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MANAGING BUSINESS RISK RELATING TO PENDING PATENT APPLICATIONS – A COMPARISON OF U.S. AND EUROPEAN PRACTISES

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ABSTRACT

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This thesis presents different IPR risk mitigation actions as well as enforcement practices and evaluates their usability in different situations. The focus is on pending patent applications, where the right is not officially recognized or established yet, but some references are made to granted patents as well. The thesis presents the different aspects when assessing the risk level created by patents and pending applications. At all times it compares the patent law of the United States and European Patent Convention. Occasionally some references are made to national law, when the European Patent Convention cannot be applied. The thesis presents two case examples, which bring the risk mitigation actions and enforcement practices closer to practice.

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Pro Gradu – tutkielman tavoitteena on tutkia, mitä IPR rikin minimointi vaihtoehtoja on olemassa. Tavoitteena on myös tarkastella IPR oikeuden vahvistamiseen liittyviä toimenpiteitä. Tutkielma keskittyy erityisesti vireillä oleviin patenttihakemuksiin, koska niiden kohdalla patenttioikeus on vielä vireillä ja näin ollen vahvistamaton. Tutkielma esittelee eri näkökulmia joita tulisi ottaa huomioon, kun arvioidaan patenttien tai vireillä olevien patenttihakemusten aiheuttamaa riskiä. Tutkielma vertailee Yhdysvaltojen patenttilakia ja Euroopan patenttisopimuksen (EPC) kohtia. Viittauksia kansalliseen lainsäädäntöön on tehty siltä osin kuin Euroopan patenttisopimus ei ota kantaa kyseiseen asiaan. Tutkielmassa esitellään myös kaksi käytännön esimerkkitapausta, jotta riskin minimointi vaihtoehdot and IPR oikeuksien vahvistamistoimenpiteet tulisivat lähemmäksi käytäntöä.

FOREWORD

Writing of this thesis has been an interesting journey. The topic had been on my for some years and every day at work I came across with businesses asking for advice to different IPR situations; a topic for thesis was born.

I have had a ten year privilege, and still on-going, to work for UPM-Kymmene Corporation IPR team. I would like to thank all the members of UPM IPR team, past and present, for giving me your support. Thank you for providing me hints, tips, materials and most of all your valuable time for inspiring conversations.

I would like to express my gratitude to Professor Matti I. Niemi for guiding me along the way as well as being patient and flexible. My sincere thank you belongs also to Assistant Professor Helena Sjögren, who gave me valuable feedback and support. Without Kaija Huotari, study coordinator, I would have been lost in bureaucracy; thank you for being my guide.

I am especially grateful for my family. I would like to thank my parents, as well as my father-in-law and mother-in-law, for supporting me every step of the way. Thanks mom for all the discussions after driving home from exams. Special thanks to my brother and his wife, for being assistant professors.

My dearest gratitude belongs to my husband Antti, who has always been there for me; I could never have done this without you. Many thanks to my 3-year-old son Konsta for keeping mums feet on the ground.

Luumäki, 17th of May 2013
Noora Katainen

CONTENT

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ABBREVIATIONS

C.F.R.	Code of Federal Regulations
EPC	European Patent Convention
EPO	European Patent Office
EU	European Union
IPR	Intellectual Property Rights
IP	Intellectual Property
PPH	Patent Prosecution Highway
RCE	Request for Continued Examination
SME	Small and Medium size company
U.S.	the United States
U.S.C.	Unites States Code
USPTO	United States Patent and Trademark Office

Patent Act of 1952 (Title 35 U.S. Code)

37 Code of Federal Regulations Part1 (Rules of Practice in Patent Cases)

1 INTRODUCTION

This study examines the different ways to increase and mitigate risks relating pending patent applications. It focuses on the comparison of the United States patent law and European Patent Convention.

1.1. Background of the study

The topic of this Master´ s Thesis is from the field of Intellectual Property Rights also abbreviated IPR. Intellectual property is usually understood to consist of patents, trademarks, designs, utility models and copyrights. These different forms of protection vary depending on a country and its legislation. This Master´ s Thesis focuses on patents.

When companies are making business decisions, IPR matters cannot be overlooked. A granted patent is a legal right to forbid others from making, using, selling or distributing the patented invention without the patent assignees consent. Companies must take patents into account when doing business so that they would not intentionally infringe the patent rights of others.

When companies start to examine which patents they have to take into account, when for example entering into new business area, they notice that there are multiple patents and pending patent applications. It is commonly recognized that patents can be infringed, but pending patent applications create more uncertainty. It usually takes several years before a patent is granted. Companies cannot wait such a long time and postpone possible entry to the market and besides, new patent applications are being filed all the time. Companies have to tolerate certain amount of risk.

The other side of the coin is that while companies minimize risks, they are also able to create it by using their own pending patent applications in the market place.

1.2. Definitions

Pending patent application

Pending patent application is defined as being an application for patent where the application is active and therefore pending. Pending means that the applicant has paid all necessary fees in order to keep the application alive. The applicant has also responded to office actions to avoid abandonment of the application.

Risk mitigation

Risk mitigation is defined as actions in order to minimize risk. Risk mitigation falls under the category of risk management. The purpose of risk mitigation is to reduce risk systematically.

Enforcement

Enforcement is defined as strengthening something. The enforcement of IP rights can mean litigation or other alternative “softer” methods, such as sending notification letters to competitors. Enforcement can occur in different levels. Different countries try to enforce their IP rights by fighting against counterfeiting and piracy. On the other level domestic companies can supervise and enforce their IP rights.

1.3. Overview of the literature and objectives of the study

There are books and articles which introduce risk minimization options and IP enforcement (see for example Norrgård 2004, Rahnasto 2001, Oesch

et al 2007), but the topics are being dealt individually or very lightly if part of bigger context. Most often they also introduce the actions from point of view of single country (national law). It seems that there are no studies made which would gather all risk minimization and IP enforcement options together especially relating to the U.S. and EPC.

Some studies evaluate the usability and success of single action without taking the others highly into account (see for example Hsu 2010, Fox 2013, Guttag 1998, Nichols 2002). Additionally when comparing the United States patent law to European, fewer studies are being found. Graham et al (2002) compare re-examination in the U.S. and opposition in Europe, which both are post-grant procedures. Norrgård (2009) focuses on patent infringement in Finland.

The objective of this study is to gather risk mitigation tools as well as IP enforcement tools together, but especially focusing on the time period when patents are pending. In addition to the previous, this study also compares the patent laws of the United States and Europe (EPC). There seems to be a gap in the research on the gathering of risk mitigation and IP enforcement tools relating to the U.S. and Europe as well as on their usability in different situations.

This Master´s Thesis does not focus on risk mitigation or IP enforcement actions when patents are granted. So-called post-grant procedures are mainly out of scope of this study; only small references to those are being made. This study does not introduce alternative dispute resolution methods (e.g. arbitration or mediation services) although they may be used if necessary.

Ghauri (2002, 48-50) introduces different research designs such as exploratory, descriptive and causal research. Exploratory research is usually used when the research problem is badly understood and vague. In descriptive research the research problem is structured and well understood. Third research design is causal in which the research questions are “cause-and-effect” related.

The research design in this study is identified as being descriptive. Qualitative research method has been selected to be the best for this study because of the research question, objectives of the work and previous experience of the author. Ghauri (2002, 87) supports the selection because he states that qualitative methods are usually used when researcher wants to uncover and understand a phenomenon.

1.4. Research question and sub-questions of the study

The main research question of the study is:
How companies can manage risks relating to pending patent applications?

The sub-questions are:

1. *Can pending patent applications be infringed?*
2. *What options companies have in order to minimize the risk caused by 3rd party pending patent applications?*
3. *What options companies have in order to enforce their patent rights?*
4. *How does the legislation differ between the United States and Europe?*

The sub-questions of this Master´ s Thesis are to study whether pending patent applications can be infringed and to identify the actions to minimize risk caused by pending patent applications as well as explain when they can be used. Another sub-question of this thesis is to identify the action to create risk to third parties by using companies own pending patent applications.

One sub-question is also to study how patent law in the United States and European Patent Convention differ from each other when seeking answers to the other sub-questions.

In Europe the European Union (EU) has been the main actor of European IP integration. Despite of EU´ s effort for IP harmonization in Europe, it had to leave many issues to national governments to handle. National governments signed separate arrangement aside from EU. The European Patent Convention (EPC) is one example of such arrangement. (Jolly et al. 2009, 4,6-7,11)

Under the EU system, an EU directive is the tool used to bring closer the IP rights governed by national laws. Directive is never directly applicable and therefore national legislators have multiple options on how to translate the directive into national law. Because of this fact, this Master´ s Thesis concentrates, where possible, to the EPC. An important fact that must be kept in mind is that the EU´ s IP law is only applicable in the EU and its member states.

The European Patent Convention, The United States Patent Act of 1952 and 37 Code of Federal Regulations part1 (rules of practice in patent cases) were studied when building up this thesis. In addition several other literature sources were used in order to gather information on the possibilities of (pending) patent risk management.

1.5. The structure of the study

This chapter has introduced the topic of the study as well as presented the research question and objectives. The chapter has shortly presented the framework of the research and tries to shed some light to the objectives in the following chapters.

The second chapter introduces the basic patenting process and patent application construction. It describes the main patenting process features in the United States and in Europe. When describing the patenting process in Europe, the EPC is taken a starting point although very similar

process is in place in many European countries. The chapter explains the criteria for patentable invention.

Third chapter introduces the concept of risk and especially focuses on IPR risks. Different kinds of aspects are presented when assessing the risk of pending patent application. The three aspects are applicant, legal and claim interpretation. The chapter further examines where and how risky patents can be found.

Fourth chapter presents different methods to reduce the risk of pending patent applications of 3rd parties. The chapter describes the methods and explains why they are seen as risk mitigation actions instead of risk increasing methods. The chapter further explains which actions are viable in the United States and Europe as well as when different methods can be used. The success of each method is also lightly estimated.

Fifth chapter present the other side of coin. It explains how pending patent applications can be used on company´s own benefit. It explains different ways to enforce ones IP rights.

Chapter six introduces two case examples which present risk assessment and the use of risk mitigating actions as well as enforcement practices. One case example focuses on the risk mitigating actions in the United States and the other IP enforcement in Europe.

2 PATENTING

The first patenting system can be recognized to date back to 1474. The Venetian law in 1474 established a positive system for granting ten year privileges to inventors of new arts and medicine. The formal requirements for patenting were not so great at the beginning, but gradually the requirements for registration grew when for example obviousness

requirement was introduced in the 1950s. (Seth 2004, 1-2; Oesch et al. 2008, 40)

Ever since patent rights were recognized, justifications have been given in order to support the system. It has been said that inventors should have some natural rights for their mental work. An inventor may get a monetary reward as well as mental reward by publishing the invention. The most common justification is that patent system encourages individuals and companies to disclose their information instead of leaving information as trade secret. (Seth 2004, 1-2; Haarmann et al. 2007, 59; Oesch et al. 2008, 32)

It is said that patenting stimulates the technical progress in four ways. Firstly is encourages research and invention. Secondly it encourages the inventor to disclose his inventions instead of keeping them secret. Thirdly it offers a reward for the expenses of developing the inventions to commercialization stage. The fourth stimulating factor is that it provides an inducement to invest capital in new lines of production which may not appear profitable if many competing producers embark on them simultaneously. (Seth 2004, 2-3)

2.1. Selected historical points of European and United States patent law

Some points of the German and the United States patent system are introduced shortly. German is taken as an example to present the evolution of the European patent system.

The German patent system was influenced by the developments in the United States. In 1877 first centralized administration for the grant of federal patents was created. At that time patent was granted to first to file rather than the one who had been the so-called first and true inventor. In 1936 the first to invent principle was taken into use. Today Germany is following the first to file principle. German patenting fees in 1936 have been deliberately high in order to avoid trivial patents. Although the

German system was close to the one in the United States it was other ways more strict. The stricter system resulted to lower number of patent grants, but likely higher in their quality and value. (Khan 2010; Haarmann et al. 2007, 22)

The US constitution from 1787 allows states to set laws relating to inventors rights to their invention. Throughout times the United States has favored inventors. The position of an inventor is strong in the United States, which shows for example in that patent applications are firstly owned by inventors before rights are transferred to companies. (Khan 2010; Oesch et al 2008, 41)

The first to invent principle has been dominant in the United States, but first to file principle came in to force 16th of March 2013 after the enactment of American Invents Act.

On the contrary to the early German system, the United States system has tried to introduce affordable fees for patenting. Due to fees and also fairly liberate patenting system, at least over six million patents have been issued during 1970-2010. (Khan 2010)

2.2. Definition of a patent

A patent is an exclusive right granted for an invention. Patent protection means that the invention cannot be commercially made, used, distributed or sold without the patent owner´ s consent. (Arnold & Siedsma et al. 2010, 1) Patent protection must be applied for, unlike for example copyright. Patent is most commonly in force for 20 years from its filing date if all necessary fees are being paid. The 20 year term is applied in Europe and nowadays in the United States as well for those patents which are filed after 8th of June 1995. Filing date prior to 8th of June 1995 means that patent is in force in the United States either 17 years from the grant of the patent or 20 years from the filing date, whichever expires later.

In the United States it is also possible to get extension to the term of patent. The extension is possible to get to patents which have been filed 29th of May 2000 or after that date. Usually the extension of term is granted if the grant of the patent has been delayed because of USPTO. (35 U.S.C. 154 (b))

Patent term adjustments are possible on the following grounds

- USPTO has not started any actions for the application after 14 months from the filing date has passed
- After four months when judgment from court has arrived, USPTO has not made any actions for the application
- USPTO has not granted a patent after three years from filing of the application
- Because of interference proceedings, confidentiality reasons or successful appeals by the applicant the examination of the application has taken more time than normally

(35 U.S.C. 154 (b))

In theory there is no upper limit for the extension of time, but in practice it will settle to reasonable level. Typically the maximum term adjustment is around five years. The patent term adjustment is calculated so that the applicant will get one extra day for one day of delay. If the applicant itself has caused some delays during the examination of the application, those delays will be deducted from the extension days. The USPTO will automatically calculate the possible extension when notice of allowance of patent is mailed to the applicant. (35 U.S.C. 154 (b))

Patent applications (and correspondence with the patent office) are being published after 18 months from their filing date. The patent application as well as all correspondence with the patent office is secret for the 18 month time period. There is no possibility from public sources to even know if some patent applications have been filed before they are published. In the past (before November 2000) United States published only granted

patents and therefore possibility for reasonable royalty did not exist. This has changed and nowadays the U.S and EP have similar practices, but the history in the U.S may still reflect to some actions today.

Because patent is granted for an invention, one must define what an invention is. According to European Patent Office, abbreviated as EPO, the EPC does not define the meaning of invention, but it does provide a non-exhaustive list of subject-matter and activities that may not be regarded as inventions and therefore they are not patentable. An invention can belong to any field of technology. (EPC art. 52-53)

Firstly programs for computer as such are not regarded as inventions. Secondly methods for treatment of the human or animal body by surgery or therapy, and diagnostic methods practiced on the human or animal body. Third field, which is excluded from patentability, is plant and animal varieties and essentially biological processes for the production of plants or animals. Fourth and last field is inventions which are excluded from patentability because of their commercial exploitation would be contrary to morality. (EPC art. 52-53)

In the United States utility patent are awarded for any new, useful and non-obvious process, machine, manufacture, or composition of matter, or any new, useful and non-obvious improvement thereof (Arnold & Siedsma et al. 2010, 1). In the United States on the contrary to Europe, business methods and non-technical computer implemented inventions may be patented.

2.3. Exceptions of exclusive right

The exclusivity of a patent is not absolute. One exception is that acts done privately and for non-commercial purposes are out of the scope of patent protection. (Norrgård 2009, 91) In practice this means that natural persons

may manufacture for example some product in their garage without risk of becoming sued for patent infringement.

Another exception is when the patent holder sells (or gives permission to sell) for example its product to other countries, the buyer may use or sell the purchased product further (Norrgård 2009, 92-93; Bainbridge, D. 2009, 833). This principle is called exhaustion of rights. Without the mentioned principle, the buyer could not in practice use or sell the purchased product.

An example of exhaustion in practice is case where someone has bought a car from licensed manufacturer and may use it without any obligations to pay royalties to the patent applicants. Another example is if someone buys a CD from a record shop. The buyer may play it multiple times and resell it because the right holder´ s exclusive right has exhausted upon the first lawful sale. (Rahnasto 2001, 138)

An important exception of the exclusivity is the use of the invention is experiments and tests. In other words acts done for experimental purposes relating to the subject-matter of the patented invention, is not covered by exclusive right (Norrgård 2009, 96-97). This exception enables companies to do experiments and tests in order to improve or design around the (patented) invention.

Patentable invention must be novel, which is one of the principles of patentability. In Europe, the invention must not have become public before the filing date of the patent application. (Norrgård 2009, 102-103) If a company A has manufactured its product for already 20 years and today Company B files a patent application concerning the same product which Company A is manufacturing, according to the prior use principle, Company A can continue its production without risk of patent infringement.

Prior use or prior user rights are one exception to exclusive right. Prior user right means that when someone has been using the invention already before someone else has filed a patent application on that same invention (Norrgård 2009, 102). The prior user right is recognized both in Europe and the United States.

In addition to the previously presented exceptions, there are also other exceptions, which are not explained in detail since they are not essential for this thesis.

Other exceptions relate to the manufacture and delivery of pharmaceuticals as well as their manufacture in pharmacy. Some exceptions exist relating to farming. Different countries have also rights to restrict the exclusive rights of an applicant according to the TRIPS agreement. (Norrgård 2009, 90-91)

2.4. The basic principles of patentability

In addition to list of what cannot be patented, there are basic principles of patentability; they are novelty, inventive step (in the US a term non-obvious is used) and industrial applicability.

An invention must be new on the day it is filed to patent office. Everything, that was made publicly available before the priority date of a patent patent application is considered relevant when assessing the novelty of an invention (Harguth 2011, 62). In other words, everything that does not belong to the known state of the art is considered novel. (Oesch et al. 2008, 78)

State of the art is everything that has been publicly known prior to the filing date. State of the art can be in written form or as an oral presentation, also information published in electronic format is considered state of the art (Oesch 2008, 79; Patent Act, Section 102). Materials considered to be state of the art can be found in any country and in any language. This means that for example presentation held in Germany can be novelty destroying for patent application filed in Finland.

In general, if state of the art document is for example in a small library where only one person in a year visits, the document is novelty destroying

despite of the fact that nobody has looked in it. Essential is the fact that anyone could have had the possibility to borrow or look into the document, so it was publicly available.

So-called absolute novelty requirement is known in Europe. It means that if an inventor or anyone publishes his invention before filing it to the patent office (without breach of confidentiality agreement), the invention is not considered novel anymore. (Oesch 2008, 79) This is on the contrary to the United States. The United States have relative novelty requirement. In the United States they have so-called grace period. If the invention is being published (authorized or unauthorized disclosure) before filing it to the patent office, a patent application can still be validly filed if the publication has been made during the grace period (Arnold & Siedsma et al. 2010, 1). The grace period is one year.

EPC article 55 states that an invention is considered novel, if it has been disclosed no earlier than six months preceding the filing of European patent application if the disclosure was due to

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 recognized, international exhibition falling within the terms of the Convention on international exhibitions signed at Paris on 22nd of November 1928 and last revised on 30th of November 1972.

"Abuse" can mean authorized or unauthorized disclosure as long as applicant experiences damages (Visser 2011, 100-101). The invention is not published if people view or hear of the invention under the influence of confidentiality agreement. The few exhibitions that point B can be applied are listed each year in Official Journal of EPO issue 4 under international treaties. Legal predecessor mentioned in this context is most often the inventor (Visser 2011, 100-101).

2.5. The basic structure of patent publication (EPC)

Patent publication consists of abstract, description, claim(s) and possible drawings. Abstract merely serves for use as technical information. The abstract must be preceded by title of the invention. The abstract should indicate the technical field of the invention, unless clear from the title. (EPC art. 78.1, art. 83-85)

In the description the applicant must specify the technical field to which the invention relates. Applicant must also indicate the background art which he is aware of to the extent that it is useful for understanding the invention. The description has to indicate the technical problem the invention is designed to solve and describe the solution. Applicant should state any advantageous effects his invention has compared with the prior art. (EPC art. 83-85)

Applicant should briefly describe what is illustrated in the drawing(s) if there is any, describe in detail at least one way of carrying out the claimed invention and indicate how the invention is susceptible of industrial application. (EPC art. 83-85)

Claims must define the matter protection is sough. Claims must be clear, concise and supported by the description. Claims should consist of two parts, a prior art portion and a characterizing portion. The wording used in the claims must leave no doubt as to their meaning and scope. All inconsistencies between the claims and description must be avoided. (EPC art. 84)

In Europe claims with two parts are commonly used. Two-part claims are called Jepson type of claims. The first part of claim is prior art portion and the latter part is characterizing portion. (Hakkila 2006, 5) Below is an example of Jepson type of claim.

A cultivation substrate (1) comprising one or more inner structures (5) formed of web-like or sheet-like inner material (5a) with a dry content of at least 40 wt% of natural fibres,

characterized in that

the inner structures (5) of the cultivation substrate (1) comprise spaces and/or gaps (9), whose proportion at the equilibrium moisture content is at least 20% of the volume of the cultivation substrate (1), and

the inner structures (5) of the cultivation substrate (1) are arranged, at least primarily, substantially vertically in the cultivation substrate (1), wherein also said gaps/spaces (9) of the cultivation substrate (1) are primarily vertical. 2. The cultivation substrate according to claim 1 , characterized in that the proportion of the spaces and gaps (9) at the equilibrium moisture content is at least 50% of the volume of the cultivation substrate (1).

Figure1 : An example of two-part claim construction

2.6. The basic structure of patent publication (US)

The patent specification in the United States consists of abstract, description, claim(s) and possible drawings. Title of the invention may be accompanied by an introductory portion stating the name, citizenship, and residence of the applicant. The abstract should be objective informative statement, condensing the disclosure in clear and concise language. (Arnold & Siedsma et al. 2010, 15)

The description must describe the invention, the manner and process of making and using the same in full, clear, concise and exact terms as to enable any person skilled in the art to make and use the same. The best mode devised by the inventor of carrying out his invention must be set forth. The best mode requirement is a safeguard against the desire on the part of some people to obtain patent protection without making a full

disclosure as required by the statute. The requirement does not permit inventors to disclose only what they know to be their second-best embodiment, while retaining the best for themselves (Arnold & Siedsma et al. 2010, 14; 35 U.S.C. 112)

The claims of an application must conform to the invention as set forth in the remainder of the specification, and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description. (Arnold & Siedsma et al. 2010, 9) Claims should preferably be arranged in order of diminishing scope so that the first claim presented is the broadest. Product and process claims should be separately grouped.

On the contrary to Europe, claims contain only one part. One part – claims are called Markush type of claims. USPTO accepts Jepson type of claims as well. During the examination of US patent application, the Markush type of claims are usually easier to defend because there is no prior art portion (Hakkila 2006, 5). In other words in Markush type of claims the applicant has not pointed the prior art in any way as on the contrary to the prior art portion in Jepson type of claims. Below is an example of Markush type of claim.

A label adapted to be attached to the surface of an item, the label comprising an adhesive layer (2) and a plastic facestock layer transparent to visible light (4), wherein the facestock layer comprises starch based polymer and the label is arranged to be removable from the surface (3).

Figure2 : An example of one-part claim construction

2.7. Patenting process in Europe

Any legal or natural person may file a European patent application. There are no requirements relating to the nationality or the residence of the

applicant. (Haarmann 2007, 112) European patent can be granted for the contracting states to the EPC at the applicant´ s request. The up-to-date list of EPC member states may be found from http://www.epo.org/about-us/organisation/member-states.html

There are several formal requirements when filing a European patent application. The following paragraphs will only concentrate on the main events of the procedure from filing to patent grant.

European patent application may be filed with the EPO in Munich, its branch at The Hague or its sub-office in Berlin. Application may also be filed with the central industrial property office or other competent authority of a contracting state if the law of that state so permits or prescribes. All divisional applications must be filed direct with the EPO. (EPC Art.75(1-2) & Art.76(1))

The European patent grant procedure is an examination procedure. It begins with the examination of formalities and continues to a mandatory search. The first stage of procedure comprises examination on filing, formalities examination, preparation of the European search report and a preliminary opinion on patentability. (EPC Art.16, 17, 90-93)

The second stage comprises substantive examination and grant. Examining divisions are made up of three technically qualified examiners, who may if necessary be joined by a legally qualified examiner. The result from examination is either patent grant or refusal. (EPC Art. 18, 94-98)

The examining procedure is basically a written discussion between the applicant and the examiner. The applicant should try to deal with all examiners objections. The leading principle of examination procedure is that the final result (grant or refusal) should be reached in as few actions as possible. It is important to understand that the examination procedure usually takes many years, in average 5 years. Another important matter is

that the claims, which define the scope of protection, are being modified during the examination.

A granted EP patent is in force maximum of 20 years from its filing date if all necessary fees have been paid. The applicant must pay annual fee in order to maintain the patent.

2.8. Patenting process in the United States

The patent authority in the United States is the United States Patent and Trademark Office, which is agency within the Department of Commerce.
The grant procedure in the U.S. is also an examining procedure. It begins with examination of formalities and continues with patentability examination.

The applicant, inventor, patent attorney and other staff employed by the assignee has the duty to disclose information. Information Disclosure Statement (IDS) refers to a submission of relevant background art or information to the United States Patent and Trademark Office (USPTO) by an applicant for a patent during the patent prosecution process. (37 C.F.R. §1.97)

The duty to disclose information exists with respect to each claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. (37 C.F.R. 1.56)

In the U.S. there is a possibility to file a utility patent application, which is “the basic patent application” or so-called provisional patent application. The provisional patent application never matures into a granted patent. The applicant must file a non-provisional patent application within one year of the filing date of the provisional application. (35 U.S.C. §111(a)(b))

The provisional application will not be examined. Therefore there is no duty to disclose information. The main benefit for filing a provisional

application is to get early effective filing date. The formal requirements of the application are also fairly low, which mean lower costs for the applicant. (35 U.S.C. §111(a)(b))

The examination procedure has similarities with the EPO. The examiner gives maximum of two non-final actions (in Europe usually referred to as office actions) and one final action. If a patent will not be granted after the previously mentioned actions, the applicant has possibility to file request for continued examination (RCE). The main purpose of the RCE process is that the applicant does not have to file continuation application, but merely pay a fee and request for RCE. (37 CFR 1.114; 35 U.S.C §132)

If a granted patent will be maintained, the applicant must pay maintenance fees; 4th, 6th and 12th year. Nowadays patents granted in the U.S. are in force maximum time period of 20 years from filing date of non-provisional application. A day, or even years of extension, is possible if there is delay of the USPTO, as previously explained. By filing a provisional application, a patent term endpoint may be extended by as much as 12 months. (35 U.S.C. §111(a)(b))

It is important in the United States to the applicant to remember to report the information disclosure statement (IDS) and disclose all prior art known to him (Johansson 2006, 16). The best mode is important to mention in the application description. As explained earlier the inventors´ position is still strong in the United States and therefore it is very important to name all true and known inventors in the application. If the inventor information is not correct, it may be ground for the annulment of the application or patent.

2.9. Building up a patent family

Below is an image which describes an example of patenting procedure and build-up of so-called patent family. In Europe an invention is company confidential and it does not give any formal protection, this principle is called first-to-file. After filing a patent application a provisional protection period begins when few conditions are met. It is important to note that the application is not public until 18 months from the filing date.

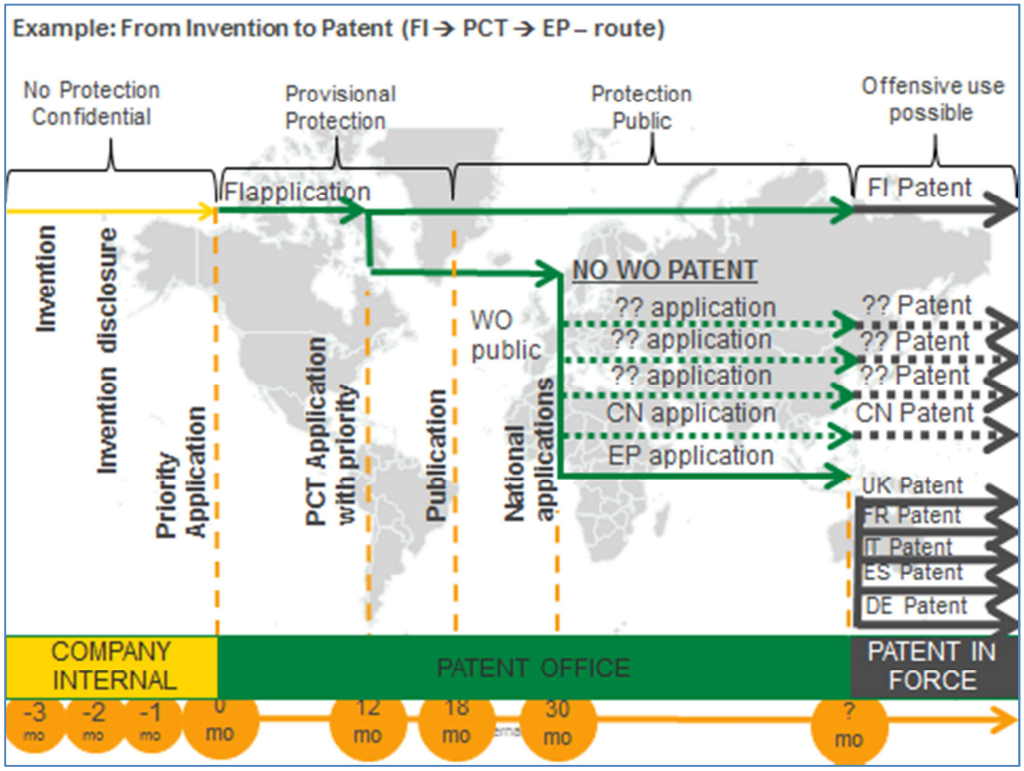

Figure3 : From invention to patent

If the applicant wishes to apply patent protection also in other countries, it must be done within priority year. Priority year begins from the filing of first patent application to any country. In the above example the applicant has continued to apply patent protection within priority year to PCT phase. PCT or Patent Cooperation Treaty is a route when applying patents to several countries. PCT application itself is never granted, but it is merely a phase.

After 30 months from the priority filing date, the applicant must decide where to file national applications. In EP patent application there is collective examination, but EP patent grant results to a bunch of national patents.

2.10. Summary

As described visually in the below image, the lifecycle of a patent may be divided into three main phases. The first phase is so-called secrecy period which last 18 months from the filing date. During this period, the public do not have any information that patent applications have been filed.

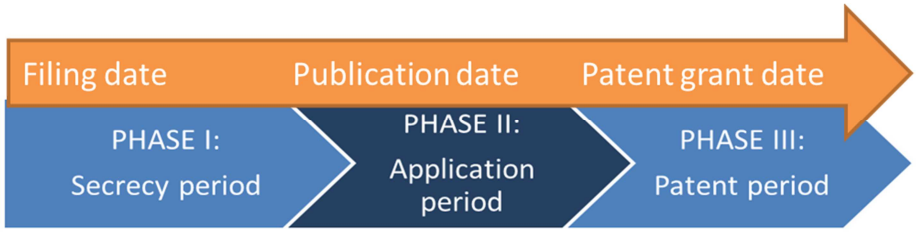

Figure4: Phases

The second phase is so-called application period, which extends from publication of the application until the grant of the application. When the application is published also all correspondence between the examiner and applicant are being published. The second phase usually lasts for several years. Patent applications which are at this phase are also in the focus of this thesis.

The third phase extends from grant to the expiry or lapse of the patent. At this phase patent infringement is possible.

A patent must fulfill novelty, inventive step and industrial applicability requirements. When an examiner in the patent office examines these elements of patentability, the claims of the patent application are subject to change. Claims are the part of patent application or granted patent which define the scope of protection.

3 IPR RISKS

The idea of risk management is to keep the risk under control, not necessarily to eliminate it (Simelius 2008, 23). Risk caused by pending patent applications is a risk among others in a company´ s business. An integral risk management approach will allow the company to stay on top of risks and choose the level of risk it is willing to tolerate that is appropriate for its business.

As any other risks, patent risks can also be prioritized. Carey et al. (2002, 1) propose a two-by-two diagram for the prioritization of risks. The risks are prioritized according to their business impact and likelihood of the risk of occurring. Below is a risk prioritization figure.

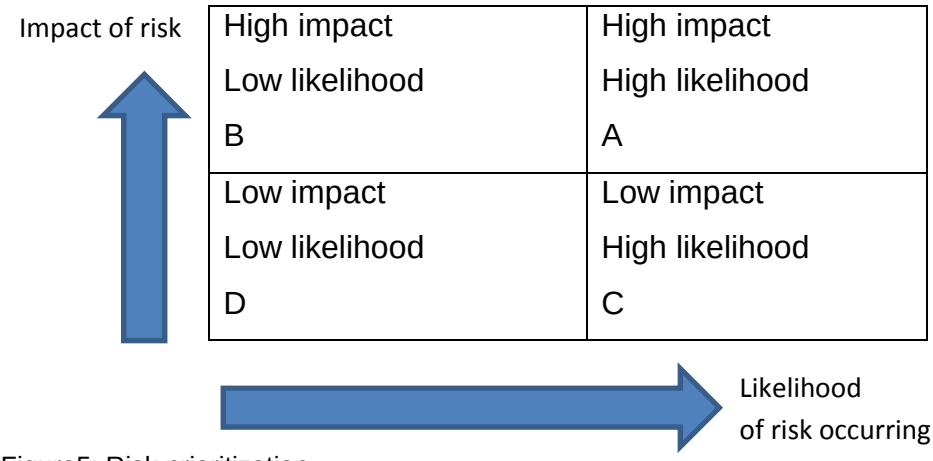

Figure5: Risk prioritization

A risk is the probability of an event or situation occurring coupled with an estimate of its impact, before taking into account any risk control strategies. Box A shows risks, which require immediate actions. Box B shows risks, which need risk mitigation plan. Box C describes risks where actions should be considered. Box D shows risks which are of lesser concern, but do require periodic review. (Carey 2002, 2)

There are different aspects of patent risks. The quality of an application or patent is important. Poorly drafted patent or application may not hold in court or in other proceedings. (Reuvid 2010, 121) Patent portfolio must also be taken into account. It is more difficult to remove a threat from a portfolio of 10 patents or applications than it is to fight off a single patent. Another fundamental aspect of patent risk is the technology it relates to. Some technologies are easier than others in terms of detecting or avoiding an infringement. The above mentioned aspects are fairly stable and objective aspects of IPR risk.

There are also aspects relating to assignee or owner of a patent or application as well as the countries in question. These IPR risks can be highly dynamic and unpredictable in nature.

3.1. Likelihood of risk when examining the applicant information

Patent risks can be studied from three different viewpoints; applicant, legal aspect and technical impact of the claims. When assessing the likelihood of patent risk to occur, the applicant information can be used. An applicant may be an individual person, small company, large company etc. All intellectual property rights must be respected, but probability and likelihood of risk is usually higher when the applicant is a company, which owns several IP rights in the same field of business with you.

The amount of pending applications and granted patents of the third party, in the field of business in question, effect to the business impact. The business relationship plays also a role. The risk is higher if there are many pending and granted patents in the field of business of interest and they are mainly owned by one single company, which is a direct competitor. If the applicant is for example a supplier, the likelihood of risk is not necessarily so great.

If there are many pending and granted patents in a field of technology, it can be analyzed which applicants have most of the patents. It may be harder to minimize risk caused by an applicant which has many patents than an applicant with only one patent.

The behavior of an applicant may be estimated by evaluating the relationship with your company and by studying in how many litigation, opposition or jury cases the company has been involved in. IT is important to study whether the competitor has been the plaintiff or a defendant that may reveal the behavior and character of the competitor.

3.2. Impact of risk when examining the legal aspects

Patent applications are always, at the end of the day, national applications. As presented earlier in figure1, there are certain time limits that must be followed if an applicant wishes to apply patent protection in several countries.

It is important to check in which countries the patent is being applied in and to which countries it can possibly be extended to. It is also possible that the patent family contains already granted patents, which will help in interpreting the final claim scope in that specific country. Different fees must also be paid in order to keep the examining procedure, granted patents and pending applications alive.

When the facts of the patent family have been clarified, a company should make a geographical examination of its business. If for example there are pending patent applications in Germany and France, but the business (manufacturing, sales etc.) of the company is inside Finland, the pending patent applications do not have any effect of the current business. If a company on the other hand, plans to start selling its products to Germany, it has to take the pending application (of a competitor perhaps) into account.

Another factor that is related to countries is that different countries have very different legal proceedings. The legal system of a country may or may not favor the domestic patent assignee (Reuvid 2010, 121). Naturally, language is one aspect. Many translations and translators may be needed.

3.3. Impact of risk when interpreting claims

In order to determine the scope of protection and therefore determine the bounds and limits of a patent claim, the claims need to be interpreted. The EPC states that any infringement of a European patent shall be dealt with by national law. The EPC lays down two rules for the substantive law during a national infringement procedure: the scope of protection (Art. 69) and the product-by-process protection (Art. 64(2)). In an infringement procedure the EPO is only competent to give a technical opinion on request. All other questions must be solved by national law. (Manderieux 2009, 262; EPC Art. 69(1), 64(2), 25)

The scope of protection guided by EPC Art. 69 is explained in the next chapter in more detail. Product-by-process claim is such where the product is defined at least in part in terms of the method or process by which it is made (Fox 2013, 520).

The extent of protection is determined by the claims. The description and drawings can be used to interpret the claims. There is some guidance in the EPC (Art. 69) which already aims at the national infringement courts trying to harmonize divergent claim interpretations (Manderieux 2009, 262). In some cases for example the German claim interpretation has been very broad, protecting a general inventive idea, whereas a British claim interpretation has been very narrow, adhering to the exact wording of the claims. Protocol on the interpretation of Art. 69 further strengthen the harmonization of claim interpretation.

One basic principles established by the EPO on claim interpretation is that a patent must be construed with a mind willing to understand and not a mind desirous of misunderstanding (Manderieux 2009, 263). In other words, using a somewhat twisted view of the claimed subject-matter to get out of the scope of protection is not appropriate.

Another EPO principle is that the patent application document acts as its own dictionary. A specific meaning of a term as defined in the description prevails over its common meaning in the art. (Manderieux 2009, 263)

The claim interpretation of a granted patent publication is rather complex. Therefore when trying to interpret the claim of pending patent application, it is even more complex. Firstly a company needs to estimate what claim set to interpret. It is possible that there is only the original set of claims available if the examination of the application has not yet been started. The estimation of final claim scope may be easier if the examination procedure has already been started in other countries belonging to the same patent family.

In the United States the claims define the scope of patented subject matter and therefore the scope of the granted patent. The written description part of the specification itself does not delimit the right to exclude. That is the purpose of claims. (Fox 2013, 462-463)

The words of the claims are given their ordinary and customary meaning, which can be summarized to a question; what is the meaning that the term would have to a person ordinary skill in the art in question at the time of the invention. On the other hand when interpreting claims the following question is raised; how a person of ordinary skill in the art would have understood claim terms at the time of the invention. (Fox 2013, 496)

If the applicant has used terms with a different meaning (explained in the specification of patent application) that they would otherwise have to a person skilled in the art, the claims are interpreted by “person skilled in the art” based on the new meaning of the term. (Fox 2013, 502-503)

Further on all the previously explained claim constructions and interpretations, there is doctrine of equivalents, which is applied both in the US and EP. Under some limited circumstances, a patent claim can be infringed under the doctrine of equivalents even though it is not literally infringed (Fox 2013, 569). The doctrine of equivalents is good to keep in mind even if reading patent applications claims instead of claims of granted patents.

The doctrine of equivalents allows the applicant to claim those insubstantial alterations that were not captured in the drafting of the original patent claims but which could be created through trivial changes (Fox 2013, 569). An equivalent element is generally considered if the equivalent element performs substantially the same function in substantially the same way and produces substantially the same result as the element as expressed in the claim. An equivalent element is also considered if it is obvious to a person skilled in the art that the same result as that achieved by means of the element as expressed in the claim can be achieved by means of the equivalent element. (EPC Art. 2)

3.4. Where and how to find risky patents?

The patent statistics from the US and Europe shows the constant growth on the number of patent application filings. Below are two charts showing the last five year filing activity in the US as well as in the EP. (European Patent Office 2013; USPTO 2013)

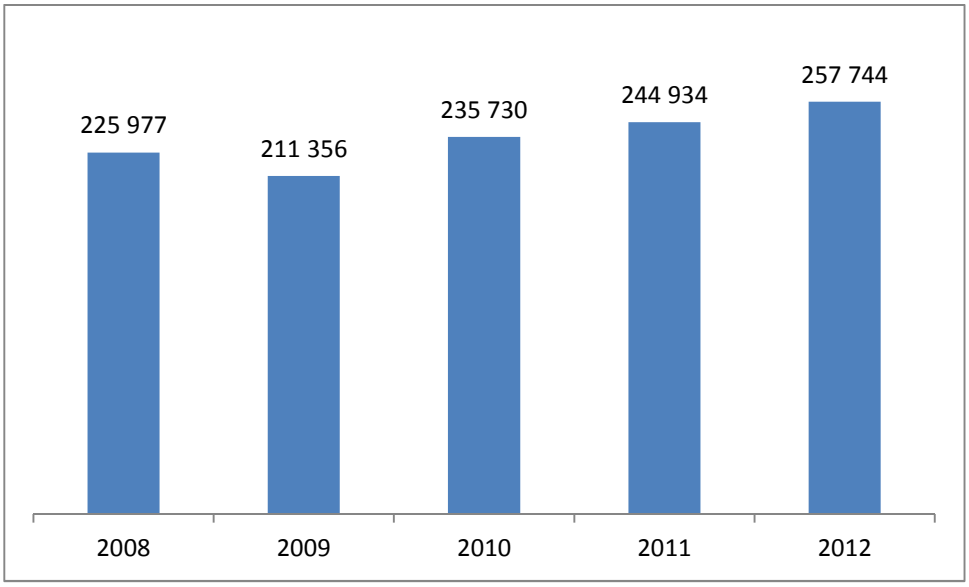

Figure6: Total European patent filings

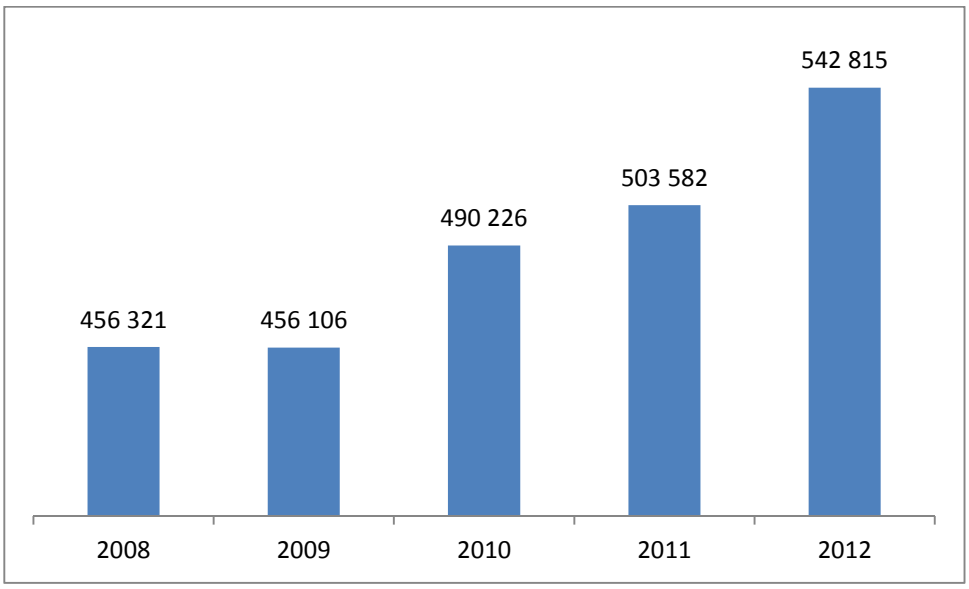

Figure7: Total US patent filings

The growing amount of patent applications does not help companies to identify risky patents. No matter of the size of the company it is challenging to find the patent applications, which would impose the highest risk.

Patent legislation does not affect to natural persons if they do not practice commercial business. In other words any individual may copy inventions on their own private use. Companies are the ones that have the responsibility to monitor the IPR environment.

When looking at the yearly filing figures from the US and EP, it is clear that companies cannot find all risky patents. Therefore it is important to try to find the peak of the risk and analyze the risk based on the previously described points; applicant information, legal aspects and claim interpretation.

There are both free of charge and commercial patent search databases, which enable both SME and large companies to find patents and patent applications. The basic difference, of free of charge and commercial databases, lay in their search functionalities, not so much on their coverage. Because SME companies have lesser resources, they usually have to rely more on external patent agencies in order to be able to assess the riskiness of patent applications. Larger companies have internal IPR departments, which may make the assessments. Large companies usually also have more money, when the usage of external patent agencies is more common as an extra resource.

4 OPTIONS TO MINIMIZE RISKS CAUSED BY PATENTS AND PATENT APPLICATIONS

As introduced earlier, claim interpretation has its own complexity. A company has to take into account whether it is interpreting the claims of a granted patent or a pending application. Furthermore it has to take into account which country is in question.

The claims of granted patent are easier to interpret than of pending application since the claims are already final. Sometimes there is such wording or sentences used that the reader cannot say for sure what the holder of the patent have intended to claim.

In addition that companies´ have to constantly analyze granted patents, they also have to deal with high volume of pending patent applications where the claim interpretation is more challenging. The claims are under

examination in the patent office and no final form of the claims is available. Because the final form of the claims has to be predicted, there is always some amount of risk involved. This chapter presents some ways to mitigate the risk caused by pending patent applications.

4.1. Designing around

Designing around is a term used in the IPR field. It means to invent an alternative way of manufacturing something or in case of a product to change it so that it does not contain all the features of competitors´ patent or patent application (Nichols 2002, 1).

If the claim interpretation has been made reliably, a company may do actions, which will put its business out of the scope of the claims. Naturally there are situations that a company does not want to or cannot change its process or product, but sometimes a small change may almost eliminate the risk of possible future patent infringement.

When companies are planning to design around the claims of pending patent applications, they can either make one or several plans. Naturally they have to start to follow one, but some plan Bs´ are such that if plan A is not working they can fairly easily change to plan B. Depending on the state of whole patent family of the pending patent application in question and of course of the state of the pending patent application itself, companies are able to make estimate of the final claim scope on different level of reliability. Sometimes when estimating the future final claim scope of the application, companies can only give several estimations. The described situation occurs often if the patent application is very new and yet unexamined in the patent office. In those cases the applicant has possibility to limit and steer the claim scope to different directions within the given law frame.

When designing around the company has to fully design around each and every independent claim of the pending patent application. They also have to take into account the doctrine of equivalents. (Nichols 2002, 2) If a patent claims recites a fastener, it can mean for example nail or screw. Perhaps later when the patent is granted, the applicant has had to restrict the claims to for example screws only. Screw and bolt may also been seen as equivalents according to the doctrine.

4.2. Back-pocket prior art

Back-pocket prior art basically means that a company gathers possible prior art just in case. Since the claim scope of the third party pending patent application is moving, the prior art gathered should be updated regularly. Another moving element is the product or process of the company. If the product and/or process is not yet clear for the company, it is very difficult to estimate if there is or will be an overlap between company´s operations and the future third party patent.

Back-pocket prior art may be good to possess if at a later stage an infringement accusations occur from the third party. In such a case a company would already have possible prior art, which could help in the negotiation situation. If the material is strong, the third party probably wants a company to keep that information on itself and not to give it to everyone´s disposal.

The outcome of the negotiation can be favorable license agreement (if the material is strong) for the company or if a settlement is not reached, a company can file public opposition. A company can prepare itself in advance by gathering back-pocket prior art, but the effort versus effect should be considered.

In the United States, the possession of back-pocket prior art may be risky. If the back-pocket prior art is weak, a company may be later found guilty of patent infringement. The possession of prior art is an evidence that the

company knew of the third party´s patent application. If a company is found to be an infringer, it has to pay damages together with interest and costs fixed by the court. In addition to previous, the court may increase the damages up to three times the amount found or assessed. If triple damages are being imposed, usually there is a question of willful infringement. (35 U.S.C. § 284)

4.3. Third party observations

In the EPO and in USPTO, it is possible to file third party observations or submissions (as they call it in the United States) during the examination of the patent application. If a company has an EP or US patent pending, any third party can anonymously send prior art material to the examiner. The third party observation in EP must contain the prior art documents, but also statement of grounds. In the US no statement of grounds is needed, just pure delivery of the prior art of maximum of ten documents. (EPC Art. 115; R.114; 37 C.F.R. § 1.99)

The success of the third party observation depends somewhat on timing. The examiner has no obligation to take the materials into account and therefore if the materials are submitted at a later phase of the examination, the examiner does not necessarily have high motivation to take the materials into account. On the other hand, if the materials are submitted in at early stage of the examination (just after the application has become public), the likelihood of success is greater. The materials are notified to the applicant, who has the opportunity to comment them.

It should be considered whether to reveal a company´ s identity or remain anonymous when filing third party observations. If a company remains anonymous, the third party does not know that the company is interest of the same technical field. If a company decides to reveal its identity, it may intimidate competitors with its well-known name. The filer of a third party observation is not part of the proceedings (Harguth 2011, 36).

It should be carefully considered whether to file a third party observation. The possible prior art to be delivered should be evaluated since if the material is not considered by the examiner, the usability of the same material in post-grant proceedings is rather weak.

4.4. Opinions

Different types of opinions may mitigate IPR risk. There are basically two types of opinions which are used in risk mitigation; non-infringement and invalidity opinions. Invalidity opinion is sometimes also called freedom to operate opinion. The purpose of these opinions is explained in greater detail in the upcoming chapters.

According to Gills (2003, 3) opinions should be requested in the U.S. at least when a company has received a notification of infringement. She continues that notification usually comes either in form of a letter (cease and desist letter) or infringement suit. Opinions are more commonly used in the U.S. because in the U.S. there is possibility that the infringer has to pay triple damages if found guilty of patent infringement.

Competent opinions include at minimum the following points;

1. Opinion must not be unsupported. The opinion should not contain only merely conclusory statements without discussion of facts or only a superficial analysis.
2. Opinion should include the claim construction of the patent in question. Competent opinions expressly construe every term of the patent´ s claims. The construction must be based on proper evidence, including the patent´ s specification and the complete file history of the patent application.
3. Opinion should discuss the up-to-date and relevant law and correctly apply the law to the facts to reach the conclusions.
4. The preparer of the opinion should be competent. Opinions are usually prepared by an external patent attorney, but nowadays in-

house patent attorneys are also acceptable. In case of United States patent application, a licensed U.S. patent attorney with correct technical educational background is needed. In case of European patent application, a licensed EP patent attorney with correct technical educational background is needed.

5. Opinion should conclude with reasonable degree of certainty, although overly certain opinions may suspect.
6. Opinion should be in writing.
7. Opinion should be delivered prior of the potentially infringing activity.

   (Fox 2013, 8-9; Nagori 2008, 9, 12)

The non-infringement or invalidity opinion should take into account the above discussed point. The sections of either opinion should include the following:

1. Description of the technology
2. Search methodology and findings
3. Relevant laws (for example legal standards and infringement)
4. Legal principles for infringement analysis

(Nagori 2008, 9-10)

The description of the technology includes the description of the applicants´ technology in question. It may include drawings of photographs, which may be helpful. (Nagori 2008, 9) The attorney himself may conduct search for prior art or he may use the help of search specialist of another company. Although the applicant supports the opinion preparing attorney, in case of invalidity opinion the attorney himself should complete the information provided by the applicant. The search methodology and relevant findings should be disclosed in the opinion (Nagori 2008, 9).

Relevant points of law should be pointed out (Nagori 2008, 9). In case of the United States, usually 35 U.S.C. is needed to study. In case of Europe the national law of specific countries needs to be examined. Some points

may be made to the EPC if the country in question is part of the EPC contracting state.

4.4.1. Non-infringement opinion

A non-infringement opinion may be requested if there is uncertainty of whether company infringes a patent application or granted patent. There may be for example ambiguity in the claim language which results to uncertainty of the risk. Most often opinions are requested when there is a granted patent, but it can be requested for pending patent application as well. If opinion is requested for pending patent application, a company must determine/estimate the potential scope or relevance of the claims of pending patent application that might be granted. Non-infringement opinions are even more often used in the United States, because in that way a company can show that it is not willfully infringing the patent.

The non-infringement opinion should include all the points mentioned in section 4.4. In addition to those points, the non-infringement opinion should take into consideration literal infringement or infringement under doctrine of equivalents. It should also describe the potentially infringing product or process and compare the construed claims with the potentially infringing product or process and address at least every independent claim (Fox 2013, 9-10).

The non-infringement opinion should include claim construction and claim comparison. Claim construction means that the claims are divided into a table. When the claims are divided into parts, it is easier to start the interpretation of the claims.

To construe a patent claim both intrinsic and extrinsic evidences can be analyzed. Claims, specification and prosecution history are intrinsic evidences. Extrinsic evidences are for example expert opinions or testimonies. (Nagori 2008, 10)

The second part includes the claim comparison. The claims are tested in order to see whether they describe the product or process under consideration (Nagori 2008, 10). In this part the claims are studied in case for literal infringement or infringement via doctrine of equivalents. The claim interpretation as well as the doctrine of equivalents was introduced earlier in chapter 3.3.

4.4.2. Invalidity opinion

Invalidity opinions can be requested for both EP and US applications. Also in this case invalidity opinions are more often requested for granted patents, but they can also be used for pending patent applications.

An invalidity opinion should be considered if the claims of the pending patent application are broad (even after some examination results) or if a company is implementing or will implement in the future, the invention described in the claims. The invalidity opinion is being prepared by licensed patent attorney of that specific country with correct educational background (Gilles 2003, 10).

On the contrary to non-infringement opinion, a company does not have to disclose its product or process information to the attorney. It is advised that all possible prior art is being given to the attorney, not just what a company feels that is relevant.

The invalidity opinion examines if the estimated claim scope of the future patent is valid. If the application will be granted someday, with same claim scope as was predicted, the invalidity opinion is a very good basis for opposition in Europe. In EP there is a post-grant procedure called opposition period. Opposition may be filed during 9 months from the date of grant of the patent (Kuilen 2012, 1). The opposition period is not explained in more detail in this thesis, since it is a post-grant procedure.

The invalidity opinion should include all the points mentioned in section 4.4. In addition to those points, invalidity opinion should compare the construed claims with the prior art and/or with other invalidating events. Support for the claims from patent´ s specification should be checked. The opinion should address every claim and in determining obviousness (inventiveness) one should consider indicia of non-obviousness to the extent such information is known or knowable as of the date of the opinion. (Fox 2013, 10-11)

4.5. Licensing

Licensing is seen as risk mitigating action at this context. Naturally there are different motivations for licensing, but in this case the perspective is in minimization of IPR risk. An applicant may want to start negotiating for license from a competitor before the competitor contacts the company for potential patent infringement. The monetary price for the license agreement may be lower if the company makes the first contact. In case the competitor notifies company of patent infringement, the licensing price may be much higher since it is possible that the company truly needs the license, especially if their production or product is dependent on it.

Rahnasto (2001, 165) introduces that a company takes a license if cost of designing around is greater than the cost of lost opportunity and if cost of lost opportunity is greater than the cost of license. He admits that when evaluating different alternatives, a risk factor would be attached to the calculations.

One possibility to get a technology at a company´ s use is to license IP rights. A license may be limited to certain activities, in certain markets and for a specified time period. (Manderieux 2009, 203) The convenience of the license agreement is depending on the terms and conditions of the proposed license, not to mention the time and effort needed to obtain it.

Another option related to licensing is cross-licensing. Cross-licensing requires a patent portfolio of a company that is of value to the potential licensing partner. (Manderieux 2009, 203) With cross-licensing companies can complement their patent portfolios (Lo 2013, 58).

Usually both licensing and cross-licensing negotiation are complex and time consuming. The negotiations may last for several months. Depending on the situation, the licensing option may still be most preferable. The situation may although be more complex if a company needs licenses from many different parties (Manderieux 2009, 203).

There are different kinds of licenses such as technology or patent licenses. Patent licenses are narrower than technology licenses. (Oesch et al 2007, 13-16; Oesch 2007, 80) Interesting question is licensing of pending patent application or patent family. The price of the license is most likely different if the license concerns already granted rights or only pending rights. In a patent license the licensee gives the licensor a permission to use licensee´ intellectual property without any sanctions from the licensee.

Technology license is wider than patent license. Technology license contains different kinds of rights such as patents, know how, designs and computer programs. (Oesch et al 2007, 13-16; Oesch 2007, 80)

The United States Supreme Court has defined a patent license to be “a mere waiver of the right to sue” (Oesch et al. 2007, 111). From licensors point of view the statement means that licensor has only given up his right to sue the licensee. The licensor promises not to sue the licensee for such actions that fall into the scope of the exclusive right of the patent.

License negotiations and license agreement drafting are complex processes. In view of intellectual property and business in general, the negotiation of payments (royalties) is interesting. When considering different options to minimize IPR risk, of course other things than purely monetary values must be taken into account, although it plays fairly big role when making business decisions. It should also be kept in mind that

many different risk mitigation tools may be used, some even simultaneously with others.

When negotiating of technology license, royalties more commonly paid than fixed lump sums. The parties should try to get a common view of the value of the intellectual property. Most commonly used way to calculate the value of intellectual property is to calculate the estimated income (from the licensing period) minus basic costs, taxes and other compulsory payments (Oesch et al. 2007, 27-28). Royalties are usually %-amounts of for example net sales before taxes.

Companies should bear in in mind that the EU´s competition law may have to be studied in order to make sure that the agreement does not contain invalid clauses. There may be clauses in license agreements relating to pricing and distribution of goods (Oesch 2007, 78-79). So-called non challenge clauses, which forbid the licensee to file a complaint for invalidity of the patent, are forbidden (Fahllund 2013).

So-called grant-back clauses can be used. It means that the licensor gets rights to possible improvements made to invention by the licensee (Oesch 2007, 78-79). According to new competition rules, as of 1st of May 2014, licensor cannot demand for exclusive license in grant-back situations (Fahllund 2013).

At the moment the EU (European Commission 2003), has published a new draft of technology transfer block exemption which indicates that regulations are lively. When entering into a license agreement, the above mentioned points are good to keep in mind. A competent legal counsel is recommended to draft the agreement, but companies should be aware of certain limitation that may occur while negotiating or drafting an agreement.

In the United States there are antitrust guidelines for the licensing of intellectual property. The guideline is issued by the U.S. Department of Justice and the Federal Trade Commission. It contains similar points as in Europe, but naturally when drafting license agreement in the United

States, it must be studied with higher vigilance. (U.S. Department of Justice)

4.6. Prior use defense

Prior use was earlier introduced when the exceptions of the exclusive right of patents were introduced. The prior user right or prior use right defense generally refers to a limited defense to patent infringement provided to a party that made commercial use of an invention later patented by another party (Norrgård 2009, 102). In practice this means that a decision to keep invention as a trade secret is not that risky because the later infringer may continue its prior activities regardless of the patent. (35 U.S.C. §273)

When a company pleas to prior use right defense, the infringing activity must take place within that specific country. In other words, the defense cannot be used for a company´ s prior activities occurring abroad.

The prior use defense in the United States was earlier only for business method patents. The new prior use defense came into effect on 16th of September 2011 and it is applicable to infringement actions based on patents granted after 16th of September 2011. The new prior use right in the United States is more convergent with prior use right in Europe.

The prior use right has several requirements in order to be proper. In the United States the commercial use must have occurred at least one year prior to the earlier of the effective filing date of the patent-in-suit or the date on which the invention claimed in that patent was disclosed to the public if such public disclosure was earlier than the patent´ s filing date. (35 U.S.C. §273)

According to the Paris Conventions Article 4B, the prior use which has occurred during the priority year, does not create prior use right. In Europe

the commercial use must have occurred prior to the filing date of patent application (Norrgård 2009, 108).

Another requirement is that the defense may only be asserted by the person or entity that performed the commercial use (Norrgård 2009, 109). This means that the right cannot be transferred or assigned. Only exception to the previous is for example if a company sells a line of business which includes the commercial use. The non-transferability is similar in Europe and in the United States. (35 U.S.C. §273)

Another requirement or restriction which is good to notice is that prior use defense may only be asserted for commercial uses at the sites where such use occurred (in the given timeframes) (Norrgård 2009, 108). This means that if the accused infringer later expands its use to other parts of the country after the time periods applicable, it has no defense against activities in those other locations. (35 U.S.C. §273)

In addition to the previous points, a user cannot have abandoned his prior commercial use and then resumed the use at a later time. The prior use must have been substantially continuous in order the defense to apply. If prior use has ended before filing date of patent application, the prior use defense cannot be used. Even if a user would resume his prior use after filing of the patent application, the prior use defense cannot be used. Short temporary breaks do not destroy the usage of prior use defense (Norrgård 2009, 109-110). (35 U.S.C. §273)

Last point is that the defense is only available if the accused infringer derived the commercial use from the patent applicant (Norrgård 2009, 107). An example of the previous is that Company A cannot commercially use a process that was disclosed to it by Company B and expect to use the prior use defense against Company B´ s later applied (EP) or issued (US) patent. (35 U.S.C. §273)

4.7. Protective letter

A protective letter may be used depending on a jurisdiction and if there is a suspect of possible injunction action against a company or a company has received a cease-and-desist letter. For example in Germany, if a company suspects that a preliminary injunction will be filed against them, they have the possibility to deliver a protective letter.

The protective letter contains ready-made counter arguments to the possible injunction. The protective letter is delivered to all courts to where the possible injunction will be filed. (Deutsch 2013, 141)

The protective letter prevents that immediate consequences will follow to a company. If no protective letter exists and injunction occurs, a company can be possibly for example removed from trade fairs or from other exhibitions. Depending on a country the accused infringer may be heard or not.

The accused infringer usually includes relevant arguments usually appealing to the grounds for granting a preliminary injunction. Usually the accused infringer applies for the refusal of the request in a protective letter as well as submits an ancillary request that a decision not be rendered without an oral hearing. (Deutsch 2013, 142)

4.8. Declaratory judgment suit

The EPC does not have any provisions on declaratory judgment since it is governed by national laws. Despite of that fact, many jurisdictions recognize declaratory judgment suit.

There are two types of declaratory judgments, positive and negative. Positive judgment means that a right belonging to someone is affirmed. Negative judgment on the other hand means that non-infringement of 3rd party right is affirmed. (Oesch 2008, 292)

Declaratory judgments are often used is a company receives a notifying letter. The declaratory judgment suit is a countermeasure for possible preliminary injunction. Sometimes negative declaratory judgment suits have been filed to countries where proceedings in court are slow and take lots of time. The accused infringer has been able to play time and slow done the proceeding of the actual infringement suit. (Norrgård 2004, 1)

If a company decides to file a declaratory judgment for example in Germany, it is not a preliminary proceeding (Deutsch 2013, 142). This means that if a company has received a decease-and-desist letter and possible preliminary injunction in knocking on the door, the preliminary injunction has most likely been finalized before the proceedings for declaratory judgment has even began.

It is interesting to notice that in Germany if the company who has filed a preliminary injunction files, perhaps in addition to preliminary court order, a reciprocal regular court action with the same matter in dispute, the request for a negative declaratory judgment becomes inadmissible and has to be declared to be settled by the company pending the regular court action in order to prevent rejection. (Deutsch 2013, 142-143)

In the United States declaratory judgment actions are important tools for accused infringers in patent litigation because they resolve uncertainty and prevent monetary damages from continuing to accrue from possible infringement.

Declaratory judgment actions give accused infringers strategic advances by acting as plaintiff. Plaintiff in declaratory judgment has the ability to choose a favorable forum and to enjoy benefits of primacy and memorability at trial. Primacy means that the plaintiff introduces the case and memorability that it delivers the closing statement. Both primacy and memorability put plaintiff in a better position to convince judges or juries. (Hsu 2010, 94-95)

In order to have a standing to bring an action for declaratory judgment, there has to be actual controversy in the case. Only interested parties

which have actual controversy are eligible to bring a suit. Determining whether there is an actual controversy is essential to deciding whether a party has standing to sue. (Hsu 2010, 96)

4.9. Intervening Rights

A possibility for intervening rights is a special case and concerns only the United States. In the United States so-called reissue of granted patent may be requested within two years of the grant of the original patent. It is mainly for correcting mistakes in the granted patent, but the claims of reissued patent may be broadened if the applicant is of the opinion that he claimed less than he had right to claim in the original patent. (35 U.S.C. §251; 37 C.F.R §1.171 - §1,178)

The reissue is explained in greater detail later, when discussing the possibility to enforce IP rights and especially by doing so by filing new patent applications. Although reissue is a post-grant procedure, it has to be taken into account since the reissue application gets its own patent application number (not the same as in the original patent application) and therefore it is seen in this thesis as a pending application.

Intervening rights are tools which may help when tackling the risk caused by reissue applications. Intervening rights cannot be applied to cases where the claims of the original patent and reissued patent are substantially identical without substantive change. (Guttag 1998, 503-504)

The applicant is entitled to continuity of the original patent´ s claims to the extent that the reissue claims are substantially identical to those in the original patent (Guttag 1998, 504). In practice this means that the priority date for reissue claims that existed in (or were substantially identical to those of) the original patent is the priority date for the original patent

claims. All new or substantively altered claims will have priority date of the reissue patent. (35 U.S.C. §252)

An example of the above would be a case where a company engages in or prepares to engage in activity that does not infringe an original patent before it is surrendered, but then a reissued patent contains new or changed claims that would be infringed. The company may have intervening rights that permit it to go on with the activities it began prior to the change in scope. In other words, intervening rights allow possible infringer to continue what would otherwise be infringing activity after reissue.

Regardless of whether patent is reissued; whether the accused infringer was aware of the original patent or not; or whether the claims were broadened or narrowed, intervening rights may apply if a court determines that a claim has been substantially changed. (35 U.S.C. §252; Guttag 1998, 518)

There are two types of intervening rights; absolute and equitable. Absolute intervening rights bar claims for infringement based on specific products that were manufactured before the reissue. Equitable intervening rights bar claims for infringement for new products or newly manufactured versions of prior exiting products made after the reissue. (35 U.S.C. §252; Gramenopoulos 2012, 3-4)

In question of absolute intervening rights, the specific things made before the date of reissue (which infringe the new reissue claims) are absolutely free of the reissue patent and may be used or sold after the date of reissue without regard to the patent. (35 U.S.C. §252; Gramenopoulos 2012, 3-4)

In question of equitable intervening rights, they may serve to mitigate liability for infringing such claims even as to products made or used after

the reissue if the accused infringer made substantial preparations for the infringing activities prior to reissue. Equitable intervening rights apply only to the extent and under such terms as a court deems equitable for the protection of investments made or business commenced. (35 U.S.C. §252; Gramenopoulos 2012, 4-5)

4.10. Buying a patent application or a company

The purchase of a company, patent, pending application, patent family or whole patent portfolio, is not always an impossible idea. Probably the rarest case is to buy a company because of their intellectual property. In case this to happen there has to be other motivations behind the purchase although if a company is near bankruptcy, it may be sold cheap together with its intellectual property.

Naturally many actions depend on the amount available to be spent and the price of the product. Other viewpoint to consider is that if a company is buying a pending patent application, which it possibly will infringe when granted and the negotiations will not bring the hoped result, the company may wake up the other party to sue the company later for patent infringement.

Yurkerwich (2008, 39) says that there are many reasons for patent holder to sell its patents. Some may sell patents in order to settle patent dispute and other may sell them to propel towards growth objectives.

Many times the seller has unrealistic estimates of the value of its intellectual property. Patents can be categorized in seven categories which can be illustrated by using the below pyramid. The bottom of the pyramid is Group A, which contains greatest number of patents and are usually poorer at monetary value than the others. (Anon. 2013, 4-5)

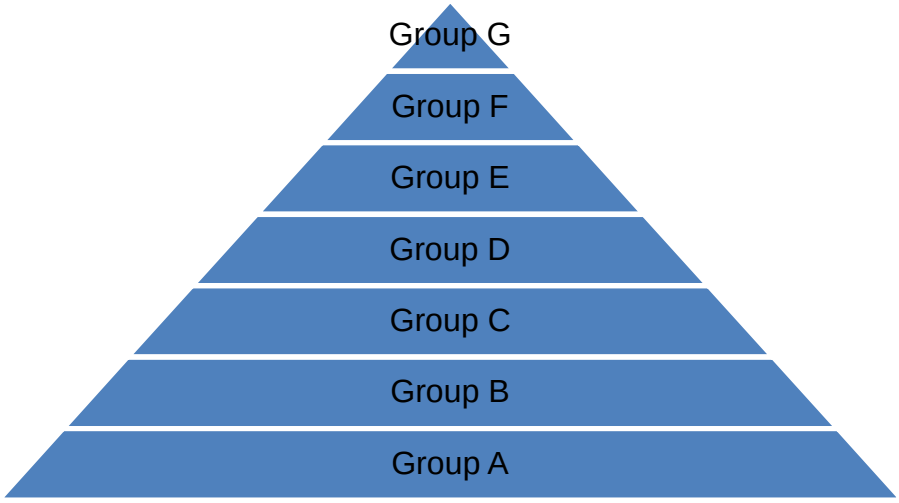

Figure 8: Patent value pyramid

Group A consists of patent which have zero value since they are expired or otherwise not in force anymore. Group B patents are such that they have narrow claim scope and the market is not great. Those patents have not been in litigation and have no licensees. Group C patents have broad claims scope and are used in large market. Group D patents have strong claims and can be used in heavily growing large markets. (Anon. 2013, 4-5)

Group E patents have been in litigation and won. The value of such patents is high due to the royalty stream of licensee (former infringers). Group F are similar patent than in Group E, but the identified licensees (former infringers) are large and well-known companies. The last group is Group G patents which are industry standards. (Anon. 2013, 4-5)

5 OPTIONS TO INCREASE RISK BY PATENTS AND PATENT APPLICATIONS

As there are ways to mitigate IPR risks, there are also ways to enforce ones IPR rights. Enforcement does not only mean litigation (infringement suit) and that should only be seen as tip of the enforcement iceberg

(Weatherall et al. 2013, 3). Enforcement of pending rights is not as straight forward as already with registered or granted rights.

Seeking for provisional protection is one way to enforce pending patent applications. Sending a notification letter to a competitor and making them aware of certain pending IP rights can in a best case scenario stop competitors entry to the market. By building a patent portfolio on a certain technology area, companies are most likely able to create threat within the competitive environment. Patent applications can be used as isolating mechanism. (Weatherall et al. 2013, 3; Lo 2013, 58)

Preliminary injunction is described in more detail in the upcoming paragraphs and it is seen as one enforcement method.

Since the enforcement of pending patent applications has more limitation than with granted patents, accelerated examination in the patent office is introduced as one enforcement accelerating method. If applicant gets patent granted faster, preliminary injunction and infringement suit have greater possibility of success.

5.1. Provisional protection and reasonable royalty

In the United States it is possible to get reasonable royalty from the so-called interim period of patents lifecycle if a third party has practiced infringement-like acts. Interim period is the period from publication of a patent application to the grant of a patent. Infringement-like acts are the same as when infringing a granted patent, but practiced during the time when patent was pending.

There are few conditions that have to be met in order to be able to seek for reasonable royalty compensation. Firstly the invention claimed in the granted patent must be substantially identical to the invention claimed in the published patent application. Secondly the accused infringer must have actual notice of the published patent application. In practice this means that the accused infringer must be given a copy of the published

application along with an explanation as to what acts can give rise to recovery of a reasonable royalty. Thirdly if the published application is an international application designating the United States, a translation must be delivered to the USPTO as well as to the accused infringer. Reasonable remedy accrues only from the date the USPTO receives the translation (that date accounts as the publication date). The remedy for reasonable royalty is available only if the patentee sues to collect it no later than six years after the grant of the patent. (35 U.S.C. 154)

In Europe the possibility to get provisional protection under EPC article 67 depends on the contracting state. For example in Germany provisional protection is possible. In case the patent application is not in German language, the patentee must provide a translation of the claims. Patentee must deliver the translated claims to either directly to the accused infringer or to German Patent Office and request them to be published in the patent bulletin. (EPC Art. 67(2); Art. II § 1(1) LIPC; Art. II § 1(2) LIPC; Art. II § 2(1) LIPC)

Patent infringement suit can only be used when patent has been granted. The provisional protection is therefore so-called pre-infringement suit or preparation to possible infringement suit. An infringement suit cannot be filed in the United States or in Germany before the patent has been granted (Lo 2013, 58). It is possible that there may be some exceptions in Europe, but they are not presented in this thesis. Litigation process is a complex and requires many stages. The litigant has to decide in every stage whether to proceed with the process or to pursue an alternative dispute resolution method in order to settle (Lo 2013, 58).

5.2. Written notification

The patent holder or an applicant of pending patent application has the possibility to notify other from the existence of his IPR. To get provisional protection, notifying is sometimes a must. In the United States and in

Europe, attention should be paid on how to formulate the letter. According to Harguth (2011, 120-121) there are two types of letters, cease-and-desist and inquiry. Inquiry letter only invites the other party exchange views on the validity and infringement aspects of invention. Cease-and-desist letter may also be called warning letter. The content of cease-and-desist type of letter is described in the next paragraphs.

In the United States an applicant who makes or sells patented products is required to mark the products with the word “Patent” and the number of the patent. If the applicant fails to do so, it cannot recover damages from an infringer unless the infringer was duly notified of the infringement and despite of the notification the infringer continued his infringing action (General information concerning patents, 2013).

If products are market with “Patent” when there is actually no patent, the marking results to penalty. This is also the case if using “Pending” falsely. Sometimes products are marked with “Patent Applied For” or “Patent Pending”. Those markings have no legal effect, but give only information that a patent application has been filed to the USPTO. (General information concerning patents, 2013)

The U.S. Patent Code states that if an applicant has failed to mark its patented products, no damages shall be recovered by the applicant in case of patent infringement unless the infringer was notified of the infringement. Because of this reason it may needed to write a notifying letter to a competitor. (Thayne 2005, 18; 35 U.S.C. 287(7))

There are many instructions available on how to write a notification letter when notifying a competitor for patent infringement. The case is not so simple, when notifying a competitor of pending patent rights.

When notifying of pending patent rights, the competitor has different possibilities in order to mitigate the risk. The applicant may also still have possibilities to “steer” the patent application to different directions and maybe even choose geographically where to apply for patent protection. Because of the previously mentioned points, it should be carefully

considered whether to wake up the competitor and avoid developing the situation from good to bad.

When sending a written notification in the United States, few things are good to take into account. First advice is to never directly accuse or explicitly threaten the competitor in a notifying letter. If competitor is accused and threatened, it may give competitor possibility to file declaratory judgment suit.

The wording in the letter should be suggestive, like “may infringe” or “may be covered by”. Even not directly accusing the competitor of infringement, the applicant should leverage its legal position by investigating the competitors´ products lines to identify the maximum number of products “needing” a license under the noticed patents and/or patent applications. (Thayne 2005, 19; Alison 2008, 4; Harguth 2011, 119)

The second advice is to avoid words which indicate to litigation. Such words as “damage”, “liability” or “jury” are not advisable to use. The aforementioned words may also create reasonable apprehension of suit. (Thayne 2005, 19)

The third advice is to offer license. The Federal Circuits in the United States like that license has been offered because it indicates the applicant´s willingness to use non-judicial resolution method (Thayne 2005, 19-20). The offering of license in in the written notification further mitigates the risk of competitor to file declaratory judgment suit. If the notification letter in general points out granted patents of the applicant in addition to pending applications, the mentioning of willingness to license, may compromise or destroy the applicants ability to obtain preliminary injunction.

When drafting a notifying letter, it is important the notice is given by the patent owner or in case of pending application the recorded applicant. The notice must be given by the applicant directly or through its legally authorized representative. The reason for this is that the receiving party of the letter would have the possibility to negotiate directly with the real party

of interest. There has been a case in the United States where the notifying letter was sent by the inventor of the patent-in-suit. He had assigned 100% of his interest in the patent to closely held company in which he held 100% of the stock. The court of appeals affirmed that the infringement suit was dismissed because the notice was not given by the true applicant/holder of the patent. (Alison 2008, 3)

In Europe the declaratory judgment can also be applied, but only in national level. The European Patent Convention does not include any provisions on that. For example in Germany a negative declaratory judgment is possible to file after receipt of notifying letter and/or the accused infringer can file also so-called protective letter, which is not possible in the United States.

5.3. Preliminary Injunction

It is possible in the United States an applicant to obtain a preliminary injunction that prevents the accused infringer from selling, offering for sale, making, using and importing the alleged infringing product prior to a trial on the merits. A grant of preliminary injunction is an exception, not the norm.

To be able to issue a preliminary injunction, the patentee must establish;

A) Likelihood of the success on the merits
B) Suffering of irreparable harm if the preliminary injunction is not granted
C) The balance of hardships between the parties
D) An injunction is in the public interest

(Fox 2013, 441-442; Harguth 2011, 162)

The patentee has the burden to establish all of the above four factors. If the patentee is unable to adequately show any of the above factors, it may justify the denying of the motion for preliminary injunction. The most

important factors are A and B. If the patentee fails to prove one these two factors are present, the preliminary injunction will not issue. On the other hand, if factors A and B are met, factors 3 and 4 will normally be found to be met.

A patentee must file a complaint for patent infringement and at the same time or very shortly thereafter file a separate motion for preliminary injunction. When the patentee files a motion for preliminary injunction both sides engage in an expedited discovery process. Discovery means that both parties are involved in production of documents and other information, depositions of company employees, and potentially discovery of expert testimony, including exchange of experts´ reports and depositions of experts.

Once the discovery process is completed and the accused infringer has had the opportunity to file a response to the patentee´ s motion, the court has number of options. The court can make its ruling based on the submissions of the both parties or it can also have hearing where the parties argue their positions. In addition to the previous options, court can hold an evidentiary hearing, which is like trial but usually shorter in duration in that it involves actual testimony from witnesses.

In Europe the preliminary injunction is governed by national laws instead of the EPC. According to Deutsch (2013, 127) in Germany the applicant may file preliminary injunction request theoretically to several competent courts. Even after one court has rejected a request, the same application may be filed with another court, while the adversary may still not have become aware of such request. The same matter cannot be officially simultaneously pending before different courts and such behavior is construed as misconduct. Previously described behavior is often called forum-shopping.

When filing a preliminary injunction motion in Germany, one core issue is the wording of a claim to cease and desist. Courts accept wording and/or pictures taken from the specific contested use, for example slogan as it

appears in newspapers. Applicants often try to generalize a certain kind of behavior by employing less specific wording or pictures without the specific context of the contested behavior. (Deutsch 2013, 138)

In addition to the wording of the court order sought, an emphasis must be placed on the reasons for different claims in the application. If the court order is based on several legal grounds, the applicant must differentiate them and put order the different legal bases (Deutsch 2013, 138).

Very often short timeframe is used as argument in preliminary injunction motion to justify the fact that the accused infringer is not given prior notice of the request. The lack of giving prior notice is justified by the preliminary character of an injunction and the later possibility of opposing it. As in the United States, the applicant has to show urgency of the case (Harguth 2011, 164). Naturally the applicant must present the facts and legal arguments of the case (Deutsch 2013, 138-139).

The judge usually examines the preliminary injunction request only few days and issues a court order if the request is well founded. The court order is delivered to the applicant only and it is his duty to serve the court order to the accused infringer within time period of one month (Harguth 2011, 168). The court order usually contains only an order to cease and desist and no reasons are included (Deutsch 2013, 140). Sometimes a short statement of reasons is included if the accused infringer is foreign (Deutsch 2013, 140).

When the court order has been notified to the accused infringer, it is obliged to serve the injunction to the other party within one month (Deutsch 2013, 141). This one month time period is strategically important. The applicant may start to negotiate with the accused infringer and try to get a settlement. The accused infringer usually has motivation to reach a settlement, since after the one month it has to follow the court injunction in order to avoid an official fine for each breach.

5.4. Accelerated prosecution

It is not so familiar to approach competitors by writing notification letters if a company´s rights are not yet registered. Granted patent is recognized right, but pending application is still under examination. Applicant has the possibility to request accelerated examination and therefore get patent granted faster.

In the EPO there is a program called accelerated prosecution of European patent applications (PACE). The applicant may request accelerated search and/or examination. If an EP application is so-called first filing and does not claim priority from any prior application, the accelerated search will be automatically without a request conducted. In many countries patent offices´ promise to examine the priority applications within six or 12 months. Therefore EPO´ s practice with the prescribed cases is not very unique or truly accelerated. (European Patent Office 2012. Guidelines for examination in the European Patent Office, 82)

European patent applications, which claim priority from earlier applications, the accelerated search can be requested on filing. In those cases the EPO will try to issue the search report as soon as possible if it is practically feasible. If the application documents are incomplete, the accelerated search cannot be performed. If for example the description or claims are missing from the original filing. (European Patent Office 2012. Guidelines for examination in the European Patent Office, 82-83)

There is also possibility to request accelerated examination for direct European patent applications. Accelerated examination may be requested at any time, but for it to be most efficient, it should be filed at early stage of filing the patent application. When accelerated examination is requested, the EPO tries to issue its first examination communication within three months from the receipt by the examining division of the application.

(European Patent Office 2012. Guidelines for examination in the European Patent Office, 83)

In the United States there is accelerated examination, which promises that a final disposition is given within a year. Final disposition means either patent grant or final rejection of the application. Petitions “to make special” are also processed under the accelerated examination. Such “special” petitions are applicants´ s health and/or age or if application is in the patent prosecution highway (PPH) pilot program. The mentioned “special” petitions are not required to comply with the other requirements of accelerated examination. (USPTO 2013, accelerated examination)

To be able to get accelerated examination there are two essential requirements. The first requirement is that the applicant must perform a thorough search prior to filing the patent application. The search for prior art is not an easy task. The search has to be broad and will likely include the studying and reading of hundreds of patents. For bigger companies, doing the prior art search by themselves, may not be such a huge effort.
Another requirement is that the patent application must not contain more than three independent claims. (USPTO 2013, accelerated examination)

5.5. Applying new IPR

In the United States it is possible to continue the examination of patent application by filing request for continued examination. In addition to the aforementioned “extension”, there are also possibilities to file divisional, continuation and continuation-in-part type of applications. Naturally applicant has possibility to file totally new application, where the subject relates to the previously filed patent application, but they do not have any “legal connection” (not claiming priority from parent application). In Europe there is possibility to file divisional applications, but other types of continuations are not known.

Divisional applications are such that they contain matter from a previously filed application (so-called parent application). Divisional application is filed later than the parent application, but it will have the parent filing date and it also claims the same priority as the parent. A common situation to file divisional application is when the original patent application claims two inventions and the applicant is force to choose which invention it wants to claim. (EPC Art. 76; 35 U.S.C. §121)

Divisional applications may be filed voluntarily by the applicant or at the request of patent office (election/restriction requirement). There is possibility to divide an application by filing one or more divisional patent applications. In the Unites States, divisional application(s) must be filed before the patent application is granted. In the EPO divisional(s) can be filed when the parent is pending and less than 24 months has passed from the first technical office action. Technical office action is such where the examiner has analyzed the subject matter of the invention not only formalities. (EPC Art. 76, 35 U.S.C. §121)

A continuation application is possible to file in the United States. The continuing patent application will receive the same filing date as the parent. It also has the same description (specification) and the claims were already introduced in the parent. Usually continuation application is filed when the examiner in the patent office allows some of the patent applications claims, but also rejects some. The continuation application must be filed before the parent application is granted or abandoned. (37 C.F.R. §1.53(b))

Continuation-in-part (so-called CIP application) is a unique feature of the United States patenting system. Usually applicant has time period of one year to decide whether it will continue to seek patent protection in other countries than in the one it started the patenting process. Sometimes inventions evolve after the one year time frame and when that time expires

it is impossible to add new matter to the application. CIP application is useful in these cases.

A CIP is an application which is filed during the pendency of the parent application. It generally includes some or all of the parent applications disclosure while adding new subject matter that was not disclosed in the parent application. The new matter can include not only a wholly new subject matter, but also specific elements, percentages or compounds that were not mentioned in a broader original parent application. (37 C.F.R. §1.53(b))

Reissue of granted patent is important to mention although it does not belong to the family of different kind of continuations. Usually reissue is asked for to correct mistakes in the granted patent. Only applicant may ask for reissue from the USPTO and it must be made during two years from grant of the original patent. What makes the reissue important in this context is that during the reissue process the claim scope of the original granted patent may get broader. The original granted patent has a certain claims scope and after a reissue is published, the patents claim scope has changed usually to a cover broader scope of protection. (35 U.S.C. §251; 37 C.F.R §1.171 - §1,178)

It is good to bear in mind that other forms of IPR may be handy to use. Especially the usage of utility models may be useful in some cases. Utility models are also sometimes called “petty patents” because they are much like patents but with more limitations and requirements (Oesch et al. 2008, 384-385). The novelty and inventiveness of utility model is not examined and therefore it is only registered. Due to these facts, it is registered in few months. Utility models are in force maximum of ten years and they can be challenged by opposition at any time after their registration. Utility models can only be applied to products, not for methods. By filing utility models a company gets registered rights fast and if someone wants to file

opposition against those rights, they will have to see quite a lot of effort in order to formally oppose the right.

Due to the previously presented continuation and division possibilities of patent applications, there are possibilities to enforce company´s patent applications in milder way than suing other companies. The possibilities to continue and divide patent applications are presented here as a possibility to increase risk towards competitors. Companies can file such application to protected themselves from competitors as well, but that has to be done more proactively than reactively. If company would file such applications reactively, I believe they would be in more trouble than in the beginning. Proactive of divisional and continuation applications may give more “shield” against competitor and probably will ease possible licensing negotiations when a company has more assets on its pocket.

6 CASE EXAMPLES

Three case studies are being presented in the following sub-chapters. Below is a table describing the basic statistical characteristics of each company in the cases.

	Industry	Number of employees	Turnover / Net Sales (€)
Company A	Paper making	~24 000	7.2 billion (2012)
Company B	Chemicals	~3000	560 million (2009)
Company C	Paper making	~5000	1,010.8 million (2012)
Company D	Paper making	~550	unknown
Company E	Water treatment	~15	1,25 million (2011)
Company F	Construction products	~200	unknown
Company G	Construction products	~100	11,5 million (2009)

Table 1: Company facts

The specific cases have been chosen because there are cases which are more related to risk mitigation and cases which are presenting more the enforcement of IPR. The cases have international aspects in terms of companies as well as patents applied.

The first case which includes companies A, B and C, describes a case where two companies A and C are competitors in the same industry and seem to manufacture similar product. The case is described from the point of view of Company A, which is enforcing its rights. Both companies have IPR in Europe and in the United States.

The second case describes a situation where companies D and E have a buyer – supplier relationship. The case introduces a scene where a patent is offered for licensing. There is a difficulty for company D to decide whether they should buy a license or whether they could take the risk and not buy a license.

In the third case companies F and G are direct competitors. The case shows how IPR issues may get started very publicly. It introduces a case where perhaps less common risk mitigation tools are being used.

6.1. Enforcement and argumentation

A Company A had done years of research and development work in order to improve the characteristics of paper. The R&D work was time consuming and they had decided to do joint research with Company B. The Company A and B had together found a great chemical formula used as coating for paper. The invention was expected to have great potential among paper manufacturers. As Companies A and B had agreed on their joint development agreement, Company A had the rights for the invention.

Company A decided to file an invention report or invention disclosure in January 2007. Company A internal processing took some time, but finally on 3rd of June 2008 the company filed a national patent application in Finland. During the priority year, Company A decided to continue to apply patent protection to China and Europe. At that time it was seen that China and European countries had the most market potential. The invention came public after 18 months from the filing date of the priority application, in this case 3rd of December 2009.

Company A´ s joint development partner had done competitor monitoring and noticed that Company C had rather similar looking patent application published on 1st of September 2011, which means that they had filed their patent application 18 months ago 1st of March 2010 only three months after the publication of Company A´ s patent application. Company C had also started to commercialize their solution fiercely.

Company C had firstly filed a patent application in France and then quick registered utility models in several European countries. Once quickly registering utility models, they had immediately after filed patent applications to the same countries. Since the United States does not recognize utility model, they had filed a regular patent application there.

Company A was not happy of the situation since they considered that although they had not commercialized the solution yet, they had filed patent application first. Since the first applications were filed in Europe, the first to invent principle does not apply. The case would have been different in the United States in the given dates, since the old law would have been applied.

Company A carefully analyzed the claims of its own patent applications as well as those of Company C. Company A came into the conclusion that Company C seems to be infringing Company A´ s rights. Company A had

all patent applications still pending, but Company C had many registered utility models as well as one patent granted in France.

Company A started to prepare “imperium strikes back”, which meant that it started to file divisional applications in Europe as well as utility models in selected countries. Company A also made actions to get provisional protection. It translated and published the pending patent claims in certain European countries. After Company A had filed several divisional applications and utility models, it decided to approach Company C. In January 2012, Company A sent a notification letter to Company C.

Company A had applied for provisional protection as well as they had applied for new IP and made a written notification. Company A did not file a preliminary injunction since they have no registered rights and they did not want to publicly attack against Company C. Preliminary injunction would have acquired infringement suit to be filed at the same time or soon after. Company A can request for accelerated prosecution and perhaps due to that some patents will be granted faster. After patent is granted Company A has actual possibility to file preliminary injunction and/or infringement suit in that specific country.

What comes to the U.S. market, Company A has only possibility to deliver prior art documentation in form of third party observation to the U.S. examiner. Company A cannot plea to first-to-invent principle under the old U.S. law since it has no patent applications in the U.S. Similarly it cannot plea to prior use defense since no prior use has occurred in the U.S. soil.

From personal view of the author cross-licensing may be beneficial in this case. By cross-licensing both companies would save many years of time and effort when litigating over patents and utility models in several countries. Cross-licensing could also complement the country coverage of both inventions. Since both companies have many patent and utility model filings, the negotiating position is fairly equal in that sense. If perhaps an

expert opinion (patent attorney) done would point out that Company C´ s patent is invalid especially compared to Company A´ s patent application, it would give Company A a better negotiating position.

If a settlement would not be reached, Company A could start to file third party observations in different countries where patent applications are pending. It can also start invalidation proceedings against registered utility models. Naturally Company C has the possibility to do the same for Company A´ s patent applications and utility models. Although Company A is on the opinion that it filed the patent application for the invention first, it can still prepare for worst case scenario by gathering internal prior use evidence.

If settlement is not reached, a long road would be ahead when clearing the road for the business case. It should also be kept in mind that nearly all actions must be done in each and every country which is important for the business of Company A (and most likely Company C).

6.2. To buy or not to buy

A Company D has been in the market and practiced business for many years. It´ s main operations are in Germany and it is considered as a large company in its industry. The times are getting harder and Company D is looking possibilities to save costs. Especially its product is fairly expensive to manufacture due to the price of its components. Suppliers have raised their prices, which makes the Company D to wonder if it could manufacture some components on its own.

Company E is a small supplier and has heard that Company D is looking for cost savings. Company E has offered a license to Company D relating to the manufacture of one component needed in Company D´s product.

Company D is analyzing the pending patent applications and wonders whether it truly needs the license or could it just start to manufacture the component as described in the pending patent application. Company D needs to analyze the current claim scope of the pending patent application and estimate the possible other scopes since the patent is pending. After the analysis some idea of whether Company D would manufacture the component in same manner should be able to establish.

In addition to the patent application in question, Company D should do a patent search and see what other patents Company E may have and if they relate to the same technology. Another search that should be conducted is that is Company E the only patent holder in the market or are there other companies which have much more patents and possibly more relevant in scope. In other words, is the current pending patent application the most relevant one for the business case?

When Company D conducted all the necessary searches, it noticed that there are actually two interesting looking inventions. Invention1 has pending patent applications in Germany and in Europe (so-called EP application under EPC). The applicant in the invention1 is Company E. Invention2 has only one German patent. The applicant in invention2 is Mr. Boss, who is also the owner of Company E.

Possible outcomes of the case are that Company makes a license agreement together with Company E and Mr. Boss. Perhaps Mr. Boss transfers his rights of invention2 to Company E, when license agreement only with Company E is needed. It is possible that in the agreement it is agreed that Company E indemnifies Company D. In practice Company E may be so small company that taking bigger responsibility may not be possible in practice and end of the day Company D has to respond to possible infringement suits. The purchase of license may also have other benefits; it may improve the business relationship with Company E and enable further development of the invention.

If Company D is not willing to buy a license, but would still want to benefit from the inventions of Company E, it has the possibility to file third party examination for pending patent family and depending on when the patent in Germany has been granted to file opposition, which is post-grant procedure. These actions would not cherish good business relationship.

6.3. So fast, so furious

Company F manufactured panels from wood. They had production facilities in Germany, Finland, China and the United States. They decided to promote their products in two trade fairs in Germany. The first trade fair was a two day trade fair and the second just after the first one a three day trade fair. Company F´ s salesmen were enthusiastic of the trade fairs and were proud to present the company´ s products.

Immediately on the first day on the first trade fairs, their stand was approached by a competitor Company G together with the trade fair director announcing that Competitor G has a court order for preliminary injunction and that certain products of Company F must be immediately removed from the stand. Formerly enthusiastic salesmen of Company F, left from the trade fair on that day extremely embarrassed and mad. They decided to call their corporate patent attorney and legal counsel immediately.

Both corporate patent attorney as well as legal counsel examined the preliminary injunction carefully and started to examine the claims of the patents which were the basis on the preliminary injunction. The claims were not easy to interpret and therefore it seemed that only a court case could solve it. It was considered most likely that preliminary injunction would also be targeted to the second trade fairs. Company F decided to act quickly in order to be saved from humiliation in the second trade fairs.

Company A filed a protective letter to all necessary instances in Germany and was protected by the preliminary injunction on the second trade fairs. Simultaneously companies F and G started to negotiate and discuss of the case. Naturally both companies had opposing opinions on whether an infringement is taking place. Company F also started to search for possible prior art. Based on good prior art Company F could claim that the patent is invalid, which would enable them to speed and steer the negotiations. With the help of good prior art Company F could even threatened to file invalidation suit although it would never do so.

Company B was disappointed since Company F had found good prior art which made its patent practically invalid. Company G was willing to give license to the patent in question as well as to their other patent applications which were still pending if Company F promises not to reveal the destroying prior art to competitors. By such agreement, Company G was able to sue and otherwise “harass” other companies with its patent. Company F was also pleased, since Company G was keeping other competitors occupied.

7 CONCLUSIONS

This study has presented the different possibilities that companies have in order to mitigate IPR risks as well as increase the risk towards third parties. Many actions can be used as shields and swords, but reasoning why some action is seen as risk mitigating or enforcement type of action is given. The study focused especially on pending patent applications, but took into account some actions, which are a little bit on the border line and may only be applied in case of granted patents.

7.1. Summary of risk mitigation actions

Design around option may be viable option if company has not completely engaged its actions to one and therefore it would be fairly easy to change for example product composition to different. Designing around is more difficult when a company should design around a patent application instead of granted patent. The claim scope of the pending patent application can still change and planned route to go around the claims may not succeed after all when claim scope change to an unpredicted direction. Design around option may be cheap or expensive to the company and therefore a company naturally has to weigh the pros and cons of design around option against other possible options.

Back-pocket prior art is like an insurance policy. It helps to prepare to possible problems and can be “release from pocket” any time for different purposes. The excess of the insurance may be great if the prior art is fairly poor. If the prior art is considered strong, the usability is better. Back-pocket prior art may also help negotiating and bring better position to the company. The possession of back-pocket prior art may be risky in the United States if a company is found guilty of patent infringement and the company was aware of the patent and therefore may be found guilty of willingfull infringement (treble damages).

Third party observations may be used against pending patent applications. By filing a third party observation to the patent office, a company may affect the future claims scope of possible patent. With third party observations a company has the possibility to steer the competitor´s application to more favorable direction. It is possible to file many third party observations to the same patent office, which can be seen as pro, but on the other hand the examiner has no obligation to take them into account, which can be seen as con.

Different opinions can be requested for granted patents as well as for pending applications. Opinions usually at least protect from willing full

infringement in the United States, but in addition it may reduce the risk so that a business can start or continue. Opinions give as clear picture of the situation as possible. The cons of opinions are that they are opinions of that specific moment and situation. If situations change, opinions cannot necessary be applied anymore and new opinion has to be requested. Nevertheless, opinion is merely an opinion, not a court order or final judgment, although it is given by a competent patent attorney.

Licensing is one option to mitigate IP risk. The price of license agreement may be less when licensing a pending patent application. There is also a possibility to affect to which countries the patent protection is applied to, which can be considered a pro. Licensing naturally eats the profits of the company when it has to pay royalties, but it may still be a better option compared to others.

Prior use defense may be a savior, but of course tight to the fact that a company must have had prior use in that specific country and that it has to prove it. Prior use can be a saving angel that a company don´t have to close its operations, but on the other hand it cannot expand its business from the existing which is subject to prior use.

Protective letter is exceptional and is used if a threat of preliminary injunction is in the air. Protective letter is not recognized in the United States, but only in some countries in Europe. Perhaps closest action in the U.S. would be declaratory action. The existence of protective letter is good to remember, because it may save the company from preliminary injunction. The downside is that usually companies have no clue that such preliminary injunction is coming and therefore they cannot prepare to it.

Declaratory judgment suit can be positive or negative, although negative is more commonly used since it gives a company declaratory judgment on whether it infringes 3rd party patent or not. Declaratory judgment is viable only in question of patents and at least in the United States a permission to request declaratory judgment is not given automatically. Declaratory judgment is a countermeasure for preliminary injunction.

Intervening rights are specialties of the United States. In cases where the claim scope of reissue application seems to make a company an infringer, it may have intervening rights, which enable the company to continue its operations which it began prior to reissue. Intervening rights are possible savior, but intervening rights are not applied if the claim scope of original patent and reissue patent is nearly identical. The evaluation of whether claims are identical or not, may not be an easy task.

Sometimes applicants are willing to sell their patent applications and it may be just convenient for another company. When buying a patent application or perhaps even a whole company, many negotiations are usually needed and parties should also get a consensus of price. Naturally when buying a company there are many other things to consider as well. Therefore buying a company is an operation which requires time. Buying a patent is faster, but if consensus of price is not met easily, the negotiating phase may take lots of time. In case company has time and money, it may become an owner of bigger patent portfolio, which will give it a stronger position in the market place in general and some future IP risks are avoided.

7.2. Summary or risk increasing actions

When company has pending patent applications, it can already prepare to file infringement suits and maximize its monetary gains from 3rd party. Company can apply for provisional protection from the period when application was published to patent grant. Company can publish its application before it would become public by law (18 months from filing date). If patent is later granted having identical claims scope with the application, a company has the possibility to get compensation from the provisional time period. The term “identical claim scope” needs interpretation. Very often the claim scope of pending patent application and granted patent is same or even very similar.

Written notification is a good way to get competitors attention and hopefully to its toes. The written notification is naturally better if the company actually has some granted or pending IP on its pocket and the letter is not merely a groundless threat. The other side of the coin is that if a company sends a letter, but has not studied to whom it has sent the letter to, an unpleasant surprise may occur. The accused company may be very large on size and aggressive on defending its rights. The accused company may also be owner of extensive patent portfolio, which makes it an owner of many bargaining chips.

Preliminary injunction may be used if patent infringement is suspected. The use of preliminary injunction would require some registered right to be in force. An infringement suit should follow immediately or very soon after request for preliminary injunction. Preliminary injunction is fast to get if all requirements are fulfilled. Although infringement suit belongs together with injunction, the preliminary injunction alone at least in Europe may give strategic benefits.

Accelerated prosecution is a good way to speed up the prosecution in Europe and in the United States. Both in EPO and USPTO some additional fees apply when requesting accelerated prosecution, but if a company is determined to approach 3rd party, this way it may start the preparations hopefully leasing to positive outcome on their behalf.

Applying for new IPR, not only patents, but trademarks, utility models, designs and so forth will increase the risk of 3rd party to infringe multiple or at least some right. If the 3rd party is able to somehow defend its position against one patent or patent application, it is much harder to defend against multiple patents and applications, not to mention other IP´ s on top. Of course filing multiple IP´s is not cheap and therefore many companies cannot necessary use this option very effectively.

7.3. Final conclusions

Companies have many options to mitigate risk or enforce their rights. The use of different tools is like a ping pong game between parties, where every action changes the playground a little bit. This study presents some of the actions which are possible to take depending on a jurisdiction. As long as patents are country specific, one must study the law of that particular country carefully. In each and every business case an individual assessment must be made since all cases are unique. Companies can manage IPR risks actively in a selected level suitable for them.

It seems that pending patent applications cannot be infringed directly while they are pending. Provisional protection enables a company to seek additional compensation from the time period when their patent was pending if the claims of the granted patent are nearly identical to those of the pending patent.

For future studies, it would be interesting to include other factors affecting to the business case. There may be some other points of law than patent laws affecting the case. Perhaps examples of such laws or regulations would be competition rules or some other prohibited unfair commercial practices.

Companies have many things to consider regarding IPR. In total companies must take into account multiple phases such as internal handling of invention disclosures as well as the prosecution of applications and all points of law relating to them; not to mention enforcement of its own rights when simultaneously mitigating risks created by 3rd parties. Luckily there are choices to choose from, but selecting right one may be quite a lottery.

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