

**ECONOMIC ASPECTS OF INTELLECTUAL PROPERTY  
PROTECTION**



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## Abstract

This thesis introduces one of the fundamental human rights- the right to own. It deals with the types and differences in ownership and the ways of their legal adjustments. Intellectual property is a specific area of the national economy with wide issues. It is intangible property, and therefore it is difficult to protect. For these reasons, the rights granted to their owners are often violated.

Intellectual property and its protection is part of the protection of competition law of state. States, through their instruments trying to eliminate this negative phenomena, but to effectively get rid of it, they need to know the cause and understand the nature of the problem. It focuses on the description and analysis of the institution of intellectual property, including their problems. All institutions for the protection of intellectual property have their strengths and weaknesses, which accentuate the light of recent technological developments.

This thesis tries to describe and analyze economic and social impacts arising from the violation of intellectual property rights and how entrepreneurs can protect their intellectual property.

**Keywords:** Legal protection of intellectual property, violations of the rights of intellectual property, economic losses, patent, copyright, authorship, trademark

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

For the topic of my thesis, I chose intellectual property and its protection. This kind of property, from my point of view, is very important for the functioning of the company and is often underestimated. In addition to the benefits, which this mostly intangible property provides to legal owners, it is also a frequent target for unlawful enrichment. This is what law and entrepreneurs try to avoid at any price.

In recent years debate about intellectual property has reached the general public. With the emerging digital media, computers and the internet, all aspects of intellectual property become more prevalent for everybody. It is this technological progress, which allows people to possess years of music, several huge libraries and whole archives of movies in a box that is smaller than a single book.

Discussions are very complicated because there are many sides of these issues. To proceed, it is necessary to define the terminology first and then to analyze them in more detail until we would be able to draft any conclusion. Now it is common to use the term Intellectual Property Rights, but the term is new and artificial. It was introduced by WIPO in the second half of 20th century (WIPO,2010). There are some papers, which study intellectual property rights as general property rights. Unfortunately, such approach has several flaws. Historically it is not a naturally grown institution, and it is almost impossible to evaluate. Also, it is intangible; hence it is impossible to transfer the same way as tangible goods.

The concept of intellectual property as contracts is interesting, but also has obvious shortcomings. For example, when an author produces a book, and then makes a contract with consumers to restrict resale and copying of such book. It is fine unless the consumer trashes the book, then the new owner of the already used book is not limited by such a contract and then he can copy the book freely, because it is not legally possible to transfer such a contract to people who did not make the contract. It does not mean that this approach has to be abandoned completely. Contractual intellectual property is commonly used in business, academics and government. When the intellectual property is completely intangible and we talk

about knowledge, it is one of the most efficient ways to protect intellectual property among competitors. It is widely used as a non-disclosure agreement, or secret information.

Protecting intellectual property rights is one of many macroeconomic instruments of the state and its policy of protecting economic competition, in which the state, through its institutions seek to increase the protection of the competitive environment. The protection of intellectual property rights can be defined as protection against counterfeiting and piracy, which can be described as unfair economic activity. As a result of these illegal activities arising to those injured parties lost, and on the other hand entities that violate the competition are the beneficiaries of undue profits. It is therefore clear that economic considerations are very important, in order to understand the broader issue of protecting intellectual property rights.

And precisely economic reasons motivate producers and distributors of illegal goods to violate intellectual property rights. At the same time economic reasons stimulate injured parties to enforce intellectual property rights. Due to economic reasons consumers buy goods which is infringing intellectual property rights and its policy seeks to protect competition through its instruments at its disposal to eliminate these negative effects.

The most important institution of Intellectual Property is authorship. This institution is the oldest and the most natural of all the intellectual property institutions. It has been used in ancient Greece, Rome, China and many other cultures. There was a gap in the medieval times, when the masterpieces weren't signed and this resulted in unknown authors. Institution of authorship is now widely used to justify a larger agenda of intellectual property rights and protections, even though it has only limited relation. Until the beginning of 20th century, intellectual property rights were granted to juridical person and the original authors were degraded to paid labor (Boháček & Jakl, 2002).

There are huge corporations publishing the contents, some emerged as book Publisher in Britain during the 18th century, and later in the 20th century Movie and Pop Music producers (Scotchmer, 1991). Note that these corporations are not the original authors and artists; they are companies which help authors to manage and distribute the contents to the public. Nowadays, distribution is easier, and in most

cases the marginal cost of the distribution is zero. It is unprecedented change, which created many distortions to current systems and still needs to be resolved in both theoretical discussions and business models.

## 1.2 **Background**

Intellectual property is a special area where the creation of products is not the main material, but instead it is knowledge. In its inception it does not matter whether the individual or the company has enough money, personnel and other material benefits, because for the creation of such an intangible asset, you often only need a good thing or idea. This property can be used without losing its value. On the contrary, if it is an original and practical intangible asset, time can achieve a multiple rise in value. Nowadays it is almost impossible for companies or individuals to own a business without intellectual property. Without having something unique you couldn't succeed in the market. In such a quantity of goods, the product must be extracted to attract customers. On the other hand, product or service should be of sufficient quality and characteristics to find its range of consumers. Entrepreneurs must focus on unusual invention, the special design, or an engaging name of the product to ensure

## 1.3 **Objectives of study**

The first objective of this study is to try and familiarize the reader with intellectual property, its constituent parts and distribution. I will provide a brief overview of the issue. Given that intellectual property is a very broad term and each of its components would be very extensive, I will discuss only the beginning. I will define the basic concepts that orient the reader.

The second objective of my thesis is to describe and analyze the economic and social impacts arising from violations of intellectual property rights. This is to highlight the most important issues and questions that arise in this context. I will also identify the damage that may arise in connection with violations of intellectual property rights. Finally, I will explain the establishment of the state to evaluate the economic impacts and health effects for consumers in connection with the sale of

products that infringe intellectual property rights. The work will also explore the theoretical foundations of this issue with real knowledge and experience of existing businesses in order to understand the phenomenon of violations of intellectual property rights in all its fullness.

## 1.4 Scope of research

The first part of the thesis is done by descriptive methodology, where I will first familiarize the reader with the surveyed scope. This part focuses more on the theoretical plane, in which I'll describe the basic concepts and their specifics to the reader in order for them to understand the nature of the problem and its solution context. Next, I will focus on defining the area being examined in the context of the national economy. It is also important to understand the economic importance of intellectual property to the national economy.

The next part of the thesis is the methodology and exploration of the issue. I will focus primarily on examining the economic impacts that arise in this area. Research will be supported by statistical data. This part of the thesis is in terms of the topic fundamental. It deals with the economic aspects of intellectual property. It is all about exploring the impacts, effects, causes, etc. to individual businesses, which are the areas affected in both a positive and negative sense.

The last chapter focuses on the economic losses, violations of intellectual property on the European market and the appreciation of the existing protection system in the company, which is accompanied by recommendations for the future.

I would also note that the aim of my work is not a detailed description of the various definitions of intellectual property rights or their legal analysis, but the creation of economic analysis, economic statistics, economic impacts and consequences related in connection with violations of intellectual property rights.

## 1.5 Research questions

Based on the objectives of the present research, the author has identified the following research questions:

1. How can entrepreneurs protect their intellectual property?
2. What are the microeconomic and macroeconomic consequences of violations of intellectual property?
3. What is the current situation of intellectual property rights in European market?
4. What is the future for protection of intellectual property?



## CHAPTER 2

### LITERATURE REVIEWS

#### 2.1 Related literature review about intellectual property

The main concept of the entire work is intellectual property and its protection in the World Trade Organization, therefore I consider it necessary to characterize the notion of intellectual property and its object (i.e. intangibles) so that they can be uniformly used in the following chapters.

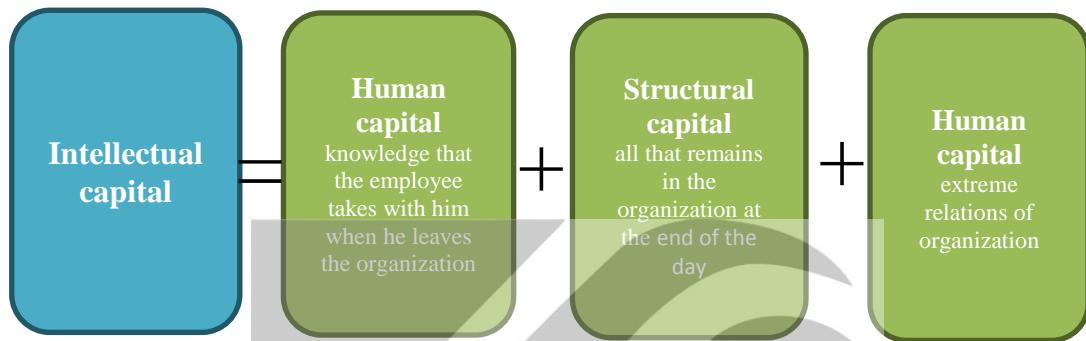
##### **Intangible goods**

To fully understand the concept of intellectual property it is necessary to be familiar with the term intangible goods, because it is the subject of intellectual property. Intangible goods can be defined as a special kind of legal relations object which has the intangible nature - it is the result of intellectual activity, whether it is a protective sign or the result of creative activity or experience (thoughts, or method of expression) or the value of the human person. On the other hand intangible goods is not everything that can be seen as intangible (i.e. happiness, love). It is only for those intangibles that are so important for society that made them the subject of legal relations and legal regulation (Boháček & Jakl, 2002).

##### **Intellectual Property**

Nowadays, the concept of intellectual property is best defined in Convention Establishing the World Intellectual Property Organization (hereinafter WIPO) in Article 2, paragraph VIII. of the memorandum (World Intellectual Property Organization, 1967). The concept of intellectual property includes all rights resulted from human activity, not only the rights of copyright works and related intangible assets, as well as industrial rights. For example, rights to inventions, industrial designs, trademarks and other industrial property. In addition, this also includes the right to protection against unfair competition and all other rights to the results of intellectual activity in the industrial, scientific, literary and artistic. All other rights are intended utility model rights, trade secrets, know-how, improvement recommendations, plant varieties, topographies of semiconductor, designations of origin and geographical indications, content databases, typographic signs, etc., not only to intangible assets in the area of intellectual activity, which fall within the

industrial property in the summary of copyright, but also those that do not fall into one of the categories, or their inclusion questionable (Caenegem, 2006). The simple diagram below shows that the general knowledge, know-how and innovation are the foundation of intellectual capital, and in many ways the most valuable assets of the organization.



**Figure 1.1.: The structure of intellectual capital and its importance to the organization**

Source: Ochrana duševního vlastnictví [Protection of intellectual property], Prague, 2010

## 2.2 Intellectual Property Law

Intellectual property law is a set of rights to intangible assets. It is about subjective rights under the legal relationship between the creator and other persons who are obliged (holders) to respect the law. Protection of intellectual property consists that for those holders of intellectual property is formed exclusive rights to which others may not interfere. (Telec & Tůma). Among these rights we classify the right to belong exclusively intangible farm use (i.e. produce, according to him, to deal with materialized forms, new products, copies of copyright works), only to dispose of it, respectively costs (in particular the spread, destroying them, provide rights to their use).

## 2.3 The principle of territoriality and the pursuit of harmonization of legislation

Another distinguishing feature which is applied in the protection of intellectual property rights is the principle of territoriality of legal protection. This means that the rights arising from intellectual property can be exercised only within the territory of

the country where protection was granted, for example, in the state where he was granted a patent or trademark. If the owner wants to patent or trademark protection even get in another state, it is necessary to apply in that country (i.e. request for extradition of the local patent).

Considering the overall interconnection of economies legal protection obtained in one country does not provide sufficient protection, on the other hand, obtaining legal protection in multiple countries is very expensive and difficult. Therefore, in recent decades there has been an attempt to break this principle, the convergence of intellectual property rights, especially in the harmonization and to provide adequate protection, in particular through the conclusion of international treaties and agreements. These processes play an important role as international organizations such as WIPO, WTO or the European Communities (Maskus, 2000).

## 2.4 Authorship

Authorship is the oldest, the most important, and the most solid institution related to intellectual property rights. Even though, many results of intellectual activity are subject to trade and exchange, the authorship is hardly ever subject of such exchange. Authorship plays an important role in ancient Greece and Rome. As already stated (Long, P.O.,1991) true authorship honors real authors, but many disregard authors who falsely claimed their authorship. This is a natural attribute of authorship, that it is impossible to directly prove claimed authorship. Sometimes it is obvious who the real author is and who falsely claimed the authorship, but it does not mean that real author won't face threats of authorship abuse. In other cases, it is possible that same idea appear at the same time in minds of more people, for example the lighting rod.

### 2.4.1 Authorship as subject to trade

Currently in developing societies, an institution of authorship has to develop accordingly. Human cooperation is necessary, and the product of human creativity is rarely the result of a single mind, but product of many individuals. In the case of book, it is still possible do divide a book in parts and give the credit to authors; in the case of movies, it is more complicated, since there are more people to take parts.

Each of them brings ideas to their part of work, and at the same time they have to cooperate with each other to make the movie complete. There is the director, plot writers, musicians, actors, and recently a whole team of people adding post processing (Kinsella, 2001). In case of software development, it is technically simpler to track down who contributes which part, though these authors are usually virtually unknown to consumers of the final product. For people who work as paid employees or contractors, they receive their rewards according to the contract they voluntarily signed prior to the work. Next time they can use their authorship of prior work as reference for a future contract. It is usually simple to find out if someone claimed his authorship fraudulently by crosschecking previous references. We can see that even though their credit for authorship is not known in general public, institution of authorship is used almost in original form.

## 2.5 Patents

Patents are a form of protection for inventions. There are many misunderstandings how the patent system works, hence it is necessary to explain how the system works. Firstly despite of WTO and WIPO's effort, in most recently matured TRIPS agreement, the patent systems significantly differ among countries. The differences are not significant in the purpose or motivation of patent systems, but rather in technical details of application, enforcement and range of patents. These differences are essentially important for business calculations of economic agents. For instance, expenses for application, renewal fees, processing time of applications, and uncertainty of invalidation (Karjala, 2008). Under WTO TRIPS agreement, the patents should be available to all inventors for any invention in any field of technology and the duration should be at least 20 years. Different types of patents can have different patent terms.

Patents are granted for inventions that are world innovations, have inventive character and are susceptible for industrial application. Therefore, the procedure or the product itself can be patented. Among the inventions that can not be patented we include: mathematical methods, scientific theories, rules, playing games, discoveries, information and computer programs. These can be patented but sometimes the granting is exempt. In recent years, patents became overwhelmingly popular. It is so

popular that many patent offices in the world are overcrowded with patent applications, which necessarily results in long patent application pending times. In last report United States Patent and Trademark Office (USPTO) had 1.2 million pending patents, which is incredible amount considering that in history of USPTO since 1790 they issued only a bit more than 7.5 million patents (Charvát, 2012). The average processing time has increased as well. Despite the efforts to speed the application process, it still takes at least 26 months before USPTO's first action. Such a system cannot be described as very efficient in any way. All three major patent offices, USPTO, EPO, and JPO, face similar situations. It is important to point out that the patent application in the EU is far more complicated and much more expensive than application in the USA and Japan (Scotchmer, 1991). European patent office does not issue community patent, but European patent, which have to be later validated at national patent offices (World Intellectual Property Organization, 2012).

### 2.5.1 Details about patent application

The administrative procedure for patent applications varies significantly between countries in procedural and technical details, but institutionally the process is very similar to each other. Patent application must include one or more claims defining the invention. The invention has to be new, inventive, and useful or industrially applicable. Subject areas differ among countries, for example business methods, computer programs, and others.

WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is a treaty, which should guarantee minimal definition of patents in all WTO member states. Patent should be available for any inventions, in all fields of technology with minimal duration of twenty years of protection. This definition brings lot of controversy, since "all fields of technology" does not clearly specify if the patent has to be granted even for computer software or business process. So far there are still significant differences around the world.

Patent procedure has several phases, as described in the diagram. There are several phases, where patent application can terminate and possibly ruin invested efforts. In preliminary examination, patent office checks if an application has all of

its formal requirements. In this phase, the application is confidential so it still can be withdrawn without disclosing the invention. Then the application is published and thus available for everybody. In this phase, applicants can decide if the patent would be commercially viable. If so, following by request for substantive examination and pay the larger proportion of patent fee (application 45 €, examination 110 €, on issue 50 €). Such opportunity ends after three years. Patent can be revoked even after it is granted, in such cases, patent is declared as never existed. This makes all previous license contracts worthless.

### 2.5.2 Costs of patent application

Patent application costs vary significantly depending on how global and how long the protection is that the applicant is seeking. A ten year protection in Czech Republic would cost cumulatively as little as 1000 € if it is done directly and solely by the inventor. For this price the inventor would get very little protection and it would probably be more difficult to cover the cost of R&D and patent application, because with issuing the patent the patent would have to be published. After that, everybody outside of the Czech Republic would be able to remake his invention, produce, and sell it. They would not be able to apply for patent elsewhere, but still the difference between Czech Republic market and rest of the Word except the Czech Republic is incomparable.

Patent application in other patent offices are more complicated to manage, even though there are few approaches how to simplify such process. For example, Patent Cooperation Treaty (PCT), European Patent Convention (EPC) and some regional patent offices. Application in foreign countries usually needs to hire a patent attorney, translate application to each local language, pay application fees in each patent office, and later make sure that all maintenance fees are paid at proper time. And there is always risk that the patent application or granted patent would be appealed later, and possibly ruin all the investment into patent application.

In 2005 the European Patent Office estimated that the average cost of obtaining a European patent (via application at EPO) and maintaining the patent for 10 years was 32000€ (European Patent Office, 2005). In contradiction to European Patent there is US Patent, which costs \$6,360 for 11.5 years, plus attorney fees (The United State patent and trademark office). No translation is required and patent,

maintenance fee is paid only three times during its duration. Prosecution of US Patent is done at federal court once for the whole United States.

## 2.6 Industrial design and Utility model

From a theoretical point of view it's not necessary to repeat the discussion about industrial design and utility model, because they aren't very different so I will just shortly describe the differences.

### Industrial design

This right is for protecting new innovative and distinctive design solutions of products. It is combination of innovation and creativity, which aren't otherwise enough to get patent or copyright protection, but deserve to be protected in similar way as Trademark. Protecting exact design from copying doesn't prevent others from using the same tools and ideas to create their own design, but stop them from blankly copying someone else's effort and market success.

### Utility model

Sometimes called —petty patent|| or —small patent|| this protection is very similar to patent, but is cheaper, usually shorter, but provides less legal certainty. *“As opposed to patent protection, means of production, work activities and biologically reproductive materials are excluded”* (Industrial Property Office Of The Czech Republic, 2012). The application procedure is faster because it only checks the formal validity and skips the examination of novelty and research of existence of conflicting invention.

## 2.7 Trademark

The least controversial institution of Intellectual Property Right is trademark. Unlike patents, copyright, or trade secrets, trademark does not create any artificial market distortion, but helps improve market efficiency by lowering information costs and reduce fraudulent behavior. History of trademarks dates back to ancient civilizations and probably even earlier.

*“A trademark is a distinctive sign, which identifies certain goods or services as those produced or provided by a specific person or enterprise. Its origin dates back to ancient times, when craftsmen reproduced their signatures, or “marks” on their artistic or utilitarian products. Over the years these marks evolved into today’s system of trademark registration and protection. The system helps consumers identify and purchase a product or service because its nature and quality, indicated by its unique trademark, meets their needs”* (World Intellectual Property Organization, 2012).

## 2.8 Copyright

Copyright is the most difficult institution of IPR to define and to understand. The question "What is copyright?" has a rather simple answer: "Copyright is a form of protection provided by U.S. law to the authors of "original works of authorship" fixed in any tangible medium of expression (Sprigman, 2004). The manner and medium of fixation are virtually unlimited. Creative expression may be captured in words, numbers, notes, sounds, pictures, or any other graphic or symbolic media. The subject matter of copyright is extremely broad, including literary, dramatic, musical, artistic, audiovisual, and architectural works. Copyright protection is available to both published and unpublished works" (Dudas, 2009).

### 2.8.1 Private initiatives in intellectual property

N. Elkin-Koren, shows three main reasons why the level of copyright protection rises. First is that the legislative process is influenced by the content industries. Copyright law is important for small homogeneous groups, which have a lot to gain. Industries that are dependent on the intellectual property have over the last 100 years grown so substantially that even small increases in level of copyright protection has a profound effect. Although in recent times the debate has produced a few interesting lawsuits such as Eldred v. Ashcroft, law changes that lower copyright protection are rare. Finally, the international commitments established mainly in Berne Convention make it difficult to remedy some deficiencies on the national level (N. Elkin-Koren, 1997).

Optimal level of protection is higher for works with higher value (Landes & Posner, 1989). They argue that at the optimal level of protection must be the sum of consumer and producer surplus and exceed the cost of creating work. Higher availability of works with lower average value therefore push on the optimal level to lower it. Lowering the value is suggested firstly by the type of on-line communities that they have adopted and secondly by the fact that huge amount of authors start to create works with equal or lower value than professional authors with registered copyright. Strengthening copyright protection, together with difficulty to safely navigate through copyright law, incentivize private subjects to find ways out from the copyright monopoly. With strengthening intellectual property rights allows public domain more valuable resources. In other words, in this situation it allows for some initiatives to be more profitable to not take protection and let their works fall into the public domain. First example, direct investments are provided mainly by pharmaceutical firms or hardware and software companies investing into the open source software (Merges, 2004). Others are based on custom creations. Together with uncertainties created by intellectual property law is strengthening copyright protection encouraging private subjects to find their own add-ons to intellectual property law. Some visions even grow to the creation of new licenses. They build upon existing intellectual property frameworks, altering the traditional boundaries and opting out some established intellectual property rights.

## 2.8.2 Main issues of current copyright institution

### Duration

Issues of current copyright institution are very broad and many are far beyond scope of this thesis. One of the most visible is the duration of copyright protection. Current duration of copyright protection is 70 years after death of the author (Copyright Law of the United States of America, Chapter 8). Considering that this right lasted without any additional cost; it is much longer than most of the reasonable duration of tangible goods, real estate, and any other possessions. Seventy years after the author's death is also longer than the author's children's lives.

### Copytheft and copyfraud

Unlike patent, there is no mandatory registry of copyrighted works, and also no fee for copyright protection. In the US it's possible to register copyrightable work at

USPTO, but copyright is valid even without such registration. All the costs for copyright enforcement is thus on the government, and there is no real risk for people who falsely accuse someone from copyright infringement. Theoretically there is a penalty for such behavior, but currently it's hardly ever used. In the current situation with large corporate copyright owners, it often turns out that even the company is not aware of the content that they own and that of which they don't. Derivate works and fair use makes the situation more complicated for automatic analysis (Kříž, 2007). There are several cases where the right owner was falsely accused of copyright infringement and the content was removed. Especially under the DMCA regime, the system can be abused to extent that there can be considered censorship. Such a situation is clearly favorable only for content distributors (U.S. Copyright Office Summary, 1998). There are also other cases of false declaration of copyright ownership, when the owner is someone else or the copyright protection already expired. Even though there is the possibility to punish such fraudulent behaviors, it hardly ever happens. Hence it does not pose a real financial threat.

### **Other ways of distribution**

Around the same time that the copyright institution was introduced, the first public libraries opened and they have are settled as inevitable part of society. In some cases, publishers are forced to give free books to library each time a new book is published. Everyone can then go to the library and read as many books as they want without paying any royalty fee except small membership fee. It is interesting that there is actually a positive correlation between availability of libraries and book sales. There is not any similar institution for music, movies, and computer software, except unauthorized offers on the internet. It is very interesting that current development in technology allows creating ultimate collection of digitally available content for free, despite that it is unauthorized and sometimes illegal (Harper, 2003).

This situation is currently very vibrant. It seems that content distributors are taking a grip on drafting new legislation against unauthorized distribution on the internet and other instrument makers. It happens several times in history and it usually takes a long time to settle. There is one important difference this time, the total revenue of instrument makers and other corporations with interest in digital products far exceeds the size of content distributors. At the same time the previously

unaffected group of readers keeps getting involved and the topic almost reached a state of becoming a political issue. It will be only a matter of time when politicians will take a chance to gain support from a large group of readers. Maybe in near future there will be unprecedented change in the way copyright legislation is drafted (Dobřichovský, 2004).

I think that current situation of copyright is not serving the public well and I believe that the copyright institution should utilize some ideas from the patent institution. For society, it is better if there are protections for works, which need very large capital investment. But, such a protection should last very shortly and the investors have to pay for such a privilege from society. The length of copyright protection is also an issue, there is no reason why some works cannot have infinite duration of copyright protection, but such protection cannot be free and automatic. Only tiny fractions of works keep their commercial value for more than a couple of years. With excessively long copyright protection such protection do the exact opposite than it supposed to do. It prohibits anyone to redistribute the content and if the owner does not see any commercial interest of redistributing the works, the works become unavailable for any potential customer.

## CHAPTER 3

### METHODOLOGY

This thesis is guided by a qualitative research. This method, also commonly referred to as evaluation, does not rely on analytical data. In fact, the evaluation in this method is performed through the analysis of different indicators with the purpose of rating that the intellectual property is correct, i.e. of determining its importance. The indicators cover all the aspects that can impact the value of an intellectual property asset, covering legal aspects, the technology level of the innovation, market details and company organization. Qualitative research has an inductive character, which means that I will start with specific observations and theories that are formulated towards the end of the research and as a result of observations. This is often linked to qualitative interviews, which I will discuss in the following chapters. The expected outcome of the interviews should be the intersection between theory and practice.

During the creation of this thesis across all its components, I follow these steps:

1. First problem definition and delimitation of the problem areas.
2. Determination of total and partial objectives of the work.
3. Economic analysis of losses in each of the problem areas.
4. Economic and social consequences of the impact of these pressures.
5. Theoretical definition of the study area.
6. Create a summary of the issues examined.

The main sources of information that were the basis for this work include legislative sources relating to the European Intellectual property rights or World Intellectual Property Organization (WIPO, 1967) which focus on promoting intellectual property in the context of international cooperation between states and organizations. Currently WIPO brings together 187 countries, more than 90% of all countries in the world. Equally important is the TRIPS Agreement (Agreement and the Trade-Related Aspects of Intellectual Property Rights, 1994), whose main activity is to remove distortions and impediments to international trade, while promoting the necessary protection of intellectual property. Information concerning the chapters on economic aspects and economic losses were drawn from the relevant

economic statistics and expert resources as World Economic Forum Data, Economic Research and Statistics Division of the World Trade Organization.

### **3.1 Methodology exploration**

As I have indicated, to calculate the extent of losses from any illegal activities is not easy. Economists and statisticians around the world are looking for ways to map and to calculate not only the loss arising in connection with violations of intellectual property rights, but the entire area of the gray economy. However, the individual statistical forecasts mainly in terms of estimates, analysis and deriving. This is due to the fact that the number of detected cases of illegal activities is just the tip of the iceberg and the real numbers of this activity you can only assume, or you can make a study based on the known facts and available data or evidence. This problem is so complicated that the available statistics are often distorted and thus do not reflect reality. In this context is necessary to mention the value of seized goods, which is reported at prices for the purposes of statistical data corresponding to the originals products. Supervisory authorities valued the different products according to internal regulations and in consultation with the owner of trademark. In terms of statistical reporting losses this procedure is not entirely correct. It can be easily assumed that the consumer would have not bought the same quantity of goods in the prices of original products, which are a multiple higher than counterfeits (Goddard & Melville, 2004). In other words, the demand for original product will be lower due to higher prices (with rising price levels of products there is a decreased purchasing power of the consumers of the product and also at the same time there are changes in consumer preferences). So it does not constitute the actual value of the goods which would be reflected in the exchange transactions on the market of products and services. Estimated real value of seized goods is by his nature and quality of approximately 1/4 to 1/3 of the original products (Nemrava, 2006). From these findings, it seems to me more sensible to describe and analyze the losses mainly by quantitative statistical data.

### 3.2 Role of intellectual property in economic growth

Intellectual property and its contribution to the national economy lies mainly on the protection of economic entities operating on the market of products and services. In this sense, it is about the protection of return on investment that is being spent by economic entities to build new and innovative products in order to have such a product, even for short time period that can temporarily benefit from certain monopoly position on the market (Šíma, 2001).

Each economic entity has an interest to succeed in a competitive environment, i.e. to ensure the best possible market position and generate profit. For this purpose, it seeks for innovation of its production and investing in new technologies. Owners of intellectual property rights develop considerable effort, time and financial resources to innovation, investment, research and new product development. If these input costs were subsequently compensated by the profit from the sale innovated (new) product, businesses will most likely lose the incentive to innovate and invest in new products and technologies, which would in the long run mean not only the loss of market position, but also the possible abolishment of the business. Even more serious consequences should be a loss of motivation to innovation and investment in nationwide and global contexts. This would lead to stagnation in the economic environment, which would ultimately affect the whole society. Needless to say that most would be damaged by such an economy, which is aimed at producing innovative products, mainly advanced economies. Protection of intellectual property has also crucial impact on the demand side of the market and basically in effect for the entire market economy, which allows the consumer to distinguish products and services to individual producers. It is an effective communication tool between the consumer and the product manufacturer, where the manufacturer's works expresses entrepreneurial skills and gives the note image of your company. In this sense, the importance of intellectual property is a certain identification and orientation of participants on the market of products and services (WTO, 2011). Intellectual property and its protection gives rise to the creation of new innovations and inventions and the conditions are created for the future development of the knowledge economy.

Currently, there is no need to worry about such a crisis scenario. My goal was simply to justify the relevance and importance of intellectual property to the national economy and to highlight the economic impacts that might arise in case of some negative economic phenomena, and in this context I mean the violation of intellectual property rights. Therefore, the area of intellectual property is among the legislative priorities of the developed countries.

### **3.3 Violation of intellectual property rights**

Worldwide widespread phenomenon of piracy and counterfeiting, i.e. violations of intellectual property rights usually associated with copyright and the rights of the trademarks has a profound negative impact- economic, social and political. Piracy and counterfeiting adversely impinge on fair competition; undermine the sense of protection of industrial property and cause damage not only to the owners of rights, but also society as a whole. This moment is one of the key challenges for the legal industry limit undesirable (Andersson, 2008). It is considered that the situation can be improved by consistent application of industrial legal protection, improving its quality, improving public awareness and strengthening the resources associated with effective enforcement of these rights.

Globalization and technological advancements have changed the economic world. The growing international trade, investment and development of the economy also carry major problems. Global and technological change, come up with the opportunities for businesses and consumers. The decreased barriers to global commerce enabled businesses to reach the growing markets and provide consumers with a wide range of products. Technological changes allow a "freer" innovation model with more crosswise enrichment of companies and the ability to use costumer creativity (Boldrin & Levine, 2004).

Implementation of ideas is expensive, and on the other hand is cheap to copy originals. Ideas can still be cheaper and it is cheaper to copy and distribute via the internet, thus reducing the marginal cost of reproduction and distribution toward zero. The result is that the music and film industry loses by CD piracy and illegal online file-sharing around 30% of annual revenues. Precisely in the music and

software industry piracy rate is particularly high. Global markets have to deal with rights that are largely national (National portal for European research, 2013).

The proportion of pirated and counterfeit goods is in world trade around 5-7%, which represents a loss of about 200,000 jobs in the world and only in Europe financial losses of 400-800 million € per year. According to the European Commission, one of the main reasons for the current dismal state in the context of counterfeiting and piracy are differences in the enforcement of intellectual property rights between the Member States of the European Union, and therefore intervention is needed at the community level (European Commission, 2012).

In doing so, everyone can contribute to reducing piracy and counterfeiting. If you honestly answer the question of whether we wear only branded clothing, branded watches, original music albums and films or else we have at home often cheaper imitations, I'm sure that not all of us will respond positively. Countries like France and Italy changed its legislation in combating against counterfeiting, where the consumer is responsible for the purchase of counterfeits. If the local police saw someone on the street, for example, with false branded sunglasses, he can be threatened by a penalty of up to 3000 €. Something like that I can not imagine in Asian countries in the next few years.

Experts said that it would be good to capture the cradle of this vice, which is, in their opinion, China. The United States threatens Beijing's disregard for copyrights introduction of economic sanctions. The consequences would be certainly fatal for China, because China is largely based on the export of goods (Hulle, 2011).

### **3.4 Economic subjects damaged by counterfeiting activities**

As I mentioned at the beginning of this part economic reasons are the cause of the production and sale of goods infringing intellectual property rights, and due to such tasks right holders considerable damage. Chiefly economic reasons in the form of loss of consciousness owner of intellectual property to efforts to curb this illegal activity. From a general point of view, the main motivation tool of every economic entity active in the market of goods and services is producing a profit. Protection of intellectual property rights is synonymous in meaning for protection of investment in knowledge and innovation, and thus violations of intellectual property rights is one

of the main sources of danger motivation for innovation and the existence itself of a business (Šroněk, 1998). These reasons lead owner of the rights to the effort of suppressing violations of intellectual property rights. Damaged body has the opportunity to exercise private or public instruments to enforce the protection of their rights. Entities that use intellectual property rights protection is granted for a limited time the exclusive right to own and protect your talents and skills over other market players. These tools can be: patents, utility models, copyright, industrial designs, trademarks, etc.., which I have mentioned in the second chapter.

Sales of products infringing intellectual property rights, creates undesirable competitive environment for owners of these rights. You can compete in different ways, such as quality, innovation, new product or price. The existence of counterfeit goods, or goods that are interchangeable with the original production arises for the owners of intellectual property rights, competition to which they must respond in a competitive environment. Consumer in their decisions compares usefulness, quality and price of the product. However, for consumers with lower purchasing power this is a decisive factor price. The consumer prefers a product at a lower price level, i.e. in most cases fake (Industrial Property Office of the Czech Republic, 2012). Consumer behavior is therefore in the marketplace standard and within the rules of market mechanisms. In relation to consumers, it is possible to appeal only to the social danger of counterfeit production. The problem is therefore necessary to look at the supply side of the market.

I am convinced that in addition to private and public instruments in the fight against infringements of intellectual property rights can also apply market instruments. The problem I think is the main difference between the original price and the price of the counterfeit production when the price of the original product is  $x$  times higher than the price of counterfeit. If the owners of intellectual property rights in response to the competitive environment raised the standard mechanism and reduce the prices of their products, there would be a change in consumer preferences and so that the consumer could in terms of quality and price to prioritize genuine product from counterfeit. Finally it should be noted, however, that this tool in the fight against goods infringing intellectual property rights by right holders for the very costly and in practice, therefore, uses very little. At present, most owners use

public rights instruments which, although effective in most cases, but can eliminate only part of the total production of counterfeit (Štros, 2003).

### **3.5 Compensation of a damage, rights and responsibilities of damaged subjects**

According to (European Commission, 2012) economic subjects damaged by counterfeiting activities may prosecute compensation for damages and lost profits. In addition to these options, injured parties are entitled to claim the moral satisfaction in the form of a public apology in the media or professional journals. Reasonable compensation may consist in monetary compensation at least equal to twice the license fee that is usual in obtaining a license to use rights. Assumption of confession demanding claim is proof of non-pecuniary damage, which is not damage to property and loss of profit. Damaged subject can also claim for unjust enrichment. This is a gain that was illegally acquired by subject infringing intellectual property.

Economic subjects harmed by counterfeiting activities who assert their rights through public proceedings, as well as costs incurred. Damaged entities must in the lodging complaint for conducting intervention supervisory authorities to lodge a security to cover the costs of the supervisory authority, in the case of an unauthorized incidence. This procedure usually complicates and slows public proceedings. At the same time the owner of the intellectual property law recognizes this as an additional security costs that must be incurred in the exercise of his rights (European Commission).

### **3.6 Structure of products infringing intellectual property rights**

During analyzing the extent of economic loss arising in connection with trade in goods infringing intellectual property rights is also important to pay attention to the structure and types of counterfeit products. The subject of intellectual property is practically anything that is connected to the economic benefit of a person who violates the law. It is not only technically simple products, but also products that are technologically complex

and developmentally challenging. Among the goods infringing an intellectual property rights can find a wide range of products ranging from counterfeit luxury (jewelry, watches, handbags, etc..) up to the everyday consumer goods (eg. Textiles, cosmetics, software, toys, cigarettes, alcohol, but also drugs, food, etc..) (Annual Report of the European Commission, 2013). List of goods could be almost endless. Experience shows that counterfeiting organizations focus primarily on products of mass consumption, however it can be stated that the subject of counterfeiting is any product that is both attractive to the consumer.

### 3.7 Enforcement of intellectual property rights

*"In case of an unauthorized interference with the intellectual property rights, the owner can claim this right in court, particularly that the infringer refrain from actions which are considered as a violation of law, and the consequences of threats or violations have been corrected." (Jakl, 2008, page 207)*

However, before the rights owners select judicial process, they should first take advantage of all the possibilities of extrajudicial defense. Thus, by a registered letter to address of the infringer and start negotiations with him, what may include license offer. However, if negotiations do not lead to an agreement, but both sides are keen to avoid litigation, they may choose a qualified intermediary (mediator). Parties may also submit their dispute to an arbitral tribunal (Kříž, 2007).

### 3.8 Strategy for protection of intellectual property rights

#### 3.8.1 Formal protection tools

Industrial property rights are characterized by their territoriality, therefore it is necessary to provide protection in each state where it is required. In choosing between the formal tools play an important role in the protection their cost, the time required for obtaining protection and legal certainty that the type of protection provided (scope of protection provided) (Bainbridge & Howell, 2009 ).

For the protection of intellectual property objects can be used three control systems, through which it is possible to obtain protection for the individual objects

of intellectual property. One option is called “national tour”, which is used by domestic applicants who provide such protection in the territory in which they operate. This way you apply online as well as foreign applicants who wish to obtain protection in the particular state. If the applicant is seeking protection in multiple countries, then has the option to choose the path of “regional” (related to the emergence of integration groups) or “international” (login trademarks to foreign countries) way through international systems. The decision which way to choose is dependent on the business and financial aspects (United States Patent and Trademark Office, 2008) .

### 3.8.2 Informal protection tools

The informal tools can include:

**Concealment** of know-how and trade secrets is usually used to protect manufacturing processes, engineering and manufacturing documentation, which would not be protected by formal tools for failure to meet the statutory requirements of protection.

**Publication** selects a company when not intend to get formal protection, but it is important that the matter should not protect competition. The publication will undermine the novelty requirement, which is necessary to obtain protection. The publication being undertaken in the event of minor solution, what do not make sense to expend resources to acquire formal protection. (Jakl, 2008)

## 3.9 Current state of knowledge in the studied issues

Violation of intellectual property rights is an issue which is examined since the second half of the 19th century. Economic losses resulting from the violation of these rights are enormous unfortunately accurate statistics data about amount of total losses do not exist and in fact can not even exist. There are only estimates reputable experts which have appeared at the basis of published analyses of institutions dealing with the protection of intellectual property rights. Even these data are largely different from each other. For example, according to (Štros, 2003) estimates that violations of intellectual property rights causes worldwide annual economic losses of 176 billion \$, which represent two percent of total world trade. European

Commissioner for Taxation and Customs Union László Kovács, in a speech in the European Parliament on 8 February 2005 stated that annual losses due to violations of intellectual property rights worldwide reach more than 400 billion €. According to TIME Magazine (2004/7) trade with goods infringing intellectual property rights exceeds \$ 450 billion. Finally I would like to mentioned three information why we have to take into account intellectual property rights:

- 1) 39% of total economic activity in the EU (some €4.7bn annually) is generated by IP intensive sectors.
- 2) 25% of all employment in the EU (56 million jobs) is provided by IPR intensive sectors; 10% of all other jobs in the EU indirectly stems from these sectors.
- 3) 40% higher remuneration on average is paid by IPR intensive sectors than by other sectors. (European Patent Office and the Office for Harmonization in the Internal Market)

As you can see intellectual property is a phenomenon that is expected to grow in absolute terms and in proportion to global GDP in line with trends in international trade. From an economic point of view it is a very attractive type of business in which it is possible to fairly quickly make high profits. At the same time large amounts of money obtained from such illegal activities are used in the target countries, but are exported to countries where production of goods infringing intellectual property rights takes place. Later from there subsequently through investment returns back on the target markets. In this manner are a very significantly supported such a economies, where the counterfeit goods are manufactured. However, it is necessary to add that the problem with violation of intellectual property rights can not be seen only from geographically point of view, as the conflict between the owners of intellectual property rights in countries with relatively advanced legal systems and suppliers of goods from the third world countries with a low level of legal protection of intellectual property, or low production costs. Violation of intellectual property rights is implemented across the world and even entities from developed economies. The goods that violate intellectual property rights comes from nearly 150 countries, including 34 in the developed countries that are members of the OECD (Rozehnalová, 2006). It is

therefore evident that the perception of the problem in terms of "we" (Western culture) and "them" (ie some Asian economies) is incorrect. Finally, it should be noted that no matter how good adoption of the law will not enforce intellectual property rights in the practical work, if not quite correctly and effectively applied by the competent authorities. It must take a comprehensive approach to introduce a system of measures in the field of criminal, technical, organizational, administrative and international cooperation, etc. This requires not only the necessary level of knowledge and the necessary specialization, but also a necessary dose of creativity, because there are always new and new forms of piracy and counterfeiting.



## CHAPTER 4

### RESEARCH FINDINGS

#### 4.1 Economic losses arising on the European market - analysis of available statistical sources

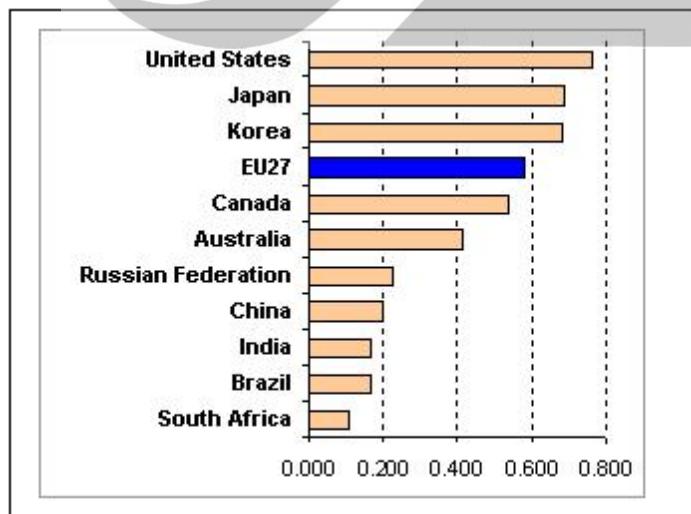
The main objective of this chapter is to establish a statistical analysis of the economic losses from the owners of intellectual property rights as a result of violations of these rights in the European market. From the statistics of European Commission between 1998 and 2004, the number of seized goods infringing intellectual property rights increased about 100% from 10 million in 1998 to more than 100 million products in 2004. In addition, the publication stated, and I share that view from personal experience and I fully agree that the number of customs interventions against goods infringing intellectual property rights in 2004 compared to previous years doubled to 22 000 cases per year (Eurostat). Although constantly increasing number of counterfeits does not reduce the imports of this article on the European market. Losses caused by the seizure of counterfeit products are successfully compensated for the sale of goods to be able to put on the markets of the European Union. Community customs authorities are able to carry out physical inspection of only 2-5% of the imported goods (Customs administration, annual report 2012). The actual volume of goods infringing intellectual property imported into the European Union far exceeds the number of products that are withheld.

Customs authorities have gained a lot of experience with detection of imported goods infringing intellectual property rights, are often able to recognize these goods by appropriate documentation and other circumstances. To this purpose they organize seminars and training sessions, in which they present themselves as representatives of owners of intellectual property to train customs officers in detecting counterfeits. Each product has different characteristics and recognition with the existing number of counterfeit products is very challenging detecting forgeries. Importers as well, trying to find increasingly sophisticated ways of goods infringing intellectual property to hide from customs inspection.

## 4.2 European market today

At present, the development trend trading goods infringing intellectual property rights within the European market is simile as in 2004, but there exist still some differentiation. In particular, the dominant position of the main suppliers of counterfeit goods on the European market - China is somewhat weakened. This is due to the fact that China has reduced the number of imports of counterfeit products, but mainly because even in this region the dominant importer creates competition. Launch of "new players" such as UAE or the region of Eastern Europe, which "represent" for example Bulgaria and Georgia. Position also strengthens traditional importers of products infringing intellectual property rights such as India, Hong Kong or Turkey. The statistical data presented by the European Commission, however, the highest increase in imports of counterfeit goods and to 15.63% recorded from the market called. Unknown areas when the goods are placed first in the free trade zones and then the goods are subsequently transported to Europe.

Many goods that previously came from Europe or the United States, now increasingly come from the emerging world. Twenty years ago from developing and emerging countries came only ten percent of manufactured goods, but it is expected that by 2020 the proportion will be fifty percent. (Foreign & Commonwealth Office, 2007)



**Figure 2.1:** Innovation performance in comparison with the main global competitors

Source: [www.europa.eu](http://www.europa.eu); 2014: online

As is evident from the graph that in February 2012 released the European Commission, to businesses compete in the growing global competition, they must be definitely innovative. According to the scoreboard, the Innovation Union in 2011 they have improved their innovation performance of almost all member states. However, the pace of growth is slowing and the EU still lags behind the world leaders in innovation - the United States, Japan and South Korea. Most European twenty-seven countries lose its competitors in terms of innovation in the private sector. Before emerging economies of China, Brazil, India, Russia and South Africa, the European Union has maintained a clear lead.

To protect the external borders of the EU is seen a substantial increase in the activity of the customs authorities of the Community. According to the European Commission of the Customs authorities in 2006 recorded 37,000 cases in which it was secured record 128 million pieces of counterfeit goods. In 2007 it was 43,000 cases and in 2013 and 61,000 cases, however was secured "only" 89 million pieces of counterfeit goods. By type of seized products to the European market is still the most imported counterfeit cigarettes, textiles, clothing or accessories. In this area, most checks were carried out by the customs authorities. There is continued rise of confiscated products posing a serious risk to health. It is primarily about drugs and foods. The high quality of these products is often impossible to identify counterfeit version without professional expertise. This significantly complicates the work of customs authorities, especially when it comes to products that pose a serious risk of the human body. Even though in 2013 was revealed more than 3.4 million counterfeit drugs. Other commodities are seized goods such as toys, jewelry, cosmetics, electronics and more. Most counterfeits were discovered in Italy, Germany, Belgium, but also in Central and Eastern Europe, for example in Bulgaria, Romania or Poland. It is clear that the European Union understands the issues of violation of intellectual property rights as a serious economic and consequently societal problem. It is therefore necessary in addition to the activities conducted at the external borders of the European Union, to focus also on the location of distribution channels and methods of transport.

### 4.3 Software piracy - statistics

Software piracy or copyright infringement could be an issue for the whole thesis. There are many ways this widespread illegal activity. An example might be an unauthorized use of computer programs over the extent allowed by law, which is in the software industry currently the most important economic factor negatively affecting the sector. Other methods of software piracy is homemade production of illegal copies, so-called "burning" or unauthorized distribution of software through communication technologies. To analyze and describe the evolution of software piracy is expedient to use statistics. By default, the comparison of the extent of the phenomenon of international studies used specialized agencies.

Worldwide software piracy rate stood at 42% in 2013 (62.7 trillion \$) of all production in this market. This means that almost every second software product in the world is a pirated copy. It is therefore obvious that software piracy is currently one of the most serious issues of violation of intellectual property rights with economic and society-wide impacts. The most troublesome region is Eastern Europe, where piracy rate reaches 72%. The region offers a few countries, such as Moldova with 94% or 84% of Ukraine that are affected by this phenomenon as alarming. In contrast, traditionally the region with the lowest share of illegal software is North America with 19% and slightly worse Western Europe with 29%. The country with the lowest rate of software piracy are the USA with 21% of illegal software, but it is interesting that even this percentage is on the big market like the American market, the loss of over 8 billion \$ (Business Software Alliance).

In my opinion it is quite interesting to see comparisons between regions and even individual nearby countries. It may seem obvious that generally corresponds to the maturity of the economy and its orientation towards modern technology on the one hand, a higher rate of software piracy on the other. Thus, countries with a strong background in information technology usually have a relatively low level of software piracy in Europe, for example United Kingdom and the Nordic countries, especially outside Europe, the USA, Australia, New Zealand or Japan. On the other hand, states that traditionally lag behind in this area, have this greater degree, for example Zimbabwe, Pakistan, and others. Yet surprisingly most problematic region are the above-mentioned states, which are located in a relatively quiet region of Eastern

Europe. In this example, it is clear that the issue of violation of intellectual property rights affects all regions of the world and can occur even in relatively developed regions.

#### **4.4 Analysis of system protection of intellectual property rights in enterprise**

Firstly I would like to mention that during structure of the work, I assumed that I will examine the issue of intellectual property protection for multiple companies, where I could with the results compare the strategies of involved companies. Unfortunately, the reality was completely differentiated, the vast majority of companies and organizations that I have personally visited, did not want to share (due to the sensitivity of the issue) their experience, knowledge and problems. Despite initial failure, I've compiled a questionnaire regarding intellectual property and sent them into ten companies, while in eight cases, the questionnaire was completed. With the results of the questionnaire and commentary you can apprise in the appendix. Finally, I was lucky when a family friend introduced me to a company in which he works and for one week I had the opportunity to become familiar with the issues in practice.

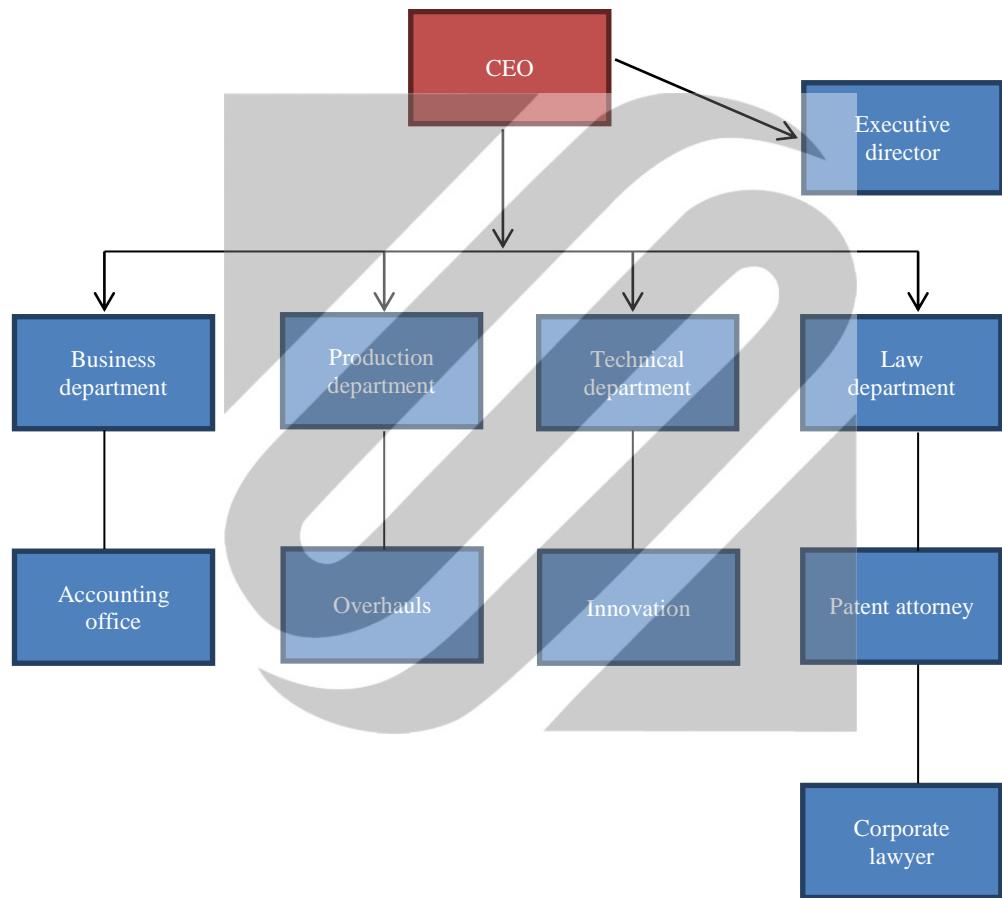
##### **4.4.1 Introduction of the company**

Aviation Enterprise Technologies and Services Ltd. works on the Czech market for over 21 years (founded in 1992). The principal activities are general overhaul of aircrafts, service support or also research and development of communication and navigation systems. The company is a subsidiary firm of Aircraft Repair Company Trenčín JSC (60 years of tradition, well - established aircraft repair and manufacturing company, the only one of its kind in Slovakia). The company has about 15 permanent employees (CEO, executive director, six engineers, two computer specialists, one pilot + personnel from legal and technical departments of the company). In case of larger orders, the company hires external employee. The great advantage for the company is that they have virtually no competition. Between

the main procurers are themselves owners of even one aircraft up to the companies or armies from Africa, former post-communist countries or Asia.

The company is practically divided into three sections:

1. development department- technicians, pilot and IT specialists
2. aircraft engineers- technicians doing overhauls
3. business- law department



**Figure 3.1** Organizational structure of enterprise

#### 4.4.2 Protection system

The Aviation Technologies and Services Ltd. have set up their own patent department. In establishing the patent department discussed the issue regarding its size, internal structure, and of course the budget. Size of the patent department, a number of its employees were given by a range of industrial rights agenda, currently the firm has only trademarks so one patent attorney is sufficient. Organizationally, the patent department incorporated in the legal department.

The main task of patent attorney is especially representing the company in proceedings before the Industrial Property Office. The services provided are as follows:

- Consultation on the appropriateness of protection
- Monitoring the legal situation
- The provision of financial and time sheet
- Preparation of applications
- Maintaining the validity of the mark
- Contentious proceedings before the office

Patent attorney manages payment of renewal fees and maintenance of industrial property rights. CEO is regularly alerted in advance of the obligation to pay the appropriate fees, including the amount and maturity. A patent attorney also helps those fees and implement. The patent attorney has no fixed working hours. Attendance adapts to suit his needs. The owner has agreed a price list of services, including ancillary costs and official fees.

The company has mostly know-how about new technologies or manufacturing processes. Thus, the personnel has the knowledge and insights that are essential to the operation of the company. Thus, the company that possesses information, knowledge and experience to achieve results which would otherwise, without these knowledge, did not reach. Researched the company is trying to ensure that such information could not be detectable from a mere examination of the product or from the mere knowledge of production technology. This is done, for example, artificial applications unneeded components into their products, to deceive potential counterfeiters.

The company is well aware that the know-how can be treated naturally. Know-how can be transferred to a company, disclose to third parties to use (free of charge, or for a fee), or may even be the subject of contracts of mediation know-how. Therefore, the company has several contracts with partners, which provides know-how, the advantage is that it has an exclusive distribution agreement with a subsidiary, so the technology can offer virtually anyone in the world. I had the opportunity to look into some of the contracts, with different price (usually by region) or the length of the contract (in dependence on the time period or number of uses). Itself head of the patent department told me that secrecy of know-how is not its essence. On the other hand, know-how, which is kept secret and is generally known, is not a negotiable, so it is reasonable to protect the entrepreneur. The company is therefore trying to relative secrecy, which in practice means that the know-how in the company knows more people, but it should not be publicly available or should be known individual elements, but their composition will be hidden. At the same time he complained that Czech law does not provide know-how any special protection. Know-how can be protected as a trade secret, which is regulated by the commercial code institute. To ensure that the know-how is protected as a trade secret, it is imperative to have a business interest in the confidentiality of know-how and accordingly its secrecy and indeed provide.

To my question about confidence in the staff who is familiar with know-how and may it possibly exploited, he told me that, staff has in labor contracts obligations of confidentiality and have not had a single problem. On the other hand, admitted that even if know-how would be abuse by own employees, it would be difficult to prove abuse before the court.

#### **4.4.3 Assessment of intellectual property protection**

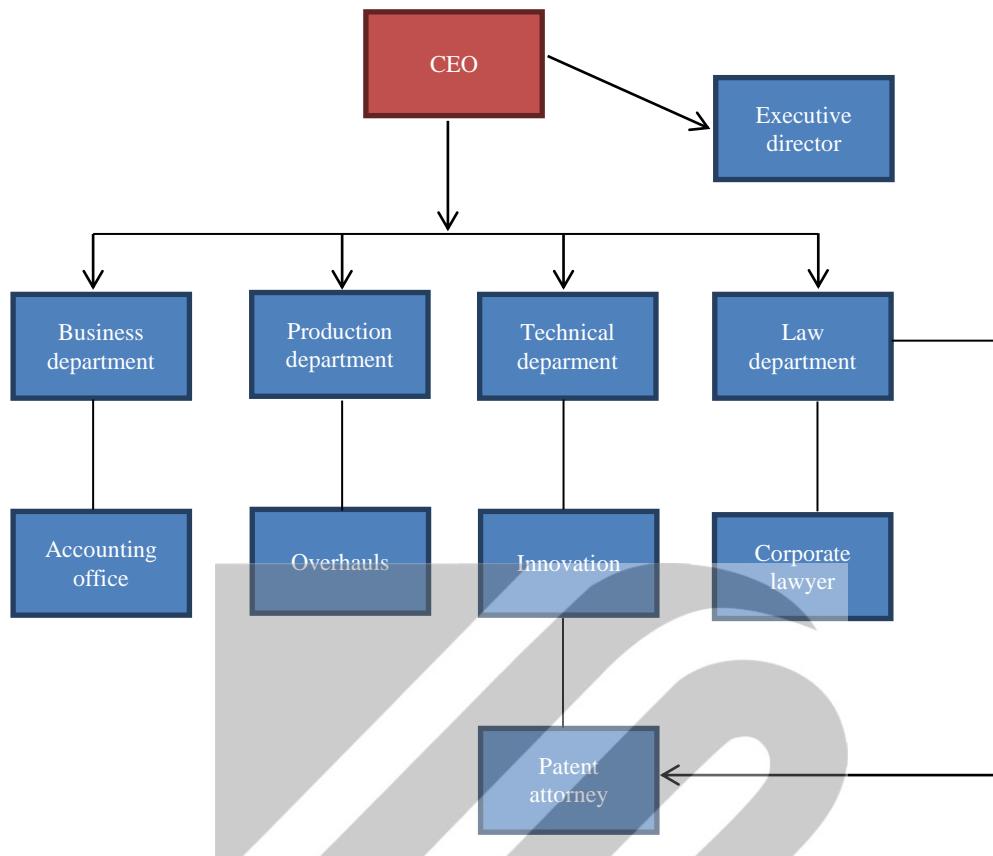
Aviation Technologies and Services Ltd. has established a functioning patent department with its own patent attorney, but works according to the needs of a given situation at a pre-agreed price list. The CEO have chosen this existing system of protection in order to create strong bonds with patent attorney, CEO attested whether the attorney have appropriate knowledge and experience and whether he can fully count on him in the future. Agenda of industrial rights is currently narrower and business does not keep pay employees dealing with this issue. On the other hand,

cooperation and mutual communication with patent attorney from the perspective of the CEO is fully adequate to the needs of the business. It works flexibly, in case of a collision patent attorney immediately inform the holder and place the necessary steps. Since entering trademark registration, patent attorney performs regular monitoring of the international system that has not been published in the trade mark which is identical or similar to the trademark, which is owned by Aviation Technologies and Services Ltd.

#### **4.4.4 The proposed changes of the system**

Aviation Technologies and Services Ltd. have future plans to expand the industrial rights of industrial design pattern for the developing new dashboard. On this basis, I propose three changes to the system.

The first change would be in the way of rewarding patent attorney and his free time working. In industrial design, the patent attorney will move from the law department to technical department. The reason is the proximity to the place of production of the new dashboard, which will be suitable for the registration of industrial designs. As a patent attorney has a technical education he can be assisted in production. Therefore, the appropriate patent department will move into innovation department. Organizational structure would look as follows.



**Figure 4.1** Potential organizational structure of the enterprise

The second change would be radical. The current financial situation is stable but future plans will require high expenses. Therefore, I suggest that the patent attorney will be completely canceled and the company would remain just a corporate lawyer. Administration of industrial property rights would have narrower character and company will outsource them. During complete outsourcing would be agreed upon flat remuneration.

The third change would be a combination of the above two changes. Patent office would be canceled and the current patent attorney would be external the employee. The CEO would manage agenda of industrial rights alone. The question is whether the CEO of company can managed these things together, because the activity is a very time-consuming. Services of an external patent attorney will be used only in complicated cases that is not enough on CEO's own business experience. It may not be just a complicated issue, but also in the case of the industry design CEO has no experience. The method of remuneration will be an agreement. It would be a pre-approved price list for the services or flat remuneration.

## CHAPTER 5

### SUMMARY, CONCLUSION & RECOMMENDATIONS

In the final part of my thesis I would like to summarize findings that I've obtained in this thesis and also try to assess whether the goals that I have set, I managed to achieve. My task was to reflect on the economic aspects of intellectual property rights, introduce the theoretical and practical foundations of exploring the issue in a broader social context, and then describe and analyze existing knowledge resulting from these issues in a comprehensive overview and identify the nature of the problem.

**In relation to the first sub-goal-** I described how tools protecting intellectual property works and what are their strengths and weaknesses. Each of the tools face some form of challenge about its existence and efficiency, but it's important to point out that to some degree even institution of ownership of real tangible property faces some challenges. It's just bit over twenty years after fall of communism, where ownership of productive resources was nationalized and other ownership was strongly limited. After fall of this system it seemed that it's time to move everything to private ownership and the result is still that in many developed and democratic countries the government control half of national production.

It's necessary to look on patent in this perspective, from my opinion patent can be very useful and successful institutions increasing economic efficiency, but in current administrative system it lost big part of its potential. The application procedure takes much longer than the inventor can wait to keep the invention secret until the decision about patent validity is made so as a result the patent lost its main goal and that is to motivate inventors to disclose the invention to the degree that it can be replicated from the patent application. Also with current globalized supply chains, when single product consist from sophisticated parts made by thousand different companies it's almost impossible to judge any disputes. Companies going into disputes have many closely related patents and at the end it can look that the quantity is what matters

The issues with trademark are on the other hand rather practical. There aren't many disputes about validity of trademark in its current form. From its nature is non-rivalrous and together with industrial design they are efficient way to motivate

companies and people to make new and innovative products. The main problem are the counterfeit goods, though there are several estimates theirs precision is doubtful and based only on small samples of distress goods. From my opinion the issue isn't much different from other already illegal substances. It will be never ending fight, like with theft or drugs, but it's inevitable.

Finally copyright on other hand isn't doing that well and from my opinion it doesn't fit to our fast digital and globalized society in the current form. It unnecessarily monopolizes distribution of goods of little value for too long time and doesn't provide enough and efficient protection for goods, which are popular even after many years. In digital age data storage cost decreased to almost nothing and duplication costs are virtually free so the old model on controlling distribution because it was expensive and risky to produce copies isn't working anymore. Because spare time people have to consume intangible goods is very limited it faces two types of competition. One is that entry cost to produce and reach wide audience is lower than ever before, the second is that often people already own more goods than they can consume in their lifetime so it's increasingly more challenging to persuade them to buy new.

**In a relation to the second sub-goal- from a microeconomic point of view** is very important to take appropriate action against those who illegally use intellectual property rights. Damage to the reputation of the company or its product and loss of customer confidence caused considerable damage to companies. Elimination of already caused damage can be later be very costly or even impossible. The offer and sale of products infringing intellectual property rights unfairly competes primarily against original products, which displaces from their submarkets and the owners of the rights incurring losses. Yet, it is those markets in which the original products through investments in research, development and marketing campaigns, using knowledge of certain benefits. Therefore, the management of company, which disposes intellectual property rights, must be able to react in time to the possible threat of losing market position. From this perspective, it is necessary that management have to be aware of the problems of the protection of intellectual property rights and to have some awareness of developments and trends in this area, including the possible tools to protection of these rights. This thesis presents a

comprehensive business management review of issues of violation of intellectual property rights. Manager of company may in its decision making in competitively competitive environment to take into account developed economic analysis and statistical indicators in their favor. I think that my thesis may in this sense be beneficial not only for the owners of intellectual property, but for all subjects involved in this area.

**From a macroeconomic** perspective, I can say that the statistical data presented in this work can be fairly accurately analyze trends in violations of intellectual property rights. It is possible to identify which types of commodities are the most counterfeited and what changes are currently used. This work also showed that it is possible to recognize how supervisory authorities perform their functions 'protectors' of intellectual property rights. I managed to describe the reasons that lead consumers to purchase counterfeit goods, including the potential consequences, which brings them to this purchase. It is also possible to map the behavior of distributors and resellers of products infringing intellectual property rights, including the reasons that lead to this activity. Finally, I managed to identify damages that may arise for a state, as a result of impacts and effects on the area in question.

All of these statistics and their analysis have in terms of the impact on the national economy rather illustrative purposes only. It is possible under them to analyze the situation and trends in the field of intellectual property. Unfortunately, what can't be done, is deduce exact conclusions about the actual losses incurred owners of intellectual property rights and damages incurred to the national economy and society. With some simplification, we can say that economic analysis can be processed only on the basis of the rebuff goods, that is just the tip of the iceberg of total trade in goods infringing intellectual property rights in the context of the examined issue. From the above it is clear that sophisticated estimate, which would be able to express precise statistical data on losses arising from infringements of intellectual property actually do not exists. There are only estimates of experts, based on statistical data and evidence which may be more or less closer to reality. My personal estimate corresponds rather with those negative forecasts, which are around 8-10% loss of the total production of the world market.

**In the relation to the third sub-goal**-this work also showed that the violation of intellectual property rights occurs in virtually all economies, not only in terms of sales this product, but also in terms of its origin. It is reported that goods that violate intellectual property rights comes from nearly 150 countries, including 27 in the developed countries that are members of the OECD. From a geographic perspective, it is therefore clear that the perception of the problem in terms of "we" (western culture) and "them" (ie., certain Asian economies) is incorrect. A good example might be software piracy, where countries such as Portugal, Spain, Italy and Greece, which are smoothly region, are software piracy rate comparable to some Asian countries and even most problematic region in this area is Eastern Europe, where the piracy rate in some countries, such as. Moldova or Ukraine, achieves the world's worst indicators. In terms of other illegal activities can not be the issue of violation of intellectual property be perceived in isolation. At present, this kind of "business" also associated with organized crime. Companies consider more dangerous violent crimes than this kind of illegal activity. In doing so, these are activities that are carried out in an organized, on a very high level of logistical and are accompanied by other types of illegal activities, such as curtailment of taxes and similar charges or money laundering, and in some cases, conduct which is in western countries culture hardly acceptable, such as working in inhuman conditions for minimum wage or child labor. On the other hand, I can not forget the fact that many actors in the production, sale and marketing of so-called „branded goods“ are being produced in the countries in which these illegal activities expanded.

As I have already indicated, the intellectual property rights infringements occur in all economies and are therefore not avoid or European market, rather the opposite. It can unfortunately say that the more mature the market, the more it becomes the ultimate recipient of goods infringing intellectual property rights. The maturity of the European market is one of the main reasons for the increasing trend towards the commercialization of products in breach of intellectual property rights on our continent. From the statistics referred to in my work, it is clear that the supervisory authorities across the European Union continues to increase the amount of the checks carried out and ensure a high number of counterfeits, but even this fact does not prevent retailers and distributors in their business. Losses caused by the seizure of counterfeit goods are greatly offset by the subsequent sale of goods to be

able to put on the European market. In the future, the most serious problem in this area, consider the sale of counterfeit goods in shops and via the Internet. The only possible elimination of this phenomenon is in the form of effective enforcement of intellectual property rights protection by supervisory authorities. In terms of the future is therefore the responsibility placed on them and their tools that are available in the field of protection of intellectual property rights.



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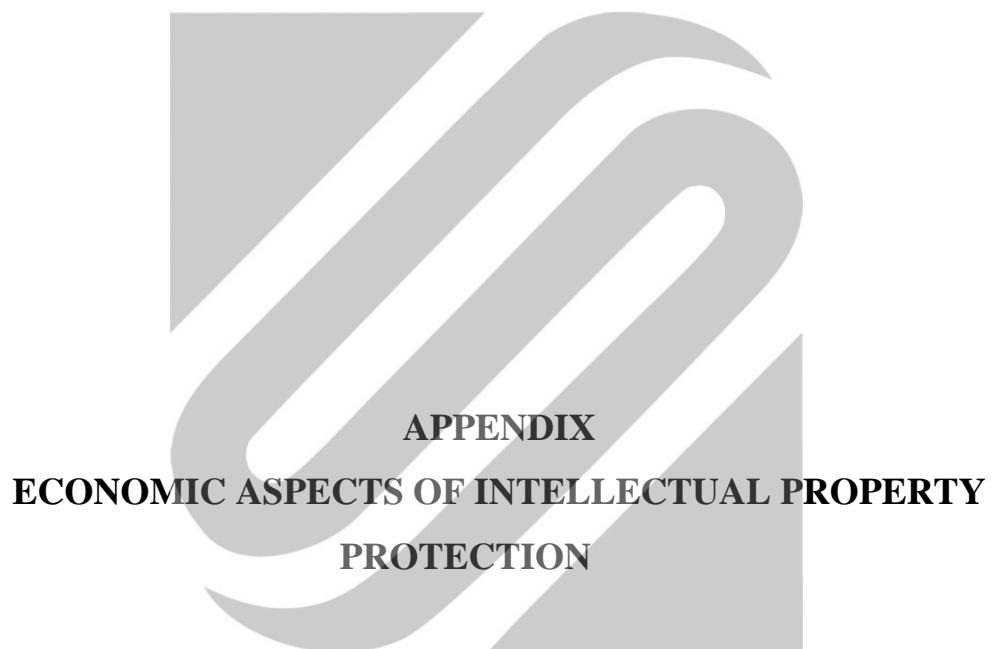
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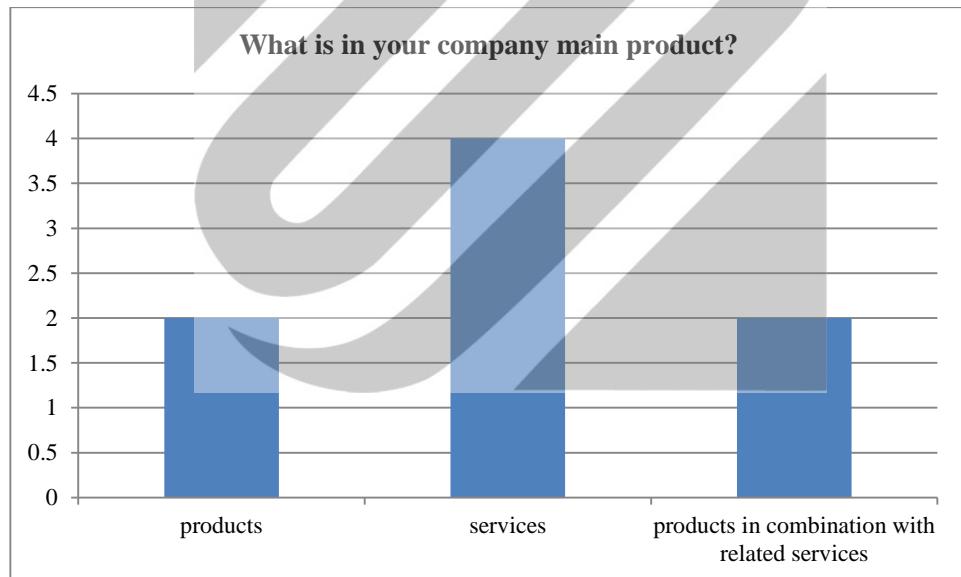
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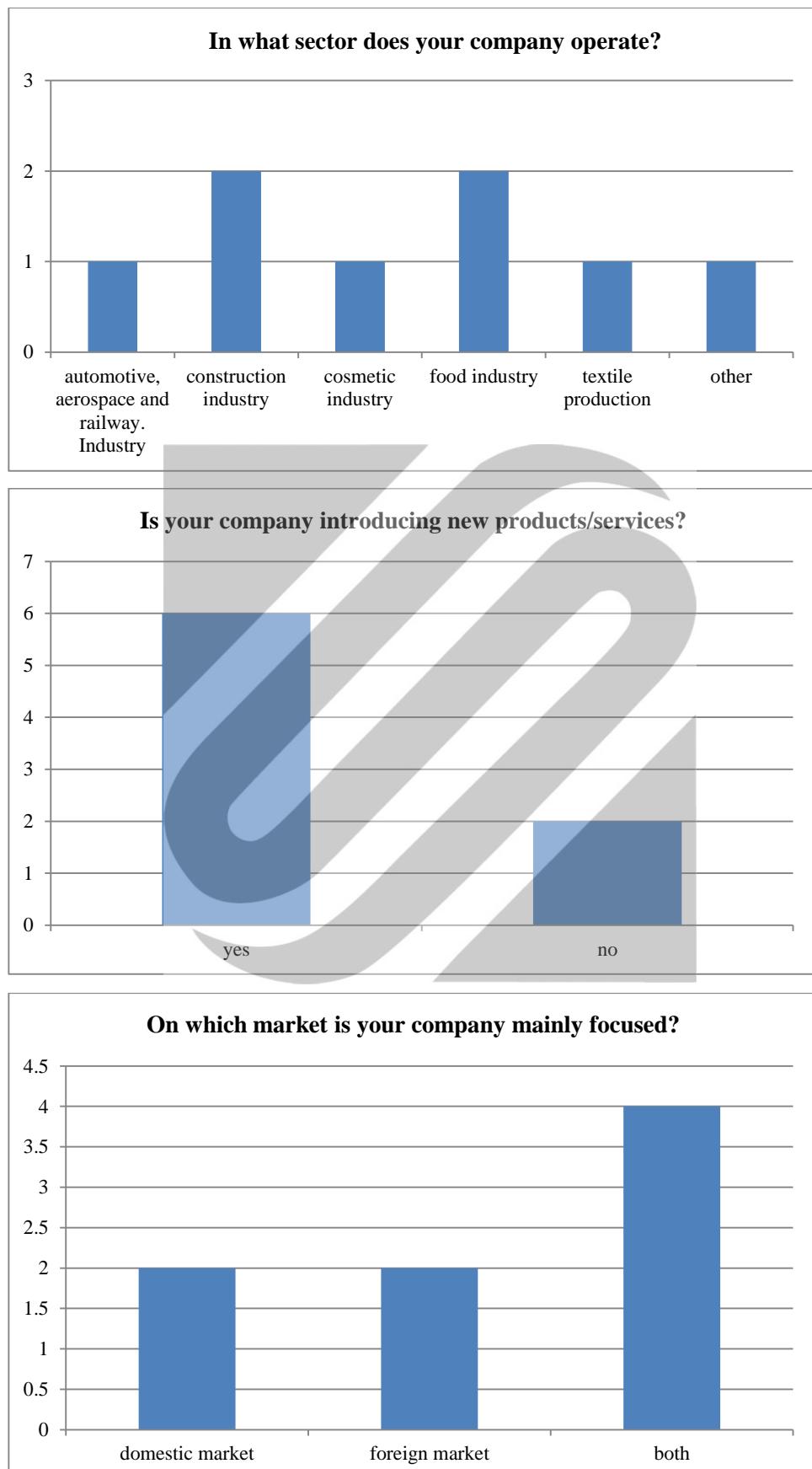
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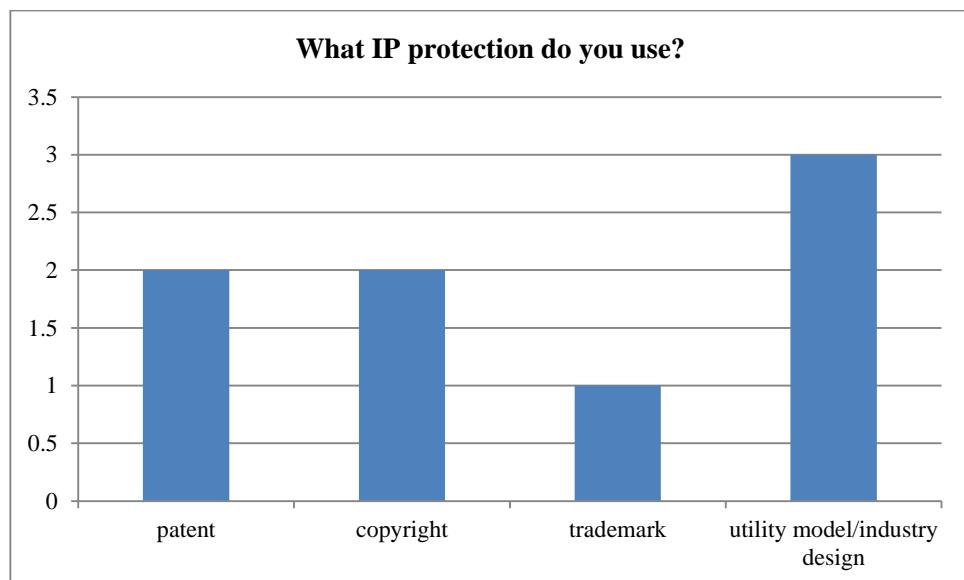
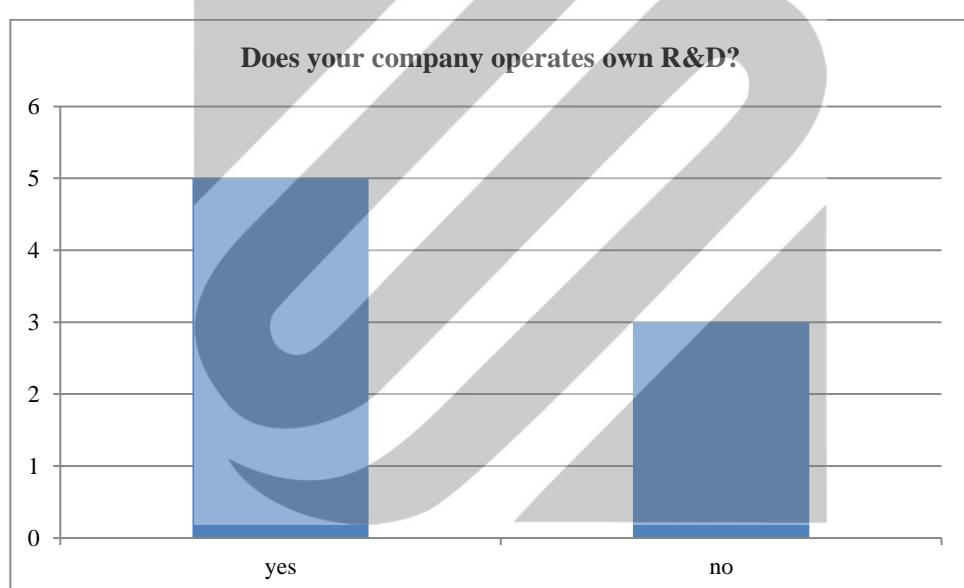
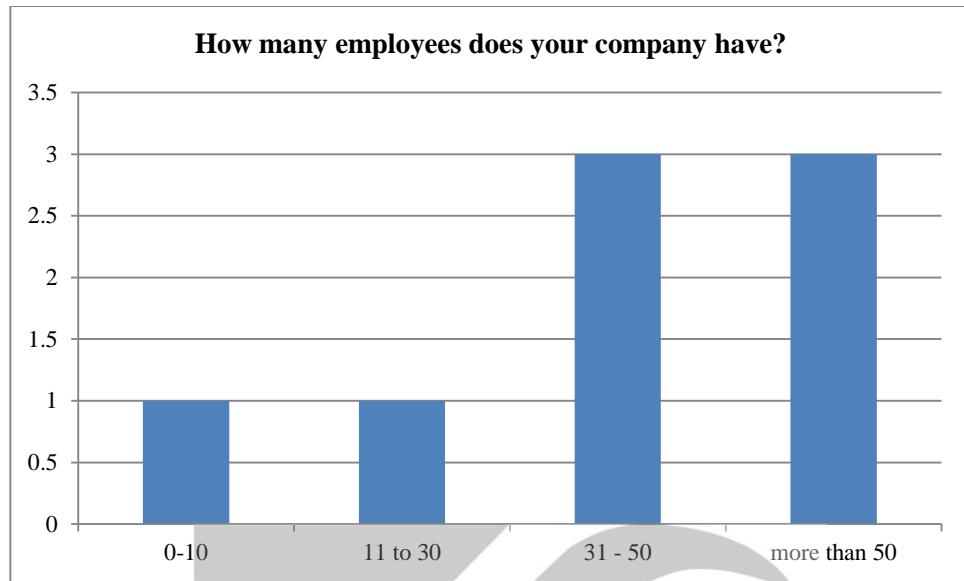


As for the results of my questionnaire, it was found that firms interviewed by me were rather focused on providing services than on product formation. It just confirms the fact that the majority of Czech companies are focusing more on services than on products, this trend decreases in recent years thanks to projects and financial aid from EU. The vast majority of companies launches new products / services, thus they have good reason for their protection, which is usually in the form of a utility model / design industry, as well as through patent and trademark. Companies are expanding their products / services to foreign markets, whereas the first phase of testing is that the product/ services must be successful domestically and in the case of interest companies begin to expand to foreign markets. Interviewed firms were rather small to medium-sized character, while 75% had their own R&D.

The results of the questionnaire ( 8 companies):







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