there for anyone to use. The

recent media exposure of intellectual property infringement and governmental publicity has however increased people's awareness about the significance of intellectual property. (French, 2005; Yang, 2005)

The people's courts of China are responsible for the judicial enforcement of intellectual property in China. More specifically, invention patent litigation is usually first brought to the Intermediate People's Courts in provincial cities where the alleged infringers reside or where the infringement has occurred. Appeal from the Intermediate People's Court decision can be filed with the High Court within 15 days (if the party is Chinese) or within 30 days (if the party is foreign) after service of the intermediate courts decision. A petition from the High Court decision can be filed to the Supreme Court, requesting a retrial. It is entirely up to the Supreme Court to decide whether to accept the petition. Any such petition must be filed within two years after a court decision becomes legally effective. Figure 12 shows the Chinese court system for infringement actions. (Yang, 2003; Hoyng & Eijsvogels, 2008)



Figure 12. Chinese court system

When a court has accepted a lawsuit, it will serve the defendant the complaint. After being served, the defendant is required to file an answer to the court within 15 days (if the defendant is Chinese) or within 30 days (if the defendant is foreign). What is important for the prescribed time period is that any request for stay of the patent infringement proceedings should be filed within the time period to enable the court to consider the request under Supreme Court provisions. An infringement action will last between 6 and 18 months in the first instance, if not stayed, and will cost approximately \$50,000 – \$150,000. (Bai et al, 2007; Hoyng & Eijsvogels, 2008)

As the intellectual property law and its enforcement are still relatively new in China, it is quite risky, especially for foreign companies to file infringement suits in China against Chinese companies. Lawyers who represent foreign companies in intellectual property disputes in China have discovered that there are major loopholes in Chinese law and in the patent system. The local and provincial governments sometimes subsidize patent filings for local companies and advice them on how to beat foreign claims of infringement. As Chinese lawyer Xian Wang expressed the situation, “Once upon a time, the counterfeiters in China ran away when you came after them. Today they don't run away. Indeed, they stay put and they sue us. More and more Chinese

companies are taking so-called legal approaches, taking advantage of serious weaknesses in the Chinese legal system”. (French, 2005)

### **3.10. Defensive methods in China**

#### **3.10.1. Invalidation**

Unlike Europe, China does not have a procedure for opposing patents. Instead, the only way to challenge a granted patent is by requesting patent invalidation. This is done by filing a petition in writing to the Patent Re-examination Board of the SIPO, which will handle the requests and make a decision regarding the validity. This differs significantly from other countries, where the invalidation procedure is handled by the judiciary. In fact, it is comparable to the reexamination procedure in the United States. In China, the judiciary does not admit invalidation requests. An appeal against the decision of the patent re-examination board, however, can be made to the judiciary, in compliance with the mandatory rules under TRIPS. The appeal to the people’s court must be made within three months after receiving the notification of the decision. (Cohen & Zhu, 2008)

The petition should include the grounds of invalidity and supporting evidence. Any supplemental grounds and evidence can be filed within one month from the date of filing the petition. Although many forms of evidence are accepted by the Patent Re-examination Board, documentary evidence with an unambiguous publication date would be the most reliable for the invalidation proceedings. (Cawthorn, 2008; SIPO, 2006)

The grounds for invalidity can be divided into two broad categories, namely substantive and technical grounds. (Cawthorn, 2008; SIPO, 2006)

1. Substantive grounds
  - Non-patentable subject matter
  - Lack of novelty, inventiveness or practical utility
2. Technical grounds
  - Added subject matter
  - Insufficient disclosure of description
  - Claim lacking support
  - Claim lacking clarity and/or succinctness
  - Double patenting
  - Proceedings

Non-patentable subject matter was identified already in China patents chapter 3.8. Due to the recent modifications of the patent law, the absolute novelty requirement applies to patents filed on or after October 1, 2009. Therefore, the invalidity arguments can not be

based on oral disclosure or prior public use which took place outside of China for patents filed before October 1, 2009. But a printed publication published anywhere in the world destroys novelty of patents filed at any point of time. (Cawthorn, 2008; Cohen & Zhu, 2008)

Also, inventiveness can be used as a ground for invalidation. In this case, the invention does not possess outstanding substantive characteristics and notable improvement over the state-of-the-art. In practice, a three-step test is adopted during invalidation proceedings: (1) ascertaining the closest prior art, (2) identifying whether there are any differences between the invention and the closest prior art, and (3) determining whether any differences are obvious to a person skilled in the art. (Cawthorn, 2008; Cohen & Zhu, 2008)

Technical grounds offer usable arguments for invalidation as well. The patent application should not add subject matter that extends beyond the content of the application as filed, nor should the claims be amended in a way that limits the scope of protection using a feature which has not been described in the description. Double patenting is also a common practice in China. It is allowed to file both utility model patents and invention patents of the same invention, but once invention patent is granted, the applicant should withdraw the utility model patent in order to prevent double patenting. (Cawthorn, 2008; Cohen & Zhu, 2008)

From the various grounds available for use, an attack on the lack of novelty and/or inventiveness, and added subject matter would probably have the most weight, especially given the very limited scope of allowable amendments available during invalidation proceedings. The patentee has very limited flexibility to make amendments to the patent, only amendments to delete claims, to combine claims or to delete alternative features of a claim are allowed, provided that there is no broadening of the original claims after amendments. (Cawthorn, 2008)

The Patent Re-examination Board can make one of the following decisions: a) the patent is totally invalidated, b) the patent is partially invalidated, or c) the patent is valid. In 2007, there were 354 petitions for patent invalidation filed in China and based on unofficial estimates, about 50-60 % of the petitions were successful. (Cawthorn, 2008)

Using invalidity as a defense for infringement action is a normal and popular action, but it should be noted that the infringement court is not obligated to stay the infringement proceedings until the invalidation action has been resolved. The request for invalidation should be filed within 15 days (if defendant is Chinese) or within 30 days (if defendant is foreign) after being served with the complaint in order to even have the chance for getting the infringement proceedings stayed. It is entirely up to the court to decide

whether or not to grant the request for stay. The Supreme Court has provided general rules on how a court should decide on this. If the case relates to a utility model patent or a design patent, the court generally should rule to stay, waiting for the result of the invalidation proceedings. Whereas, if the case relates to an invention patent, the court may decide not to stay the infringement proceedings. (Bai et al, 2007; Hoyng & Eijsvogels, 2008)

For a invention patent the court would examine the merits of the defendant's request for invalidation and all the evidence before rendering a decision to stay the proceedings. Generally, if the novelty of the invention patent is challenged with solid evidence, the court may rule to stay, otherwise, the court would generally rule to reject the request for a stay. In practice, less than 10% of invention patent infringement cases have been stayed in light of invalidation proceedings. (Bai et al, 2007; Hoyng & Eijsvogels, 2008)

It usually takes about 6 to 36 months to complete patent invalidation proceedings and it will cost approximately \$15,000 – \$25 000. Therefore, if there is a parallel patent infringement and invalidation case, which is not stayed by the court, usually the infringement proceedings complete before the invalidation proceedings. It should also be noted that even if the patent is found invalid, it will not have retroactive effect on any judgment on patent infringement that has been pronounced and enforced by the people's court. This is one of the main reasons why defendants usually make great efforts to try to have the infringement proceedings stayed. The invalidation action can also be filed if no litigation action is ongoing, and in that case there is no deadline for filing it. (Cohen & Zhu, 2008; Hoyng & Eijsvogels, 2008; Antila, 2009)

### **3.10.2. IP abuse and anti-monopoly issues**

While a patent grants a monopoly that enables the patentee to prevent others from exploiting the innovation, a competition law (i.e., China's antimonopoly law), aims to prevent monopoly situations and to safeguard fair market competition. The TRIPS agreement sets up general principles for dealing with IP abuse and anticompetitive activities, but left it for each member state to develop specific law and policies to define the concepts and to regulate the activities of IPR holders when commercializing their intellectual property products and services. China's law was amended to include the principles only two years ago and it came into effect on August 1 2008. Therefore, it is yet unclear how the defense can be applied in real situations. (Tian, 2009; Nicholson & Liu, 2008)

From Article 8 of the TRIPS agreement (Appendix 17) it is clear that the scope of IP abuse is very broad, and the Chinese wording of the law is similarly vague. Therefore, China may consider conduct of IPR holders to be abusive regardless of whether the enterprise in question dominates the market or not, and regardless of whether there is an

anticompetitive use. This may serve as a sound defense to patent infringement claims, especially for Chinese domestic companies. (Tian, 2009; WTO, 1994)

The anti-monopoly law may have similar effects. Many multinational companies fear that Chinese companies may restrain foreign IP holders from enforcing their intellectual property rights against them by claiming that the bringing of the infringement action against them constitutes an abuse of these asserted rights or a restriction of market competition. The claim of IP abuse or monopolistic position of a third party can be filed to the Intermediate Court. If the complaint is done when there is patent infringement litigation ongoing it may stay the infringement proceedings until the anticompetitive issue is investigated. As the IP abuse and anti-monopoly defense will be heard by the same court where the patent infringement action is handled, the cost and duration of the proceedings are approximately the same. (Tian, 2009; Nicholson & Liu, 2008)

### **3.10.3. Compulsory licenses**

A compulsory license may be requested by any party who has been unable to obtain a voluntary license on reasonable terms within a reasonable period of time. Request for a compulsory license can be filed to the SIPO with proof that the applicant has not been able to conclude a licensing contract on reasonable terms with the patentee. The compulsory license can also be requested in situations where a later filed patented invention (owned by the compulsory license requestor) is technically more advanced than another earlier filed patented invention and the exploitation of the later filed invention is dependent on the exploitation of the earlier filed invention. In that case, the SIPO may grant a compulsory license to exploit the earlier filed invention. (Grubb, 2008; Cohen & Zhu, 2008)

If the compulsory license is granted, the licensee is obligated to pay the patentee a reasonable exploitation fee. The amount of fee is decided between the parties through consultation, but in case they are unable to reach an agreement, the SIPO will give a ruling of it. In practice, there have not been any compulsory license requests after 1985 (when the patent law became effective) based on unsuccessful licensing negotiations, so it is unknown how the SIPO would review and decide on such an application. Compulsory licenses based on the dependency of an earlier filed and later filed invention has never been granted in practice, perhaps because it is hard to measure the advancement between the two inventions. As the compulsory license defense will be heard by the same court where the patent infringement action is handled, the cost and duration of the proceedings are approximately the same. (Hoyng & Eijsvogels, 2008; Cohen & Zhu, 2008)

#### **3.10.4. Prior use**

If the defendant is able to demonstrate that they had made necessary preparations for making and using the patented invention in China before the priority date of the patent, the defendant may continue to utilize the patented invention without being deemed to have infringed the patent. The Beijing High Court has developed a number of tests to determine whether there is a prior use and put some limitations on the prior use:

- “Necessary preparations” mean that product design drawings and manufacturing processes have been completed and special equipment and moulds have been prepared, or testing manufacturing has been completed;
- The right of prior use is limited to the original scope only, which means that it should be limited to the actual production volume or production capability before the filing date of the patent at issue. Exceeding the original scope constitutes infringement of the patent;
- The prior product or process was obtained by the prior user’s own independent research or by other legal means, and should not be obtained from the patent holder through inappropriate means; and
- The prior user can not license or transfer the prior technology to others, unless it is transferred together with the prior use’s company.  
(Hoyng & Eijsvogels, 2008)

As the prior use defense will be heard by the same court where the patent infringement action is handled, the cost and duration of the proceedings are approximately the same. (Hoyng & Eijsvogels, 2008)

#### **3.10.5. Patent exhaustion**

China is one of the few countries in the world to recognize international exhaustion. Meaning that the patent owner’s rights are extinguished at the first authorized sale of a patented item anywhere in the world, and that subsequent importation of that same item into another country cannot be legally wrong. Meaning that when, for example, a company sells products in Africa at a discounted price any third party can buy the products and import them back to the company’s home country and sell the same items there. (Mueller 2006, pp. 441-442)

The international exhaustion system is usually supported by the fact that consumers benefit from the price competition created by parallel imports. International exhaustion is a controversial idea to the traditional thinking that patent rights are merely national, not international, in scope and that such rights begin and end at national borders. As the patent exhaustion defense will be heard by the same court where the patent infringement

action is handled, the cost and duration of the proceedings are approximately the same. (Zhu, 2009; Mueller 2006, pp. 441-442)

### **3.10.6. Declaration of non-infringement**

Declaratory judgment on non-infringement can be requested in China, according to Bai et al (2006), based on one of the following grounds:

- Where a person who is making or is going to make a product or use a process requests a patentee to determine that his act does not or will not infringe the patentee's patent, and in a reasonable manner, provides technical documents and information necessary for making the determination but the patentee fails to reply within a reasonable time limit or refuses to make a non-infringement determination, the person may bring an action in a people's court to request a declaration that his act does not or will not constitute infringement of the patent at issue.
- Where a patentee or an interested party sends a warning letter accusing infringement to another person, the warned party may bring an action in a people's court to request a declaration of non-infringement
- Where an act of warning by a patentee or an interested party impinges upon the legal rights of the warned party, the warned party may also request a people's court to order the warning party to cease impingement, compensate for damages, eliminate ill influence, and/or make an apology.

This form of defense has been available in China since 2002, and it can have many advantages to the defendant especially if it is used prior to infringement litigation. By filing a non-infringement declaratory judgment in China, the defendant can select the most convenient intermediate court, requiring that the later filed infringement action also take place at the same court even if the plaintiff files it with another intermediate court. As the declaration of non-infringement defense will be heard by the same court where the patent infringement action is handled, the cost and duration of the proceedings are approximately the same. (Bai et al, 2006; Hoyng & Eijsvogels, 2008)

### **3.11. Comparing the defensive methods**

Table 3 summarizes the jurisdictional availability of the defensive methods presented earlier. Category "Europe" has been used if the method available for European patent is handled in a centralized way (via EPO). On the other hand, when the method available for European patents is handled on national level using national legislation, the countries having the method available have been identified. For the United States and China it has not been separately identified if the method is available via the national patent office or via court.

Table 3. Defensive methods available in each country

	Europe	Germany	France	United Kingdom	United States	China
Opposition	X					
Intervention	X					
Third party observations	X					
Patent revocation		X	X	X		
Compulsory licenses		X	X	X		X
Patent exhaustion		X	X	X	X	X
Prior use		X	X	X		X
Declaration of non-infringement			X	X		X
Reexamination					X	
Interference action					X	
Invalidation					X	X
Antitrust					X	
Patent misuse					X	
Inequitable conduct					X	
Laches and equitable estoppel					X	
IP abuse and antimonopoly issues						X

As can be seen from the table above, there are big jurisdictional differences on which defensive methods are available. In addition to the availability of a method, the defending party has to also consider the positive and negative effects of each of the methods, and the possibility to use several methods in parallel. Some of these aspects are discussed in the following.

The person or company filing third party observations for a European patent will not become a party of the proceedings and can therefore not appeal the decision made by the examiner. Often third party observations lead to a stronger patent because the patentee can amend the claims or because the prior art presented by the observer is now been considered by the examiner when allowing the patent. After the prior art has been considered by an examiner, it is unlikely that the use of the same prior art will be

successful in revocation or opposition proceedings. In general, it is better to bring up any such observations in opposition or revocation actions.

Opposition gives an opportunity to attack a European patent on a central basis with the objective of having it revoked or limited by amendment for all the countries to which it applies, whereas national revocation actions can only revoke or limit the patent scope in the specific country. If there is a need for invalidating a European patent by a revocation action in more than one of the designated countries, the cost will be much higher than if the European patent is opposed. It should also be noted that in different countries the patentability criteria can be interpreted differently, therefore prior art used to revoke a patent in one country might not be as useful in another country and vice versa. In a revocation action the final decision is done by a judge, who may or may not have a technical background which could also influence the ruling. On the other hand, the EPO Opposition Division has a technical background and experience on interpreting the scope of the patent with respect to the prior art. Therefore, opposition and intervention are usually more convenient methods than revocation action.

Compulsory license actions are extremely rare, both in Europe and China, and the grant of a compulsory license is even rarer. Therefore, the action cannot be considered as a viable solution.

A prior use argument is usually brought as a defense in an infringement action in Europe and China in case the defendant has no better methods for defending itself. The disadvantage of using a prior use defense is that the use of an invention for infringing a product or method can be limited to the specific type it was when the invention was first filed, meaning that modifications can not be done to it later.

Patent exhaustion is available in Europe, China and United States, but the grounds for applying it vary in each country. The United States applies a domestic exhaustion, European Union applies a community-wide exhaustion and China applies international exhaustion. Patent exhaustion is a relatively risk free defense method, but it can only be applied by resellers and importers.

Declaration of non-infringement is quite usable in Europe, because it can be used to get a stay on infringement proceedings also in countries where the declaratory judgment for non-infringement is not even available. In China the grounds for applying declaratory judgment are significantly lower than in Europe. By applying the declaration of non-infringement in China, before the plaintiff files a patent infringement action the defendant can select which court would be most beneficial for them, thus putting the plaintiff in a more disadvantaged position in pursuing its infringement claims. This makes it a very attractive defense method to be used in China. The disadvantage of using the declaration of non-infringement action in Europe and China is that if it is

allowed, it will only protect the defendant's products as they were at the time of judgment.

Ex parte reexamination in United States is comparable to the third party observations method in Europe, as they both have the same disadvantages of not allowing an access to the proceedings and that the requestor is not entitled to appeal the decision. Whereas the inter partes reexamination can be compared to the opposition method since in both cases the requestor is able to participate in the proceedings and is entitled to appeal the decision. This makes the inter partes reexamination a more appealing method to use than the ex parte reexamination. The downside of this defensive action is that the patent in question will become stronger if the re-examination material and the arguments made against it are not good enough to get the patent invalidated. This is true also for patent oppositions.

An interference proceeding can be an appealing method to use in the United States, especially if the requestor has filed a similar patent application earlier than the third party. Interference proceedings are usually much shorter than reexamination and invalidation proceedings, so the decision can be received in a relatively short time. However, this method has its disadvantages as well, since the requestor's own patent may be jeopardized in the proceedings. In some cases the risk is worth taking as the USPTO technical experts in interference proceedings usually have required knowledge to analyze the patents, whereas invalidation proceedings with a non-technical judge can have unpleasant results.

Invalidity of a patent is commonly used in United States as a defensive argument in patent infringement cases. The good thing is that the same court will analyze both infringement and validity of the patent, making sure that the scope of the claims will be construed the same for both evaluations. The only disadvantage is that the judges might not have the needed technical experience to interpret the patent and infringing product or process. Therefore the inter partes reexamination or interference methods could very well be better defenses for infringement accusations.

Antitrust issues relating to the monopolization have rarely been judged by the courts as the intention is not to penalize companies that have succeeded because of growth and development by their superior skills, unless it can be proven that the monopolistic position was gained by engaging in conduct that violates the antitrust laws. Therefore this defense can not usually be considered as a viable defense method.

Patent misuse accompanies the antitrust claim on many occasions. Whereas the patent misuse focuses primarily on the patentee's behaviour in expanding the scope of its rights beyond the statutory patent grant, the antitrust measures the impact of that behaviour. Hence, often if the patentee's acts don't violate the antitrust laws, they may

still constitute a patent misuse, making it a more viable defense method than the antitrust defense.

Inequitable conduct can sometimes follow with invalidation proceedings if it is found out that the patentee has intended to deceive the patent examiner by not disclosing relevant information. The problem, however, is to locate such material and to prove the conduct.

Laches and equitable estoppel can be used in situations where the patentee has delayed bringing the infringement litigation. In laches the defense concentrates to the delay itself whereas the equitable estoppel focuses on the misleading acts of the patentee by pretending that they will not enforce their patent rights against them. In laches the method can only be used to stop recovery of damages prior to the infringement proceedings, but in equitable estoppel the method can be used to block the infringement action completely.

The invalidation method in China is, unlike in other countries, handled by the patent administration, even though the possible appeal will then take place in court. The patent infringement and invalidation proceedings in China are close to those in Germany, where the two are also handled separately. This puts more pressure on the defendant to take good care of the invalidation proceedings in order to first get the infringement litigation stayed. However, the advantage in China is that the patentee has very limited flexibility to amend the patent claims in the case where good prior art is presented. It is generally better to raise any defenses in the infringement litigation than via other means, as the defenses will be handled together with the infringement proceedings. This could save the defendant from any requirements to pay damages based on infringement judgment if the patent is found invalid later.

IP abuse and antimonopoly defense can be used to safeguard fair market competition. Because the anticompetitive law is quite recent in China, it is hard to predict how it can be used as a defense argument in patent disputes, but in case the plaintiff is a multinational company it might be worth trying to utilize this defense. Furthermore, it might not even have to be a company having a market dominant position in order to use this defense and the action may stay any infringement proceedings until the issue is investigated.

In all countries, the defendant can plead an unlimited number of defenses in infringement litigation, meaning that it does not have to rely on only one of the defensive methods available. But in some jurisdictions, if a method available via the patent administrative is used, that could exclude some of the methods available via court proceedings. For example, in Germany an open opposition will exclude any national revocation action for the same patent.

## 4. CONCLUSIONS

### 4.1. Results of the study

The aim of this thesis was to discover different methods for defending against third party patents in the most litigious countries in the world. Based on this aim, research questions were defined. The purpose of this chapter is to evaluate the results of the study by summarizing the presented issues and making conclusions to answer these research questions:

What role does the company's intellectual property strategy play in relation to the likelihood of getting into a patent dispute?

A value hierarchy developed by Davis and Harrison (2001) can be used to identify five levels of intellectual property strategies. Each level represents a different expectation that the company has about the contribution that its intellectual property function should make for supporting the company's vision and strategy. Achieving a higher level in the value hierarchy will decrease the likelihood of patent litigation from competitors. On the highest level, the company should be well protected from any patent litigation. However, this works only in theory as only a few, if any, companies have ever reached the highest level. Furthermore, as the protection from third party patents will be based on the company's own patent portfolio, it will not protect from patent trolls. Therefore, it can be concluded that the intellectual property strategy can protect against competitors but not necessarily against patent trolls.

What are the defensive methods available to be used against a third party patent, and what are the prerequisites for their use?

Defensive methods available in Europe, United States and China were presented in chapters 3.4, 3.7, and 3.10. Criteria for using them were defined in the same chapters. A cross table identifying the available methods in each country have also been created and presented in chapter 3.11.

Compared to each other, what are the advantages and disadvantages of the defensive methods?

The advantages and disadvantages of the methods were presented in chapter 3.11. The tables below (Tables 4 – 15) summarize the advantages and disadvantages of each

available method and the prerequisites for their use. It provides guidelines for selecting defense methods to be used, but it should be noticed that the use of any defensive method should be investigated case by case in order to determine its effect on the efficient resolution of a patent dispute.

Table 4. Defensive methods available for European patents

Methods for European patents	T i m i n g				Additional Criteria	Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation								
<b>Opposition</b>		X	X	X	Within 9 months after the grant	EPO	Appeal to EPO Board of Appeal	Grounds for the action are defined in EPC Article 100 (Appendix 2)		36-60 months	€80,000-€120,000	+ If successful, patent is revoked or limited by amendment for all the countries to which it applies + Broad range of grounds to use + EPO has technical experts to study the case
<b>Intervention</b>		X		X	1) After opposition period has expired, but opposition is pending, <b>and</b> 2) Within 3 months after being served with an infringement proceedings	EPO	Same as for opposition	Same as for opposition	Infringement proceedings of the patent have been instituted against the person or company	Same as for opposition	Same as for opposition	Same as for opposition

Table 5. Defensive methods available for European patents

Methods for European patents	T i m i n g				Additional Criteria	Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation								
<b>Third-party observations</b>	X	X	X	X	1) After patent publication, while the patent is pending, <b>or</b> 2) During opposition while the opposition is still pending and no decision has been made.	EPO	No	Grounds for the action are defined in EPC Articles 52-57 (Appendix 1)		6-60 months	€1,000- €12,000	+ No official cost for filing observations - No possibility to appeal the decision - Observer can not participate in the examination, appeal of opposition proceedings
<b>Revocation action</b>		X	X	X	Any time after the patent has been granted	National courts	Appeal to national courts	Grounds for the actions are defined in EPC Article 138 (Appendix 6)	Each jurisdiction can make a different ruling	Germany: 12-18 months France: 16-25 months UK: 9-14 months	Germany: €45,000- €10,000 France: €80,000- €200,000 UK: £350,000- £1,000,000	+ Same court will decide both infringement and invalidity of the patent in United Kingdom and France - Same court will not decide both infringement and invalidity of the patent in Germany - Judges making the decision are not necessarily technical experts - Huge costs

Table 6. Defensive methods available for European patents

Methods for European patents	T i m i n g				Additional Criteria	Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation								
<b>Compulsory licenses</b>		X	X	X	After a reasonable time has passed since the grant of the patent	National courts	Appeal to national courts	Grounds vary in different countries.	License fee will be mandatory if compulsory license is granted	Same as for revocation	Same as for revocation	<ul style="list-style-type: none"> <li>- Limited number of requests made and limited number of compulsory licenses granted</li> <li>- License fee will be mandatory if compulsory license is granted</li> </ul>
<b>Patent exhaustion</b>		X		X	Method brought usually in case of infringement proceedings	National courts	Appeal to national courts	Grounds: patentee has no rights to oppose the free circulation of goods that infringe his patent once the products have been put to market (=inside EU) with patent owners consent	Community-wide exhaustion available in each EU country	Same as for revocation	Same as for revocation	<ul style="list-style-type: none"> <li>+ Risk free defense method</li> <li>- Limited applicability (resellers and importers)</li> </ul>

Table 7. Defensive methods available for European patents

Methods for European patents	T i m i n g				Additional Criteria	Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation								
<b>Prior use</b>		X		X	Method brought usually in case of infringement proceedings	National courts	Appeal to national courts	Grounds vary in different countries.	Possible limitations for the right of use based on country legislation	Same as for revocation	Same as for revocation	- Use of invention can be limited, based on country's legislation
<b>Declaration of non-infringement</b>		X	X	X	Method brought usually in case of infringement proceedings	National courts	Appeal to national courts	Grounds for the actions are that the applicant has applied an acknowledgement for declaration of non-infringement and the proprietor has refused to give it.	Available in UK and France.	Same as for revocation	Same as for revocation	+ Possibility to use declaration of non-infringement applied in one country to stay infringement proceedings in another country - Can only be applied to products and processes as they were

Table 8. Defensive methods available for the United States patents

Methods for US patents	T i m i n g				Additional Criteria	Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation								
<b>Ex parte reexamination</b>		X	X	X		USPTO	No	Grounds are lack of novelty or obviousness	Only printed publications and patents can be used as prior art	<24 months	<\$50,000	+ USPTO has technical experts to study the case - Requestor not entitled to participate the examination procedure - Requestor not entitled to appeal the decision
<b>Inter partes reexamination</b>		X	X	X		USPTO	Appeal to board of Appeals and Interferences	Grounds are lack of novelty or obviousness	Only printed publications and patents can be used as prior art	<24 months	<\$200,000	+ USPTO has technical experts to study the case + Requestor entitled to participate the examination procedure + Requestor entitled to appeal the decision

Table 9. Defensive methods available for the United States patents

Methods for US patents	T i m i n g				Additional Criteria	Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation								
<b>Interference</b>	X	X	X	X	Requestor's own patent application must be filed 1) within one year of the grant of the third party patent <b>or</b> 2) within one year of the publication of the third party application	USPTO BAI	Appeal to Federal Circuit	Requestor must have a pending application claiming same subject matter.		12 months	<\$1,000,000	+ USPTO has technical experts to study the case + Results received relatively shortly - Proceeding can jeopardize the requestor's own patent
<b>Invalidation via court</b>		X	X	X		District Court / ITC	Appeal to Federal Circuit	Grounds are defined in USC 101 (Appendix 8), USC 102 (Appendix 9), USC 103 (Appendix 10), USC 112 (Appendix 12), or USC 251 (Appendix 13)		24-36 months	\$1,000,000-\$25,000,000	+ Scope of claims will be construed the same whether the purpose is to analyse infringement or validity - Judges making the decision are not necessarily technical experts

Table 10. Defensive methods available for the United States patents

Methods for US patents	T i m i n g				Additional Criteria	Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation								
<b>Antitrust</b>		X	(X)	X		District Court / ITC	Appeal to Federal Circuit	Grounds are defined in Sherman Antitrust Act (Appendix 14)		Same as for invalidation via court	Same as for invalidation via court	- Rarely a viable defense method
<b>Patent misuse</b>		X		X		District Court / ITC	Appeal to Federal Circuit	Grounds are that the patentee has impermissibly broadened the scope of the granted patent with anticompetitive effect		Same as for invalidation via court	Same as for invalidation via court	+ More convenient to claim than antitrust

Table 11. Defensive methods available for the United States patents

Methods for US patents	T i m i n g					Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation	Additional Criteria							
<b>Patent exhaustion</b>		X		X		District Court / ITC	Appeal to Federal Circuit	Grounds: patentee has no rights to oppose the free circulation of goods that infringe his patent once the products have been put to market (=inside the U.S.) with patent owners consent		Same as for invalidation via court	Same as for invalidation via court	+ Risk free defense method - Limited applicability (resellers)
<b>Inequitable conduct</b>		X		X		District Court / ITC	Appeal to Federal Circuit	Grounds are that the patentee has intended to deceive the patent examiner by not disclosing all relevant information to him/her		Same as for invalidation via court	Same as for invalidation via court	- Hard to find evidence and to proof the inequitable conduct

Table 12. Defensive methods available for the United States patents

Methods for US patents	T i m i n g					Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation	Additional Criteria							
<b>Laches</b>		X		X		District Court / ITC	Appeal to Federal Circuit	Grounds are following: 1) Unreasonable and inexcusable delay by the plaintiff in bringing the patent infringement suit; <b>and</b> 2) The defendant was materially prejudiced due to the plaintiff's delay		Same as for invalidation via court	Same as for invalidation via court	- Can only be used to stop recovery of damages relating to patent infringement occurring prior to the filing of the infringement suit
<b>Equitable estoppel</b>		X		X		District Court / ITC	Appeal to Federal Circuit	Grounds are following: 1. The plaintiff misleads the defendant into reasonably inferring that the plaintiff does not intend to enforce its patents against the defendant, <b>and</b> 2. the defendant relies on the plaintiff's misleading conduct, <b>and</b> 3. due to its reliance, the defendant will be materially prejudiced if the plaintiff is allowed to proceed with its infringement claim		Same as for invalidation via court	Same as for invalidation via court	+ Can be used to block the infringement action completely

Table 13. Defensive methods available for Chinese patents

Methods for Chinese patents	T i m i n g					Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation	Additional Criteria							
<b>Invalidation</b>		X	X	X	Anytime after the grant of the patent	SIPO Patent Re-examination Board	Appeal to People's Court	Grounds are following: 1) Substantive grounds: non-patentable subject matter, lack of novelty, inventiveness or practical utility. 2) Technical grounds: added subject matter, insufficient disclosure of description, claim lacking support, claim lacking clarity and/or succinctness, double claiming, proceedings		6-36 months	\$15,000-\$25,000	+ The patentee has very limited flexibility to amend the claims - Decision will not have retroactive effect on judgements made on patent infringement
<b>IP abuse and antimonopoly issues</b>		X	(X)	X	Defense for infringement	Intermediate Court	Appeal to High Court	Grounds are following: 1) Anticompetitive agreements made by the third party, <b>or</b> 2) Abuse of dominant market <b>or</b> 3) Patent misuse		6-18 months	\$50,000-\$150,000	+ Can be strong defense against multinational companies + May stay infringement proceedings - Relevant law came into effect only a year ago

Table 14. Defensive methods available for Chinese patents

Methods for Chinese patents	T i m i n g					Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation	Additional Criteria							
<b>Compulsory licenses</b>		X	X	X	After a reasonable time has passed since the grant of the patent	SIPO	Appeal to High Court	Grounds are following: 1) Requestor has been unable to obtain a license on reasonable terms within reasonable period of time, <b>or</b> 2) patent owned by requestor is technically more advanced than another earlier filed patented invention and the exploitation of their own patent is dependent on exploitation of the earlier filed patent	License fee will be mandatory if compulsory license is granted	6-18 months	\$50,000-\$150,000	- Limited number of requests made and limited number of compulsory licenses granted - License fee will be mandatory if compulsory license is granted
<b>Prior use</b>		X		X	Defense for infringement	Intermediate Court	Appeal to High Court	Grounds are the following: The requestor has made necessary preparations for making and using the patented invention in China before the priority date of the patent		6-18 months	\$50,000-\$150,000	- Use of invention can be limited, based on country's legislation

Table 15. Defensive methods available for Chinese patents

Methods for Chinese patents	T i m i n g				Additional Criteria	Venue	Appeal	Prerequisites	Additional information	Duration of the proceeding	Cost of the proceeding	Advantages / Disadvantages
	Pending Application	Granted patent	Before in litigation	During litigation								
<b>Patent exhaustion</b>		X		X		Intermediate Court	Appeal to High Court	Grounds: patentee has no rights to oppose the free circulation of goods that infringe his patent once the products have been put to market anywhere in the world with patent owners consent		6-18 months	\$50,000-\$150,000	+ Risk free defense method - Limited applicability (resellers and importers)
<b>Declaration of non-infringement</b>		X	X	X		Intermediate Court	Appeal to High Court	Grounds are following: 1) Requestor has asked for acknowledgement for declaration of non-infringement and the proprietor has refused to give it, or 2) The patentee has sent warning letters and accused of patent infringement		6-18 months	\$50,000-\$150,000	+ If filed before infringement litigation, the same court selected by the defendant will handle also the infringement + Grounds for filing are low - Can only be applied to products and processes as they were

## 4.2. Assessment of the study

The aim of the study was to identify defensive methods against third party patents and to discover the dependency between intellectual property strategy and the likelihood of patent disputes. This chapter will assess how these questions were answered and how reliable the conclusions are.

The first research question about the dependency between intellectual property strategy and the likelihood of patent disputes was answered at the end of chapter 3.1, making it a natural step to move on to discuss the available methods. The available methods and their prerequisites were then revealed in chapters 3.4, 3.7 and 3.10. Finally, the chapter 3.11 presents the last research question by identifying the advantages and disadvantages of the methods.

When assessing the study, the collected and used material plays a critical role. The source material for the study was gathered from libraries, such as the Tampere University of Technology library, the University of Tampere library and the Tampere city library. Some of the material was also readily available via colleagues at Nokia Corporation. The best source for most up-to-date information was for example the national patent offices and various journals available via the electronic library at Tampere University of Technology. A lot of information was available so that context was easy to build.

Reliability for the study was ascertained by considering which source materials would be used, and by double-checking arguments from various different sources. The national patent offices usually have the most up-to-date information regarding the available procedures they provide, and they can be considered as a reliable source. Also, the national law can be considered to be a reliable source. However, it can be quite challenging to interpret the national laws and the rules of national patent offices. Therefore, the various journals and books come as a handy tool. They can provide the needed interpretation and the information they provide can always be double-checked from the national laws and rules. When the national laws and rules of the local patent offices were written in some other language than English, the reliability of the information was validated by analyzing several independent sources. Also, the presented legal and procedural facts were reviewed by experts working on those fields.

Some of the gathered information, such as the average costs and duration of the proceedings, were not always available from the journals or books, so in those cases the information was gathered from people working with the issues, which therefore represent the subjective views of the individuals.

Issues that affect the available defensive methods are national and regional laws and rules, which of course change over time. Therefore, especially the rapidly changing intellectual property legislation and environment in China set some challenges to the study. Needless to say that the language issues set some challenges as well, but all in all there was a surprisingly lot of source material available in English as well. It is, however, relevant to raise some criticism here by stating that relying on second hand information is never as reliable as going directly to the source, irrespective of the language.

In the common law countries the precedents played a critical role on how to interpret the law and as time goes by, new precedents will replace the old ones affecting the available methods. Therefore it is critical to update the study based on new precedents and changes in laws and rules, if it will be used as a guideline for determining which methods to use.

The reliability of the study can also be assessed by determining if another researcher would come up with the same results as presented in this study. The conceptual approach for identifying the relationship between the intellectual property strategy and the likelihood of patent disputes is based on one viewpoint on how the strategy can be described. There can very well be other approaches and viewpoints on how the intellectual property strategy is seen, but regardless of them, if the intellectual property strategy is split into actions, the conclusion about the likelihood will remain the same.

The conceptual approach for identifying various methods available is based on hard facts and any researcher would very likely come to the same conclusions. The somewhat hermeneutic approach on analysis the advantages and disadvantages of the various methods makes it a bit more difficult, if not possible, to find out their repeatability, as in hermeneutics approach the results include a lot of interpretations of the researcher. This is one of the reasons why the study is unable to give forthright recommendations based on hard facts what method is the best choice. However, many of the advantages and disadvantages are based on the information sources used to identify the various methods.

All in all, this study has been quite useful for gaining a deeper understanding on the various factors affecting the likelihood of patent disputes and by providing practical tools for tackling any third party patents in various situations. However, it should be noticed that the use of any defensive method should be investigated case by case in order to determine its effect on the efficient resolution of a patent dispute. Furthermore, even if the study concentrated specifically on patents it should be noted that many of the defensive methods presented are usable also for utility models.

### **4.3. Recommendations for further study**

The challenge in a study like this is that the analysis can never be exhaustive. As the laws change and the precedents change the way how the laws are interpreted it would be critical to update the study as well. Furthermore, in common law countries the depth of the analysis could go much deeper by identifying how the laws are interpreted in various situations. But many obstacles always remain, because the usable methods vary based on (1) the patent in question, (2) the market situation, (3) the conducts of the patentee, (4) the accused product or process, and many more variables.

The study could also be broadened by analyzing more countries, as they would probably affect also to the observed advantages and disadvantages of the current methods listed. Furthermore, if language is not an issue the Chinese, French and German literature could bring more value to the study.

If a more empirical approach should be chosen, the methods and their possible synergies could be studied in a more concrete way. But the sample size in such case should be significant to demonstrate when the selected methods work and when they don't work.

## BIBLIOGRAPHY

- Antila, K. 2009. Senior IPR Litigation Counsel. Nokia Corporation. Hong Kong. Interview 6.11.2009.
- Bai, B., Chen, T., Wang, X., Wang, P. 2006. Forum shopping comes to China. *Managing Intellectual Property*. 1 April 2006. [<http://www.managingip.com/Article/622174/Forum-shopping-comes-to-China.html>]. Read 3.11.2009
- Bai, B., Wang, P., Chen T. 2007. How to litigate patents in China. *Managing Intellectual Property*. May 2007 Supplement, pp. 45-48. [<http://www.managingip.com/Article.aspx?ArticleID=1329560>]. Read 22.10.2009
- Bergermann, M., Verhauwen, A. 2008. EU's patent capital. *Managing Intellectual Property*, April 2008, Issue 178. pp. 75-77.
- Beyers, J. 2005. Rise of the patent trolls. *News.com*. 12.10.2005. [[http://news.com.com/Rise+of+the+patent+trolls/2010-1071\\_3-5892996.html](http://news.com.com/Rise+of+the+patent+trolls/2010-1071_3-5892996.html)]. Read 27.10.2009
- Bittner, T. 2008. To oppose or litigate? AIPLA IP Practise In Europe Committee Meeting on 25 January 2008.
- Blair, M.M, Kochan T.A. 2000. *The New Relationship – Human Capital in the American Corporation*. Brookings institution press. 395 p.
- Blumenröder, U. 2007. Claim Construction and Doctrine of Equivalents in Germany. Training course on “Patent Infringement” organized by Management Forum in London on 3 December 2007.
- Brussels Convention. 1968. Convention on jurisdiction and the enforcement of judgments in civil and commercial matter. 27 September 1968. [<http://curia.europa.eu/common/recdoc/convention/en/c-textes/brux-idx.htm>]. Read 3.11.2009
- Cawthorn, C. 2008. Your guide to oppositions worldwide. *Managing Intellectual Property*, Oct 2008, Issue 183. pp. 60-68.
- Charmasson, H. 2004. *Patent, Copyrights & Trademarks for Dummies*. Wiley Publishing. 360 p.
- Chartered Institute of Patent Agents. 2007. *European Patents Handbook*. Second Edition. Sweet & Maxwell, London.
- Clerix, A. 2009. Invalidation proceedings as a counter-attack according to split litigation system. *EPI Information* 1/2009, pp.14-20.
- Cohen, K., Zhu, N. 2008. Patent Practise in China. Management Forum training material for course called “Patent Practise in China” held in London, May 2008.

- Davis, J.L., Harrison S.S. 2001. Edison in the Boardroom – How Leading Companies Realize Value from Their Intellectual Assets. John Wiley & Sons Inc. 210 p.
- Durham, A. 2004. Patent Law Essentials – A Concise Guide. Praeger Publishers. 253 p.
- EPC. 2007. 13th edition. European Patent Office. 626 p.  
[<http://www.epo.org/patents/law/legal-texts/epc.html>]. Read 22.10.2009
- EPO web page. [<http://www.epo.org/>]. Read 22.10.2009
- European Patent Office. 2006. Assessment of the impact of the European patent litigation agreement (EPLA) on litigation of European patents. European Patent Office. 11 p. [<http://www.epo.org/patents/law/legislative-initiatives/epla/assessment.html>]. Read 22.10.2009
- Evalueserve. 2008. Patenting Landscape in China, History, Growth and Utility Model. Whitepaper. May 2008.
- Fitzsimmons, C., Jones, T. 2002. Managing Intellectual Property. Capstone Publishing. 110 p.
- French, H. 2005. Whose patent is it, anyway? New York Times. 5 March 2005.  
[<http://query.nytimes.com/gst/fullpage.html?res=9406E0DB113DF936A35750C0A9639C8B63>]. Read 12.10.2009
- Greenlief, M.Y.C. 2008. Manual of patent examining procedure. Eight edition. U.S. Department of Commerce.
- Greguras, F. 2007. Intellectual property strategy and best practices for R&D services in China. Computer Law and Security Report, Volume 23, Issue 5. pp. 449-452.
- Grossman, B.L., Hoffman, G.M. 2005. Patent Litigation Strategies Handbook. Second edition. BNA Books. 1459 p.
- Guidelines for examination in the European patent office. 2007. European Patent Office. 484 p. [<http://www.epo.org/patents/law/legal-texts/guidelines.html>].  
Read 22.10.2009
- Heyman, P. 2005. Using a Patent Portfolio to Defend Against a Patent Infringement Suit. Intellectual Property & Technology Law Journal, Volume 17, Number 7, July 2005. pp. 9-15.
- Hoyng, W., Eijsvogels, F. 2008. Global patent litigation – strategy and practice. Kluwer Law International.
- Hu, A.G., Jefferson, G.H. 2009. A great wall of patents: What is behind China's recent patent explosion? Journal of Development Economics, volume 90, issue 1, September 2009. pp. 57-68.
- Kasanen, E., Lukka, K., Siitonen, A. 1991. Konstruktiivinen tutkimusote liiketaloustieteissä. Liiketaloudellinen Aikakauskirja 3-1991. pp. 301-327
- Ladas & Parry LLP webpage. [<http://www.ladas.com/Litigation/index.html>].  
Read 22.10.2009
- Levko, A., Torres, V., Teelucksingh, J. 2008. 2008 Patent Litigation Study: Damages, awards, success rates and time-to-trial. Pricewaterhouse Coopers LLP. 19 p.  
[[http://www.pwc.com/extweb/pwcpublishings.nsf/docid/EBC144CF6220C1E785257424005F9A2B/\\$file/2008\\_patent\\_litigation\\_study.pdf](http://www.pwc.com/extweb/pwcpublishings.nsf/docid/EBC144CF6220C1E785257424005F9A2B/$file/2008_patent_litigation_study.pdf)]. Read 15.10.2009

- Liu, W. 2005. Intellectual property protection related to technology in China. *Technological Forecasting & Social Change*. Volume 72, Issue 3. pp. 339-348.
- Metsämuuronen, J. 2005. Tutkimuksen tekemisen perusteet ihmistieteissä. Jyväskylä, Gummerus Kirjapaino Oy. 253 p.
- Mueller, J.M. 2006. *An Introduction to Patent Law*. Second Edition. Aspen publishers. 485 p.
- Neilimo, K., Näsi, J. 1980. Nomoteettinen tutkimusote ja suomalainen yrityksen taloustiede. Tutkimus positivismiin soveltamisesta. Yrityksen taloustieteen yksityisoikeuden laitoksen julkaisuja. Sarja A 2: Tutkielmia ja raportteja 12. Tampere, Tampereen Yliopisto. 82 p.
- Nicholson, K., Liu, Z. 2008. Avoid competition problems in China. *Managing Intellectual Property*, Issue 181 July 2008. pp. 54-57.
- Nykänen, T. 2009. Senior IPR Specialist – European Patent Attorney. Nokia Corporation. Jyväskylä, Finland. Interview 2.11.2009.
- Oesch, R., Pihlajamaa, H. 2008. *Patenttioikeus*. Gummerus Kirjapaino Oy. 464 p.
- Olkkonen, T. 1994. Johdatus teollisuustalouden tutkimustyöhön. Teknillinen korkeakoulu, Tuotantotalouden osasto, Teollisuustalouden laboratorio. Toinen painos. 143 p.
- Prescott, N. 2006. Affirmative Defenses in Section 337 ITC Patent Infringement Proceedings. *Bepress Legal Series*. Paper 923, Year 2006. [<http://law.bepress.com/expresso/eps/923>]. Read 2.11.2009
- Schuster, R. 2004. Enforcing patents in Germany. *Managing Intellectual Property*. September 2004. Issue 142. pp. 73-73.
- Sepetys, K., Cox, A. 2009. Intellectual Property Rights Protection in China: Trends in Litigation and Economic Damages. *Nera Economic Consulting*. 15 p. [[http://www.nera.com/image/PUB\\_IPR\\_Protection\\_China\\_0109\\_final.pdf](http://www.nera.com/image/PUB_IPR_Protection_China_0109_final.pdf)]. Read 12.10.2009
- Sharer, P.L., Mauk, J.E. 2008. *The Computer & Internet Lawyer*, Volume 25, Issue 2. February 2008. pp. 12-18.
- State Intellectual Property Office of the People's Republic of China (SIPO). Guidelines for examination. Ordinance of the State Intellectual Property Office No. 38. May 24, 2006. [[http://www.sipo.gov.cn/sipo/zlsc/sczn2006/guidelines2006\(EN\).pdf](http://www.sipo.gov.cn/sipo/zlsc/sczn2006/guidelines2006(EN).pdf)]. Read 14.10.2009
- Sullivan, P.H. 2000. *Value-Driven Intellectual Capital – How to convert intangible corporate assets into market value*. John Wiley & Sons, Inc. 276 p.
- Teece, D. 2000. *Managing intellectual capital*. Oxford University Press. 300 p.
- Tian, Y. 2009. Intellectual property (IP) protection versus IP abuses: The recent development of Chinese IP abuse rules and recommendations for foreign technology-driven companies. *Computer Law & Security Review*, Volume 25, Issue 4. pp. 352-366.
- Turunen, K. 1978. *Ihminen ja tiede*. Jyväskylä, Gummerus. 97 p.

United Kingdom Patent Act.

[[http://www.wipo.int/clea/en/text\\_html.jsp?lang=EN&id=1623](http://www.wipo.int/clea/en/text_html.jsp?lang=EN&id=1623)]. Read 3.11.2009

United States Code. [<http://uscode.house.gov/search/criteria.shtml>]. Read 1.11.2009

WIPO (World Intellectual Property Organization). Understanding Industrial Property.

WIPO Publication No. 895(E). 20 p. [<http://www.wipo.int/about-ip/en/>].

Read 29.10.2009

WTO (World Trade Organization). 1994. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

[[http://www.wto.org/english/docs\\_e/legal\\_e/27-trips.pdf](http://www.wto.org/english/docs_e/legal_e/27-trips.pdf)]. Read 12.10.2009

Yang, D. 2003. The development of intellectual property in China. World Patent Information, Volume 25, Issue 2. pp. 131-142.

Yang, D. 2005. Culture matters to multinationals' intellectual property businesses. Journal of World Business, Volume 40, Issue 3. pp. 281-301.

Yang, J., Choung, A., Ahn, C. 2004. Enforcing Your Patent Rights. Managing Intellectual Property. October 2004. pp. 59-62.

Zhu, J. 2009. Senior IPR Manager. Nokia Corporation. Vancouver, Canada. Interview 6.11.2009.

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APPENDIX 1: EPC Articles 52-57 Patentability

**Article 52**

**Patentable inventions**

(1) European patents shall be granted for any inventions, in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application.

(2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:

(a) discoveries, scientific theories and mathematical methods;

(b) aesthetic creations;

(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;

(d) presentations of information.

(3) Paragraph 2 shall exclude the patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.

**Article 53**

**Exceptions to patentability**

European patents shall not be granted in respect of:

(a) inventions the commercial exploitation of which would be contrary to "ordre public" or morality; such exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation in some or all of the Contracting States;

(b) plant or animal varieties or essentially biological processes for the production of plants or animals; this provision shall not apply to microbiological processes or the products thereof;

(c) methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practised on the human or animal body; this provision shall not apply to products, in particular substances or compositions, for use in any of these methods.

## **Article 54**

### **Novelty**

(1) An invention shall be considered to be new if it does not form part of the state of the art.

(2) The state of the art shall be held to comprise 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.

(3) Additionally, the content of European patent applications as filed, the dates of filing of which are prior to the date referred to in paragraph 2 and which were published on or after that date, shall be considered as comprised in the state of the art.

(4) Paragraphs 2 and 3 shall not exclude the patentability of any substance or composition, comprised in the state of the art, for use in a method referred to in Article 53(c), provided that its use for any such method is not comprised in the state of the art.

(5) Paragraphs 2 and 3 shall also not exclude the patentability of any substance or composition referred to in paragraph 4 for any specific use in a method referred to in Article 53(c), provided that such use is not comprised in the state of the art.

## **Article 55**

### **Non-prejudicial disclosures**

(1) For the application of Article 54, a disclosure of the invention shall not be taken into consideration if it occurred no earlier than six months preceding the filing of the European patent application and if it was due to, or in consequence of:

(a) an evident abuse in relation to the applicant or his legal predecessor, or

(b) the fact that the applicant or his legal predecessor has displayed the invention at an official, or officially recognised, international exhibition falling within the terms of the

Convention on international exhibitions signed at Paris on 22 November 1928 and last revised on 30 November 1972.

(2) In the case of paragraph 1(b), paragraph 1 shall apply only if the applicant states, when filing the European patent application, that the invention has been so displayed and files a supporting certificate within the time limit and under the conditions laid down in the Implementing Regulations.

## **Article 56**

### **Inventive step**

An invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art. If the state of the art also includes documents within the meaning of Article 54, paragraph 3, these documents shall not be considered in deciding whether there has been an inventive step.

## **Article 57**

### **Industrial application**

An invention shall be considered as susceptible of industrial application if it can be made or used in any kind of industry, including agriculture.

APPENDIX 2: EPC Article 100 Grounds for opposition

**Article 100**  
**Grounds for opposition**

Opposition may only be filed on the grounds that:

- (a) the subject-matter of the European patent is not patentable under Articles 52 to 57;
- (b) the European patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art;
- (c) the subject-matter of the European patent extends beyond the content of the application as filed, or, if the patent was granted on a divisional application or on a new application filed under Article 61, beyond the content of the earlier application as filed.

APPENDIX 3: EPC Article 61 European patent applications filed by non-entitled persons

**Article 61**

**European patent applications filed by non-entitled persons**

(1) If by a final decision it is adjudged that a person other than the applicant is entitled to the grant of the European patent, that person may, in accordance with the Implementing Regulations:

(a) prosecute the European patent application as his own application in place of the applicant;

(b) file a new European patent application in respect of the same invention; or

(c) request that the European patent application be refused.

(2) Article 76, paragraph 1, shall apply mutatis mutandis to a new European patent application filed under paragraph 1(b).

APPENDIX 4: EPC Article 105 Intervention of the assumed infringer

**Article 105**

**Intervention of the assumed infringer**

(1) Any third party may, in accordance with the Implementing Regulations, intervene in opposition proceedings after the opposition period has expired, if the third party proves that

(a) proceedings for infringement of the same patent have been instituted against him, or

(b) following a request of the proprietor of the patent to cease alleged infringement, the third party has instituted proceedings for a ruling that he is not infringing the patent.

(2) An admissible intervention shall be treated as an opposition.

APPENDIX 5: EPC Article 115 Observations by third parties

**Article 115**

**Observations by third parties**

In proceedings before the European Patent Office, following the publication of the European patent application, any third party may, in accordance with the Implementing Regulations, present observations concerning the patentability of the invention to which the application or patent relates. That person shall not be a party to the proceedings.

## APPENDIX 6: EPC Article 138 Revocation of European patents

**Article 138****Revocation of European patents**

(1) Subject to Article 139, a European patent may be revoked with effect for a Contracting State only on the grounds that:

(a) the subject-matter of the European patent is not patentable under Articles 52 to 57;

(b) the European patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art;

(c) the subject-matter of the European patent extends beyond the content of the application as filed or, if the patent was granted on a divisional application or on a new application filed under Article 61, beyond the content of the earlier application as filed;

(d) the protection conferred by the European patent has been extended; or

(e) the proprietor of the European patent is not entitled under Article 60, paragraph 1.

(2) If the grounds for revocation affect the European patent only in part, the patent shall be limited by a corresponding amendment of the claims and revoked in part.

(3) In proceedings before the competent court or authority relating to the validity of the European patent, the proprietor of the patent shall have the right to limit the patent by amending the claims. The patent as thus limited shall form the basis for the proceedings.

## APPENDIX 7: EPC Article 60 Right to European patent

**Article 60****Right to a European patent**

(1) The right to a European patent shall belong to the inventor or his successor in title. If the inventor is an employee, the right to a European patent shall be determined in accordance with the law of the State in which the employee is mainly employed; if the State in which the employee is mainly employed cannot be determined, the law to be applied shall be that of the State in which the employer has the place of business to which the employee is attached.

(2) If two or more persons have made an invention independently of each other, the right to a European patent therefor shall belong to the person whose European patent application has the earliest date of filing, provided that this first application has been published.

(3) In proceedings before the European Patent Office, the applicant shall be deemed to be entitled to exercise the right to a European patent.

APPENDIX 8: United Kingdom Patent Act 1977, Chapter 37 section 71

**Declaration or declarator as to non-infringement**

71.-

(1) Without prejudice to the court's jurisdiction to make a declaration or declarator apart from this section, a declaration or declarator that an act does not, or a proposed act would not, constitute an infringement of a patent may be made by the court or the comptroller in proceedings between the person doing or proposing to do the act and the proprietor of the patent, notwithstanding that no assertion to the contrary has been made by the proprietor, if it is shown-

(a) that that person has applied in writing to the proprietor for a written acknowledgment to the effect of the declaration or declarator claimed, and has furnished him with full particulars in writing of the act in question; and

(b) that the proprietor has refused or failed to give any such acknowledgment.

(2) Subject to section 72(5) below, a declaration made by the comptroller under this section shall have the same effect as a declaration or declarator by the court.

APPENDIX 9: USC Section 101 of title 35: Inventions patentable

**Inventions patentable**

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

## APPENDIX 10: USC Section 102 of title 35: Conditions for patentability

**Conditions for patentability; novelty and loss of right to patent**

A person shall be entitled to a patent unless—

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or
- (c) he has abandoned the invention, or
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or
- (e) the invention was described in
  - (1) an application for patent, published under section 122 (b), by another filed in the United States before the invention by the applicant for patent or
  - (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351 (a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language; or
- (f) he did not himself invent the subject matter sought to be patented, or
- (g)
  - (1) during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or
  - (2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

## APPENDIX 11: USC Section 103 of title 35: Conditions for patentability

**Conditions for patentability; non-obvious subject matter**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

(b)

(1) Notwithstanding subsection (a), and upon timely election by the applicant for patent to proceed under this subsection, a biotechnological process using or resulting in a composition of matter that is novel under section 102 and nonobvious under subsection (a) of this section shall be considered nonobvious if—

(A) claims to the process and the composition of matter are contained in either the same application for patent or in separate applications having the same effective filing date; and

(B) the composition of matter, and the process at the time it was invented, were owned by the same person or subject to an obligation of assignment to the same person.

(2) A patent issued on a process under paragraph (1)—

(A) shall also contain the claims to the composition of matter used in or made by that process, or

(B) shall, if such composition of matter is claimed in another patent, be set to expire on the same date as such other patent, notwithstanding section 154.

(3) For purposes of paragraph (1), the term “biotechnological process” means—

(A) a process of genetically altering or otherwise inducing a single- or multi-celled organism to—

(i) express an exogenous nucleotide sequence,

(ii) inhibit, eliminate, augment, or alter expression of an endogenous nucleotide sequence, or

(iii) express a specific physiological characteristic not naturally associated with said organism;

(B) cell fusion procedures yielding a cell line that expresses a specific protein, such as a monoclonal antibody; and

(C) a method of using a product produced by a process defined by subparagraph

(A) or (B), or a combination of subparagraphs (A) and (B).

(c)

(1) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person.

(2) For purposes of this subsection, subject matter developed by another person and a claimed invention shall be deemed to have been owned by the same person or subject to an obligation of assignment to the same person if—

(A) the claimed invention was made by or on behalf of parties to a joint research agreement that was in effect on or before the date the claimed invention was made;

(B) the claimed invention was made as a result of activities undertaken within the scope of the joint research agreement; and

(C) the application for patent for the claimed invention discloses or is amended to disclose the names of the parties to the joint research agreement.

(3) For purposes of paragraph (2), the term “joint research agreement” means a written contract, grant, or cooperative agreement entered into by two or more persons or entities for the performance of experimental, developmental, or research work in the field of the claimed invention.

## APPENDIX 12: USC Section 271 of title 35: Infringement of patent

**Infringement of patent**

(a) Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.

(b) Whoever actively induces infringement of a patent shall be liable as an infringer.

(c) Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

(d) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following:

- (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent;
- (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent;
- (3) sought to enforce his patent rights against infringement or contributory infringement;
- (4) refused to license or use any rights to the patent; or
- (5) conditioned the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned.

(e)

- (1) It shall not be an act of infringement to make, use, offer to sell, or sell within the United States or import into the United States a patented invention (other than a new animal drug or veterinary biological product (as those terms are used in the Federal Food, Drug, and Cosmetic Act and the Act of March 4, 1913) which is primarily manufactured using recombinant DNA, recombinant RNA, hybridoma technology,

or other processes involving site specific genetic manipulation techniques) solely for uses reasonably related to the development and submission of information under a Federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products.

(2) It shall be an act of infringement to submit—

(A) an application under section 505(j) of the Federal Food, Drug, and Cosmetic Act or described in section 505(b)(2) of such Act for a drug claimed in a patent or the use of which is claimed in a patent, or

(B) an application under section 512 of such Act or under the Act of March 4, 1913 (21 U.S.C. 151–158) for a drug or veterinary biological product which is not primarily manufactured using recombinant DNA, recombinant RNA, hybridoma technology, or other processes involving site specific genetic manipulation techniques and which is claimed in a patent or the use of which is claimed in a patent,

if the purpose of such submission is to obtain approval under such Act to engage in the commercial manufacture, use, or sale of a drug or veterinary biological product claimed in a patent or the use of which is claimed in a patent before the expiration of such patent.

(3) In any action for patent infringement brought under this section, no injunctive or other relief may be granted which would prohibit the making, using, offering to sell, or selling within the United States or importing into the United States of a patented invention under paragraph (1).

(4) For an act of infringement described in paragraph (2)—

(A) the court shall order the effective date of any approval of the drug or veterinary biological product involved in the infringement to be a date which is not earlier than the date of the expiration of the patent which has been infringed,

(B) injunctive relief may be granted against an infringer to prevent the commercial manufacture, use, offer to sell, or sale within the United States or importation into the United States of an approved drug or veterinary biological product, and

(C) damages or other monetary relief may be awarded against an infringer only if there has been commercial manufacture, use, offer to sell, or sale within the United States or importation into the United States of an approved drug or veterinary biological product.

The remedies prescribed by subparagraphs (A), (B), and (C) are the only remedies which may be granted by a court for an act of infringement described in paragraph (2), except that a court may award attorney fees under section 285.

(5) Where a person has filed an application described in paragraph (2) that includes a certification under subsection (b)(2)(A)(iv) or (j)(2)(A)(vii)(IV) of section 505 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 355), and neither the owner of the patent that is the subject of the certification nor the holder of the approved

application under subsection (b) of such section for the drug that is claimed by the patent or a use of which is claimed by the patent brought an action for infringement of such patent before the expiration of 45 days after the date on which the notice given under subsection (b)(3) or (j)(2)(B) of such section was received, the courts of the United States shall, to the extent consistent with the Constitution, have subject matter jurisdiction in any action brought by such person under section 2201 of title 28 for a declaratory judgment that such patent is invalid or not infringed.

(f)

(1) Whoever without authority supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented invention, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

(2) Whoever without authority supplies or causes to be supplied in or from the United States any component of a patented invention that is especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use, where such component is uncombined in whole or in part, knowing that such component is so made or adapted and intending that such component will be combined outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

(g) Whoever without authority imports into the United States or offers to sell, sells, or uses within the United States a product which is made by a process patented in the United States shall be liable as an infringer, if the importation, offer to sell, sale, or use of the product occurs during the term of such process patent. In an action for infringement of a process patent, no remedy may be granted for infringement on account of the noncommercial use or retail sale of a product unless there is no adequate remedy under this title for infringement on account of the importation or other use, offer to sell, or sale of that product. A product which is made by a patented process will, for purposes of this title, not be considered to be so made after—

(1) it is materially changed by subsequent processes; or

(2) it becomes a trivial and nonessential component of another product.

(h) As used in this section, the term “whoever” includes any State, any instrumentality of a State, and any officer or employee of a State or instrumentality of a State acting in his official capacity. Any State, and any such instrumentality, officer, or employee, shall be subject to the provisions of this title in the same manner and to the same extent as any nongovernmental entity.

(i) As used in this section, an “offer for sale” or an “offer to sell” by a person other than the patentee, or any designee of the patentee, is that in which the sale will occur before the expiration of the term of the patent.

## APPENDIX 13: USC Section 1337 of Title 19: Unfair practices in import trade

**Unfair practices in import trade**

## (a) Unlawful activities; covered industries; definitions

(1) Subject to paragraph (2), the following are unlawful, and when found by the Commission to exist shall be dealt with, in addition to any other provision of law, as provided in this section:

(A) Unfair methods of competition and unfair acts in the importation of articles (other than articles provided for in subparagraphs (B), (C), (D), and (E)) into the United States, or in the sale of such articles by the owner, importer, or consignee, the threat or effect of which is—

(i) to destroy or substantially injure an industry in the United States;

(ii) to prevent the establishment of such an industry; or

(iii) to restrain or monopolize trade and commerce in the United States.

(B) The importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that—

(i) infringe a valid and enforceable United States patent or a valid and enforceable United States copyright registered under title 17; or

(ii) are made, produced, processed, or mined under, or by means of, a process covered by the claims of a valid and enforceable United States patent.

(C) The importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that infringe a valid and enforceable United States trademark registered under the Trademark Act of 1946 [15 U.S.C. 1051 et seq.].

(D) The importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of a semiconductor chip product in a manner that constitutes infringement of a mask work registered under chapter 9 of title 17.

(E) The importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consigner, of an article that constitutes infringement of the exclusive rights in a design protected under chapter 13 of title 17.

(2) Subparagraphs (B), (C), (D), and (E) of paragraph (1) apply only if an industry in the United States, relating to the articles protected by the patent, copyright, trademark, mask work, or design concerned, exists or is in the process of being established.

(3) For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned—

(A) significant investment in plant and equipment;

(B) significant employment of labor or capital; or

(C) substantial investment in its exploitation, including engineering, research and development, or licensing.

(4) For the purposes of this section, the phrase “owner, importer, or consignee” includes any agent of the owner, importer, or consignee.

(b) Investigation of violations by Commission

(1) The Commission shall investigate any alleged violation of this section on complaint under oath or upon its initiative. Upon commencing any such investigation, the Commission shall publish notice thereof in the Federal Register. The Commission shall conclude any such investigation and make its determination under this section at the earliest practicable time after the date of publication of notice of such investigation. To promote expeditious adjudication, the Commission shall, within 45 days after an investigation is initiated, establish a target date for its final determination.

(2) During the course of each investigation under this section, the Commission shall consult with, and seek advice and information from, the Department of Health and Human Services, the Department of Justice, the Federal Trade Commission, and such other departments and agencies as it considers appropriate.

(3) Whenever, in the course of an investigation under this section, the Commission has reason to believe, based on information before it, that a matter, in whole or in part, may come within the purview of part II of subtitle IV of this chapter, it shall promptly notify the Secretary of Commerce so that such action may be taken as is otherwise authorized by such part II. If the Commission has reason to believe that the matter before it

(A) is based solely on alleged acts and effects which are within the purview of section 1671 or 1673 of this title, or

(B) relates to an alleged copyright infringement with respect to which action is prohibited by section 1008 of title 17, the Commission shall terminate, or not institute, any investigation into the matter. If the Commission has reason to believe the matter before it is based in part on alleged acts and effects which are within the purview of section 1671 or 1673 of this title, and in part on alleged acts and effects which may, independently from or in conjunction with those within the purview of such section, establish a basis for relief under this section, then it may institute or continue an investigation into the matter. If the Commission notifies the Secretary or the administering authority (as defined in section 1677 (1) of this title) with respect to a matter under this paragraph, the Commission may suspend its investigation during the time the matter is before

the Secretary or administering authority for final decision. Any final decision by the administering authority under section 1671 or 1673 of this title with respect to the matter within such section 1671 or 1673 of this title of which the Commission has notified the Secretary or administering authority shall be conclusive upon the Commission with respect to the issue of less-than-fair-value sales or subsidization and the matters necessary for such decision.

(c) Determinations; review

The Commission shall determine, with respect to each investigation conducted by it under this section, whether or not there is a violation of this section, except that the Commission may, by issuing a consent order or on the basis of an agreement between the private parties to the investigation, including an agreement to present the matter for arbitration, terminate any such investigation, in whole or in part, without making such a determination. Each determination under subsection (d) or (e) of this section shall be made on the record after notice and opportunity for a hearing in conformity with the provisions of subchapter II of chapter 5 of title 5. All legal and equitable defenses may be presented in all cases. A respondent may raise any counterclaim in a manner prescribed by the Commission. Immediately after a counterclaim is received by the Commission, the respondent raising such counterclaim shall file a notice of removal with a United States district court in which venue for any of the counterclaims raised by the party would exist under section 1391 of title 28. Any counterclaim raised pursuant to this section shall relate back to the date of the original complaint in the proceeding before the Commission. Action on such counterclaim shall not delay or affect the proceeding under this section, including the legal and equitable defenses that may be raised under this subsection. Any person adversely affected by a final determination of the Commission under subsection (d), (e), (f), or (g) of this section may appeal such determination, within 60 days after the determination becomes final, to the United States Court of Appeals for the Federal Circuit for review in accordance with chapter 7 of title 5. Notwithstanding the foregoing provisions of this subsection, Commission determinations under subsections (d), (e), (f), and (g) of this section with respect to its findings on the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, the amount and nature of bond, or the appropriate remedy shall be reviewable in accordance with section 706 of title 5. Determinations by the Commission under subsections (e), (f), and (j) of this section with respect to forfeiture of bonds and under subsection (h) of this section with respect to the imposition of sanctions for abuse of discovery or abuse of process shall also be reviewable in accordance with section 706 of title 5.

(d) Exclusion of articles from entry

(1) If the Commission determines, as a result of an investigation under this section, that there is a violation of this section, it shall direct that the articles concerned,

imported by any person violating the provision of this section, be excluded from entry into the United States, unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such articles should not be excluded from entry. The Commission shall notify the Secretary of the Treasury of its action under this subsection directing such exclusion from entry, and upon receipt of such notice, the Secretary shall, through the proper officers, refuse such entry.

(2) The authority of the Commission to order an exclusion from entry of articles shall be limited to persons determined by the Commission to be violating this section unless the Commission determines that—

(A) a general exclusion from entry of articles is necessary to prevent circumvention of an exclusion order limited to products of named persons; or

(B) there is a pattern of violation of this section and it is difficult to identify the source of infringing products.

(e) Exclusion of articles from entry during investigation except under bond; procedures applicable; preliminary relief

(1) If, during the course of an investigation under this section, the Commission determines that there is reason to believe that there is a violation of this section, it may direct that the articles concerned, imported by any person with respect to whom there is reason to believe that such person is violating this section, be excluded from entry into the United States, unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such articles should not be excluded from entry. The Commission shall notify the Secretary of the Treasury of its action under this subsection directing such exclusion from entry, and upon receipt of such notice, the Secretary shall, through the proper officers, refuse such entry, except that such articles shall be entitled to entry under bond prescribed by the Secretary in an amount determined by the Commission to be sufficient to protect the complainant from any injury. If the Commission later determines that the respondent has violated the provisions of this section, the bond may be forfeited to the complainant.

(2) A complainant may petition the Commission for the issuance of an order under this subsection. The Commission shall make a determination with regard to such petition by no later than the 90th day after the date on which the Commission's notice of investigation is published in the Federal Register. The Commission may extend the 90-day period for an additional 60 days in a case it designates as a more complicated case. The Commission shall publish in the Federal Register its reasons why it designated the case as being more complicated. The Commission may require the complainant to post a bond as a prerequisite to the issuance of an order under this subsection. If the Commission later determines that the respondent has

not violated the provisions of this section, the bond may be forfeited to the respondent.

(3) The Commission may grant preliminary relief under this subsection or subsection (f) of this section to the same extent as preliminary injunctions and temporary restraining orders may be granted under the Federal Rules of Civil Procedure.

(4) The Commission shall prescribe the terms and conditions under which bonds may be forfeited under paragraphs (1) and (2).

(f) Cease and desist orders; civil penalty for violation of orders

(1) In addition to, or in lieu of, taking action under subsection (d) or (e) of this section, the Commission may issue and cause to be served on any person violating this section, or believed to be violating this section, as the case may be, an order directing such person to cease and desist from engaging in the unfair methods or acts involved, unless after considering the effect of such order upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such order should not be issued. The Commission may at any time, upon such notice and in such manner as it deems proper, modify or revoke any such order, and, in the case of a revocation, may take action under subsection (d) or (e) of this section, as the case may be. If a temporary cease and desist order is issued in addition to, or in lieu of, an exclusion order under subsection (e) of this section, the Commission may require the complainant to post a bond, in an amount determined by the Commission to be sufficient to protect the respondent from any injury, as a prerequisite to the issuance of an order under this subsection. If the Commission later determines that the respondent has not violated the provisions of this section, the bond may be forfeited to the respondent. The Commission shall prescribe the terms and conditions under which the bonds may be forfeited under this paragraph.

(2) Any person who violates an order issued by the Commission under paragraph (1) after it has become final shall forfeit and pay to the United States a civil penalty for each day on which an importation of articles, or their sale, occurs in violation of the order of not more than the greater of \$100,000 or twice the domestic value of the articles entered or sold on such day in violation of the order. Such penalty shall accrue to the United States and may be recovered for the United States in a civil action brought by the Commission in the Federal District Court for the District of Columbia or for the district in which the violation occurs. In such actions, the United States district courts may issue mandatory injunctions incorporating the relief sought by the Commission as they deem appropriate in the enforcement of such final orders of the Commission.

(g) Exclusion from entry or cease and desist order; conditions and procedures applicable

## (1) If—

- (A) a complaint is filed against a person under this section;
- (B) the complaint and a notice of investigation are served on the person;
- (C) the person fails to respond to the complaint and notice or otherwise fails to appear to answer the complaint and notice;
- (D) the person fails to show good cause why the person should not be found in default; and
- (E) the complainant seeks relief limited solely to that person;

the Commission shall presume the facts alleged in the complaint to be true and shall, upon request, issue an exclusion from entry or a cease and desist order, or both, limited to that person unless, after considering the effect of such exclusion or order upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, the Commission finds that such exclusion or order should not be issued.

## (2) In addition to the authority of the Commission to issue a general exclusion from entry of articles when a respondent appears to contest an investigation concerning a violation of the provisions of this section, a general exclusion from entry of articles, regardless of the source or importer of the articles, may be issued if—

- (A) no person appears to contest an investigation concerning a violation of the provisions of this section,
- (B) such a violation is established by substantial, reliable, and probative evidence, and
- (C) the requirements of subsection (d)(2) of this section are met.

## (h) Sanctions for abuse of discovery and abuse of process

The Commission may by rule prescribe sanctions for abuse of discovery and abuse of process to the extent authorized by Rule 11 and Rule 37 of the Federal Rules of Civil Procedure.

## (i) Forfeiture

## (1) In addition to taking action under subsection (d) of this section, the Commission may issue an order providing that any article imported in violation of the provisions of this section be seized and forfeited to the United States if—

- (A) the owner, importer, or consignee of the article previously attempted to import the article into the United States;
- (B) the article was previously denied entry into the United States by reason of an order issued under subsection (d) of this section; and
- (C) upon such previous denial of entry, the Secretary of the Treasury provided the owner, importer, or consignee of the article written notice of—

- (i) such order, and

(ii) the seizure and forfeiture that would result from any further attempt to import the article into the United States.

(2) The Commission shall notify the Secretary of the Treasury of any order issued under this subsection and, upon receipt of such notice, the Secretary of the Treasury shall enforce such order in accordance with the provisions of this section.

(3) Upon the attempted entry of articles subject to an order issued under this subsection, the Secretary of the Treasury shall immediately notify all ports of entry of the attempted importation and shall identify the persons notified under paragraph (1)(C).

(4) The Secretary of the Treasury shall provide—

(A) the written notice described in paragraph (1)(C) to the owner, importer, or consignee of any article that is denied entry into the United States by reason of an order issued under subsection (d) of this section; and

(B) a copy of such written notice to the Commission.

(j) Referral to President

(1) If the Commission determines that there is a violation of this section, or that, for purposes of subsection (e) of this section, there is reason to believe that there is such a violation, it shall—

(A) publish such determination in the Federal Register, and

(B) transmit to the President a copy of such determination and the action taken under subsection (d), (e), (f), (g), or (i) of this section, with respect thereto, together with the record upon which such determination is based.

(2) If, before the close of the 60-day period beginning on the day after the day on which he receives a copy of such determination, the President, for policy reasons, disapproves such determination and notifies the Commission of his disapproval, then, effective on the date of such notice, such determination and the action taken under subsection (d), (e), (f), (g), or (i) of this section with respect thereto shall have no force or effect.

(3) Subject to the provisions of paragraph (2), such determination shall, except for purposes of subsection (c) of this section, be effective upon publication thereof in the Federal Register, and the action taken under subsection (d), (e), (f), (g), or (i) of this section, with respect thereto shall be effective as provided in such subsections, except that articles directed to be excluded from entry under subsection (d) of this section or subject to a cease and desist order under subsection (f) of this section shall, until such determination becomes final, be entitled to entry under bond prescribed by the Secretary in an amount determined by the Commission to be sufficient to protect the complainant from any injury. If the determination becomes final, the bond may be forfeited to the complainant. The Commission shall prescribe the terms and conditions under which bonds may be forfeited under this paragraph.

(4) If the President does not disapprove such determination within such 60-day period, or if he notifies the Commission before the close of such period that he

approves such determination, then, for purposes of paragraph (3) and subsection (c) of this section such determination shall become final on the day after the close of such period or the day on which the President notifies the Commission of his approval, as the case may be.

(k) Period of effectiveness; termination of violation or modification or rescission of exclusion or order

(1) Except as provided in subsections (f) and (j) of this section, any exclusion from entry or order under this section shall continue in effect until the Commission finds, and in the case of exclusion from entry notifies the Secretary of the Treasury, that the conditions which led to such exclusion from entry or order no longer exist.

(2) If any person who has previously been found by the Commission to be in violation of this section petitions the Commission for a determination that the petitioner is no longer in violation of this section or for a modification or rescission of an exclusion from entry or order under subsection (d), (e), (f), (g), or (i) of this section—

(A) the burden of proof in any proceeding before the Commission regarding such petition shall be on the petitioner; and

(B) relief may be granted by the Commission with respect to such petition—

(i) on the basis of new evidence or evidence that could not have been presented at the prior proceeding, or

(ii) on grounds which would permit relief from a judgment or order under the Federal Rules of Civil Procedure.

(l) Importation by or for United States

Any exclusion from entry or order under subsection (d), (e), (f), (g), or (i) of this section, in cases based on a proceeding involving a patent, copyright, mask work, or design under subsection (a)(1) of this section, shall not apply to any articles imported by and for the use of the United States, or imported for, and to be used for, the United States with the authorization or consent of the Government. Whenever any article would have been excluded from entry or would not have been entered pursuant to the provisions of such subsections but for the operation of this subsection, an owner of the patent, copyright, mask work, or design adversely affected shall be entitled to reasonable and entire compensation in an action before the United States Court of Federal Claims pursuant to the procedures of section 1498 of title 28.

(m) “United States” defined

For purposes of this section and sections 1338 and 1340 of this title, the term “United States” means the customs territory of the United States as defined in general note 2 of the Harmonized Tariff Schedule of the United States.

(n) Disclosure of confidential information

(1) Information submitted to the Commission or exchanged among the parties in connection with proceedings under this section which is properly designated as confidential pursuant to Commission rules may not be disclosed (except under a protective order issued under regulations of the Commission which authorizes limited disclosure of such information) to any person (other than a person described in paragraph (2)) without the consent of the person submitting it.

(2) Notwithstanding the prohibition contained in paragraph (1), information referred to in that paragraph may be disclosed to—

- (A) an officer or employee of the Commission who is directly concerned with—
  - (i) carrying out the investigation or related proceeding in connection with which the information is submitted,
  - (ii) the administration of a bond posted pursuant to subsection (e), (f), or (j) of this section,
  - (iii) the administration or enforcement of an exclusion order issued pursuant to subsection (d), (e), or (g) of this section, a cease and desist order issued pursuant to subsection (f) of this section, or a consent order issued pursuant to subsection (c) of this section,
  - (iv) proceedings for the modification or rescission of a temporary or permanent order issued under subsection (d), (e), (f), (g), or (i) of this section, or a consent order issued under this section, or
  - (v) maintaining the administrative record of the investigation or related proceeding,
- (B) an officer or employee of the United States Government who is directly involved in the review under subsection (j) of this section, or
- (C) an officer or employee of the United States Customs Service who is directly involved in administering an exclusion from entry under subsection (d), (e), or (g) of this section resulting from the investigation or related proceeding in connection with which the information is submitted.

## APPENDIX 14: USC Sections 112 of title 35: Specification

**Specification**

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A claim may be written in independent or, if the nature of the case admits, in dependent or multiple dependent form.

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

A claim in multiple dependent form shall contain a reference, in the alternative only, to more than one claim previously set forth and then specify a further limitation of the subject matter claimed. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of the particular claim in relation to which it is being considered.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

## APPENDIX 15: USC Sections 251 of title 35: Reissue of defective patents

**Reissue of defective patents**

Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than he had a right to claim in the patent, the Director shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue.

The Director may issue several reissued patents for distinct and separate parts of the thing patented, upon demand of the applicant, and upon payment of the required fee for a reissue for each of such reissued patents.

The provisions of this title relating to applications for patent shall be applicable to applications for reissue of a patent, except that application for reissue may be made and sworn to by the assignee of the entire interest if the application does not seek to enlarge the scope of the claims of the original patent.

No reissued patent shall be granted enlarging the scope of the claims of the original patent unless applied for within two years from the grant of the original patent.

## APPENDIX 16: USC Sections 1-7 of title 15: Sherman Antitrust Act

**Section 1. Trusts, etc., in restraint of trade illegal; penalty**

Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal. Every person who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$10,000,000 if a corporation, or, if any other person, \$350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

**Section 2. Monopolizing trade a felony; penalty**

Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$10,000,000 if a corporation, or, if any other person, \$350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

**Section 3. Trusts in Territories or District of Columbia illegal; combination a felony**

Every contract, combination in form of trust or otherwise, or conspiracy, in restraint of trade or commerce in any Territory of the United States or of the District of Columbia, or in restraint of trade or commerce between any such Territory and another, or between any such Territory or Territories and any State or States or the District of Columbia, or with foreign nations, or between the District of Columbia and any State or States or foreign nations, is declared illegal. Every person who shall make any such contract or engage in any such combination or conspiracy, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$10,000,000 if a corporation, or, if any other person, \$350,000, or by imprisonment not exceeding three years, or both said punishments, in the discretion of the court.

**Section 4. Jurisdiction of courts; duty of United States attorneys; procedure**

The several district courts of the United States are invested with jurisdiction to prevent and restrain violations of sections 1 to 7 of this title; and it shall be the duty of the several United States attorneys, in their respective districts, under the direction of the Attorney General, to institute proceedings in equity to prevent and restrain such violations. Such proceedings may be by way of petition setting forth the case and praying that such violation shall be enjoined or otherwise prohibited. When the parties complained of shall have been duly notified of such petition the court shall proceed, as soon as may be, to the hearing and determination of the case; and pending such petition and before final decree, the court may at any time make such temporary restraining order or prohibition as shall be deemed just in the premises.

**Section 5. Bringing in additional parties**

Whenever it shall appear to the court before which any proceeding under section 4 of this title may be pending, that the ends of justice require that other parties should be brought before the court, the court may cause them to be summoned, whether they reside in the district in which the court is held or not; and subpoenas to that end may be served in any district by the marshal thereof.

**Section 6. Forfeiture of property in transit**

Any property owned under any contract or by any combination, or pursuant to any conspiracy (and being the subject thereof) mentioned in section 1 of this title, and being in the course of transportation from one State to another, or to a foreign country, shall be forfeited to the United States, and may be seized and condemned by like proceedings as those provided by law for the forfeiture, seizure, and condemnation of property imported into the United States contrary to law.

**Section 6a. Conduct involving trade or commerce with foreign nations**

Sections 1 to 7 of this title shall not apply to conduct involving trade or commerce (other than import trade or import commerce) with foreign nations unless -

- (1) such conduct has a direct, substantial, and reasonably foreseeable effect -
  - (A) on trade or commerce which is not trade or commerce with foreign nations, or on import trade or import commerce with foreign nations; or
  - (B) on export trade or export commerce with foreign nations, of a person engaged in such trade or commerce in the United States; and
- (2) such effect gives rise to a claim under the provisions of sections 1 to 7 of this title, other than this section.

If sections 1 to 7 of this title apply to such conduct only because of the operation of paragraph (1)(B), then sections 1 to 7 of this title shall apply to such conduct only for injury to export business in the United States.

**Section 7. "Person" or "persons" defined**

The word "person", or "persons", wherever used in sections 1 to 7 of this title shall be deemed to include corporations and associations existing under or authorized by the laws of either the United States, the laws of any of the Territories, the laws of any State, or the laws of any foreign country.

APPENDIX 17: TRIPS Agreement: Article 8

**Article 8, Principles**

1. Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socio-economic and technological development, provided that such measures are consistent with the provisions of this Agreement.

2. Appropriate measures, provided that they are consistent with the provisions of this Agreement, may be needed to prevent the abuse of intellectual property rights by right holders or the resort to practices which unreasonably restrain trade or adversely affect the international transfer of technology.