THE BLOCK EXEMPTION REGULATION
CONCERNING THE TRANSFER OF
TECHNOLOGY
FROM THE VIEWPOINT OF SMALL AND
MEDIUM SIZE ENTERPRISES
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1. INTRODUCTION

1.1. The Identification of Research Problem

Since companies are globally depending on innovative actions, it has become increasingly important to know the crucial legal elements and their functions in Research and Development (R&D) projects. R&D projects can contain different elements depending on the organization in concern. R&D projects start usually with a strong investment in the development of the innovation, which usually means an investment to the technology concerned. During the investment period there has to be an evaluation of what kind of Intellectual Property Rights (later IPRs) are needed for a protection and how the protection is going to be done. When the invention has been developed to a product, starts a phase called commercialization.

The meaning of the commercialization period is to find the relevant product markets for a certain product. The relevant IPRs are chosen concerning the possible product markets for a certain product. The company, which makes the evaluation, has to have the knowledge of the prospects of its own product, but also of the products of its competitors. The hypothesis I will present in this research supposes that those companies are the winners, which make short run profits. This means that a company running an R&D project has to be quick in this process and very determined in its plan in the chosen areas.

The preconditions for the development phase for new products are much depending on the fact whether the company is working globally or is it a Small & Medium-size Company (later SME). Global companies have the resources for investments and the networks for finding partners. SMEs have to struggle for finding money and relevant partners, as they cannot afford of losing their efforts in an unprofitable R&D project. However, nowadays companies are supported by the state funding helping the commercialization process and giving the investment needed, generally as a loan. This sort of help is often directed to the SMEs not having experience of a commercialization process. It is considered economically more efficient to support R&D processes than to lose companies, which have growing abilities in their innovativeness. The commercialization of a product is a demanding phase,
as there has to be an evaluation of the potential markets and then a plan how to acquire the markets. The maintaining of market share is the goal of the marketing process. In this research the general context is the R&D process of a company and how the company works with the IPRs in competition. The recent changes in Block Exemption Regulation (BER) concerning the Transfer of Technology are the focus of the research. The principal research question can be formulated as follows:

What are the preconditions for a competition according the new Block Exemption Regulation concerning the transfer of technology?

This research question can be divided into the following sub-questions:

1. How small and medium size companies fulfill the criteria of permitted competition after the changes in Block Exemption Regulation concerning the Transfer of Technology?

2. How small and medium size companies fulfill the criteria of Block Exemption according the new regulation?

The first sub-question lays the legal ground of the thesis. It is how Block Exemption Regulation regulates markets. The purpose is to study how small and medium size companies try to achieve market shares. The legal environment is closely linked to the economical environments and these are scrutinized in order to understand the competition. The emphasis of the thesis is how the regulation effects the competition environments of SMEs in Finland. They act in the context of the European Union (EU), as the law of the European Union is national law. However, laws in the area of Intellectual Property rights are not harmonized in the European Union, even though they are protected by many international contracts.

The second sub-question focuses on the regulation concerning market shares in the new Block Exemption Regulation. The regulation concerning market shares has changed and it is interesting how it will effect to competition environments, especially for SMEs in countries like Finland. SMEs expanding should take into account the new regulation, which might not be well known and the preconditions of them.
1.2. The Demarcations of the Research

The basis of this research is in the balance between IPRs and Competition Law. These areas of law have common goals. IPRs give rights for protection of inventions. Competition law ensures static and dynamic competition. Basically IPRs don’t ensure market shares and so they cannot be compared to ownership. However, it is possible to make use of IPRs in same ways as owner’s rights like selling, hiring, licensing etc. IPRs give large protection area for the applicant. As comparison to owner’s rights, it is not so easy to define the IPRs exact limits. It is not possible to prevent others from using information, which has been made public.

Competition law applies to IP-contracts as well as to other contracts including owner’s rights. The special features concerning IPRs have to be taken into account. The European Union Commission has given guidelines for application of IPRs and there are several guiding cases in this area.

1.3. Historical Basis of Competition Law

As short review of the historical basis of competition law is described as follows: Six Western European countries Germany, France, Italy and Benelux-countries signed in 1957 the Treaty of the European community (EC Treaty or Treaty of Rome), which is the bases of European Union. The European Union is based on the economic and social pillar of EU law, under which is competition law. Competition should be healthy and it is seen as an essential element in the creation of a common market. That should be free from restraints on trade.

However, the first modern competition laws were developed in the U.S. The context of market shares differs in the U.S. legal culture from the European context. The U.S. law is based on the Sherman Act and the Clayton Act. Sherman Act was passed in 1890 and it was named by its author Senator John Sherman. Before Sherman Act there were Acts, which denied intrastate monopolies. The passing of Sherman Act was an opposition to the
concentration of economic power in large corporations. The Act was based on the Constitutional power of the Congress to regulate interstate business.

The federal government was authorized to institute proceedings against trusts in order to dissolve them, but Supreme Court rulings denied federal authorities from using Sherman Act for some years. President Roosevelt started “trust-busting” campaigns and Sherman Act was invoked in 1904, when the Supreme Court held the suit for dissolution of the Northern Securities Company. President Taft followed this line in 1911 against the Standard Oil trust and the American Tobacco Company.

Clayton Antitrust Act was passed in 1914 and the Federal Trade Commission was set up. The Act prohibited exclusive sales contracts, local price cutting to freeze out competitors, rebates etc. Labour unions were excluded to restrict forbidden combinations. Under president Roosevelt´s control supporting acts to the Sherman Act were passed. The line of the Sherman Act was strengthened in 1982, when the monopoly of the American Telephone and Telegraph (AT&T) was broken up.¹

The Hart-Scoss-Rodino Antitrust Improvement Act from 1976 was a try to make it possible to investigate mergers. However, few mergers were blocked in the boom of mergers in the 1980s. The Antitrust law was applied loosely in those times. In 1990s the Federal Trade Commission became more litigious. An example of that is the case Microsoft Corporation.²

Competition regulation in the EU from 1957 is basically the same. In Finland competition law is a relatively new area of law and the EU competition regulation has been applied since Finland joined EU in 1995. The implementation of EU competition regulation was renewed totally in 2004.

The basis of the regulation has been the Article 101 of the Treaty on the Functioning of the European Union to categories of technology transfer agreements:

² Ibid.
Article 101

1. The following shall be prohibited as incompatible with the internal market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market, and in particular those which:

(a) directly or indirectly fix purchase or selling prices or any other trading conditions;
(b) limit or control production, markets, technical development, or investment;
(c) share markets or sources of supply;
(d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
(e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

2. Any agreements or decisions prohibited pursuant to this Article shall be automatically void.

3. The provisions of paragraph 1 may, however, be declared inapplicable in the case of:

- any agreement or category of agreements between undertakings,
- any decision or category of decisions by associations of undertakings,
- any concerted practice or category of concerted practices,

which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not:

(a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives;
(b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.

In practice the breach of competition regulation means that a licensing agreement or a term of it is considered void. Administrative consequences may be max 10 % of the company’s turnover. For instance in case Lundbeck the reverse payment agreement meant administrative consequences of 93 million euros (19.6.2013). It is also possible to demand compensation.

There was a precondition for companies to make an announcement to the EU commission of the agreements including restrictions of competition until year 2004. Block Exemption regulation was set up to control the large amount of announcements. Block Exemption
Regulation was set up for Patent Licensing (2349/84), for Knowledge Licensing (556/89) and for Transfer of Technology (250/96).

In year 2004 the announcement procedure was compensated with the self-evaluation of companies. It was set up the Guidelines of Transfer of Technology (2004) and Block Exemption Regulation (2004). The guidelines bind only the European Commission. The statute was to be directly implemented in the member countries.

In the new rules of competition Commission has given the following guidelines:

The European Commission has adopted new rules for the assessment of technology transfer agreements under EU antitrust rules. The purpose of such agreements is to enable companies to license the use of patents, know-how or software held by another company for the production of goods and services. The revised rules facilitate such sharing of intellectual property, including through patent pools, and provide clearer guidance on licensing agreements that stimulate competition. At the same time they aim to strengthen incentives for research and innovation. See also MEMO/14/208.

Licensing helps to spread innovation and allows companies to offer new products and services. It also strengthens incentives for research and development by creating additional revenue streams to recoup costs. Licensing therefore plays an important part in economic growth and consumer welfare. However, it can also be used to harm competition, for instance if two competitors in a licensing agreement divide markets between them instead of competing with each other. Another example would be a licensing agreement that excludes the use of competing technologies in the market. These and other anticompetitive agreements are prohibited by Article 101 of the Treaty on the Functioning of the European Union (TFEU).

The regime adopted today provides better guidance to firms on how to license in ways that stimulate innovation and preserve a level playing field in the Single Market. It consists of the Technology Transfer Block Exemption Regulation (TTBER), which exempts certain licensing agreements from antitrust rules, and the Technology Transfer Guidelines, which provide further guidance on the application of the rules.

The main features of the new rules are the following:

- The revised regime continues to reflect that licensing is in most cases pro-competitive. The Commission has made incremental improvements to the current regime, which overall received positive feedback from stakeholders in the two public consultations.
- New guidance on "patent pools": Patent pools can give companies cheaper and easier access to necessary intellectual property rights, such as standard essential patents, by establishing a one-stop-shop. Recognising the often pro-competitive nature of patent pools, the creation of and licensing from patent pools now benefits from a safe harbour in the Guidelines.
- A more prudent approach on clauses that could harm competition and innovation: Certain types of clauses are no longer automatically exempted from antitrust rules but have to be assessed case-by-case. These are clauses which allow the licensor to terminate a non-exclusive agreement if the licensee challenges the validity of the intellectual property rights, and clauses that force a licensee to license any improvements it makes to the licensed technology to the licensor on an exclusive basis.
- The Guidelines also give guidance on settlement agreements in light of the Commission's recent experience.

European Union regulations have to be directly applied. The announcements of the Commission are recommendations and not binding for the national courts. However, it is possible to get information about Commission’s opinions from them. They protect those
forms of competition, which are good for the society in general. Competition will be interfered if competition declines under “critical points” and the pressure for innovation decreases. Companies gain wins with incomparable performances.³

The competition regulation of European Union has to be taken into account also when applying national legislation. This is especially important, when national actions have effects to international trade. This is why European Union regulation easily has to be applied in patent licensing. Patent licensing often influences to a certain market. In EU regulation the effect can be also potential. This means that when applying national law also EU regulation has to be taken into account. European Union regulation should be applied and the decisions of the Commission should be applied consistently also concerning patent licensing agreements.⁴

The new statute came into force 1st May 2014 and it will be implemented until 30th April 2026. There was a period for transition, which ended in 30th April 2015. The Block Exemption Regulation is applied to licensing agreements. It deals with technology licensing agreements, which enable the production concerning the products in the agreement. There are restrictions concerning market shares and there is so called Black List and Grey List of possibly denied terms in the licensing agreements.

The regime consists of two instruments. First, the Technology Transfer Block Exemption Regulation (TTBER) creates a safe harbour for licensing agreements concluded between companies that have limited market power and that respect certain conditions set out in the TTBER. Such agreements are deemed to have no anticompetitive effect or, if they do, the positive effects outweigh the negative ones. Second, the Technology Transfer Guidelines provide guidance on the application of the TTBER as well as on the application of EU competition law to technology transfer agreements that fall outside the safe harbour of the TTBER.

In this research IPRs are treated in the context of competition law. The focus is on patented rights, since innovations used in R&D processes are mostly patented. IPRs have been considered fundamental rights, which cannot be intervened in the interests of competition

³ Oesch, Pihlajamaa & Sunila 2014, 197.
⁴ Kuoppamäki 2012, 47-49.
or antitrust law. However, there have been several situations, in which it has been possible to create a dominant position due to the power of IPRs in the market, in which free competition has been distorted. Competition law and IPRs are researched only for the purpose to get knowledge, which environments possibly promote transfer of technology. Even though legal norms could be considered mostly resistive, their applications in different competition situations may promote or resist competition.

TTBER regulation gives new rules for allowed market shares in markets. The joint market share of competitors can be 20% of relevant technology and product markets. Non-competitors, neither of them can have 30% of relevant technology and product markets. Competitors in technology markets are considered those who license out technologies, which compensate each other. Competitors in product markets are considered those companies functioning in same product and geographic markets without a licensing agreement.

National authorities have more responsibility concerning the application of EU competition regulation. For instance in Finland Competition Authority gives decisions concerning the permitted company arrangements in competition law. The self-evaluation of licensing agreements is important. The main preconditions for permitted competition are as follows:

Firstly it has to be evaluated the market shares of the company and whether a dominant position will be achieved. Secondly it is essential whether the agreement is horizontal or vertical and whether the agreement has a restriction, which essentially is harmful for a competition.

When an agreement is considered to be restrictive for competition, the counter-partner can argue that on the contrary it is promoting competition. The preconditions for that are as follows:

1) agreements, which promote economic effectivity or the development of technology
2) a reasonable part of the benefits come to the consumers
3) the arrangement does not include extra restrictions
4) the arrangement does not prevent competition in the relevant markets
The new regulation of TTBER will include some changes. The limit of market share 20 % applies also, when the licensee has the compensating technology. For the licensor the technology market is regarded from what is the leftover of the technology after the licensing procedure.

There are two kinds of lists of permitted restrictions in Transfer of Technology agreements: the Black List and the Grey List. The regulation in the Black List will remain mainly as it is. In the Grey List the new regulation concerns non-challenge terms, which are considered always to be outside of the implementation of the act. Until now it has been possible to dismiss the agreement, if the other party sues for the IPRs. There are also some other changes for the Grey List.

The research has a comparative legal perspective. Competition law is reflected in the perspective of Antitrust law. This comparison is done in reflecting the research problems 1. and 2. which means how these different regulations treat different market situations. There are cultural and historical differences influencing the applications of legal norms. The most advanced competition law is the Antitrust law. That is why a few U.S. Supreme Court Decisions and Federal Court decisions have been scrutinized. There is a lot of practice concerning the restrictions of competition. European Union has developed its Competition law afterwards.

The norms of TTBER are researched from the point of an R&D process in companies. The norms of competition law and IPRs are applied in Chapter 4, in which the value of innovations are researched. The hypothesis could be that the regulations have strong influence to the way how companies form their strategies. However, the economic interests of companies may be different from the legislation. The legal systems get their meaning in those practices besides the fact that they are regulating factual market situations. The possible applications of TTBER regulation are described.

The norms of TTBER are extremely complex. According to the regulation from 1.5.2004, which will be in force 10 years until 30.4.2014 there are three types of licensing terms: permitted terms (everything, what is not forbidden, is allowed), absolutely denied terms (serious restrictions of competition) and allowed terms depending on the situation. The possibility for an individual exemption is abolished. There is a theoretical possibility that
the Commission would make a decision that the Article 101 will not be applied to the agreement, as the preconditions of part 1 are not fulfilled or the preconditions of part 3 will be applied.

There is no obligation of announcement of certain licensing agreements any more. The proof of burden has that party, which insists on the breach of the rules of competition, which generally means an authority. Other party can have difficulties of getting material for proof. During the procedure the roles can change and the parties may have the obligation to prove that the actions they have done are legal. The Block Exemption Regulation is very complex, as there are different rules, main rules, exceptions and exceptions of exceptions. The Black and Grey lists are long and the terms are not easily interpreted.

1.4. The Aim of the Research

The aim of this research is to find out how new regulations function and how they will effect to SMEs. This is scrutinized by the regulation of TTBER. Market share is the element with which companies acquire new markets and ensure their existence. This research tries also to discover different preconditions of market shares and how they are controlled.

An important approach to the subject is to compare different types of companies facing the challenges of competing. It could be anticipated that large companies have resources to be aware of the changes of legislation and they are ready to make the necessary changes in applying the demands of company law to the practice. For example, they can afford making market analysis and be more accurate in their efforts of achieving the relevant markets for their inventions. According to the results of the market analysis they can plan a reasonable IPR portfolio, which is taken well care for. The unnecessary IPRs are sold further and the relevant IPRs are searched for in order to protect the achievement and maintaining of markets.

SMEs do not necessarily have the legal experts, which organize the resources and make plans and evaluations concerning market achievement and the protection of innovations. They make more *ad hoc* decisions concerning market achievement and run easier out of
resources. In Finland they depend on being able to participate in cooperation with large companies.

State organizations like Tekes and Foundation for Finnish Inventions as evaluators of innovations in Finland may also set preconditions to their participation in R&D projects. The necessary economical resources may have terms, which have to be fulfilled accurately. It could be a hypothesis that no TTBERs are considered in the project funding of the state organizations. The practice how the competition market will function will be left on the responsibility of the companies. Especially for the growing start-up companies this might be challenging. There should be organized legal aid for growing SMEs for them to learn the essential legal elements in controlling competition according to TTBER regulation.

The aim of this research is also to get more knowledge of the effects of the new TTBER rules. They are specific rules and by them it is possible to have profound control over the markets. Especially in countries like Finland, in which the markets are small and rigid.

Controlling markets and the aim to achieve a relevant market share is the crucial element and that is why the preconditions of market share and their control are scrutinized. An R&D project in a company aims to commercialize profitable innovations. The aim is to look what part of the process is the TTBER regulation. The picture below describes how competition law including TTBER regulation and intellectual property rights set the framework for competition environments of R&D projects. Licensing agreements are a special focus here and how SME companies have to take TTBER regulation into consideration.

In the Figure 1. below normative level is described in the yellow box. It means both legal norms and legal theory.
1.5. Methodology

This research concerns what is the role of TTBER in R&D processes and whether it promotes innovative actions. Typical research questions in legal research are as follows:

How legal rules apply to situation $Y$? – Or, How a rule $X$ is to be interpreted in a situation $Y$?\footnote{Aarnio 1982, 61-63, divides legal research in norm and problem-oriented research.} The title of this research is “Block exemption regulation concerning the transfer of technology and small and medium size enterprises”, which includes the idea that law is not just independent, but is also connected with economy and technology concerning innovations. In this research legal means are the rules $X$, which are interpreted in a competition situation, denoted as $Y$. In this research the application of TTBER is described by reflecting R&D processes against legal doctrines, case law, and economics.

Some grounds for this approach are given as follows. The basic approach is in legal doctrines. However, legal norms regulate the actions of people. There is no abstract independent phenomenon as a market force. From the legal point of view the regulation focuses to people or to smaller or larger organizations. Legal thinking uses legal norms as a tool to clarify the reality.
In economics the grounds for scrutinizing human behavior are different and different meanings can be given to same terms as used in legal theories. Legal research relies on law and on the inferences of law. In Europe legal doctrines are based on written law except the Common Law tradition, which is based on case-law. Traditionally these approaches have been pretty different. However, the recent development has been so, that in the Continental practice the importance of cases is increasing and in the Common law practice there are efforts to write law. We could say that the approaches are getting closer to each other\(^6\). Conclusions can be only based on legal doctrines or on the underlying rationality of a rule and its applicability into certain circumstances.

The method in this research used is legal interpretation within the context of Scandinavian realism\(^7\), however realizing the changes in it, which are presented later in this Chapter. Helin has described the development from legal categorizations in 1920s and 1930s to the acceptance of justifications based on rationality, which are called realistic arguments. The case law is mainly from the European Court of Justice (ECJ), the European Court of First Instance and Decisions of the Commission. Economic effects are studied only to the extent that is needed to understand the outcome.

Economic perspective, which is used in this research, is based on the theories of Kuoppamäki. Economic theory can be applied in a way, which makes it possible to find solutions to a practical decision situation or creates objective material for a competition policy.\(^8\)

As this study is based on the legal reasoning, there are several points, which have to be acknowledged to understand the changes happening in this area. This is because of the developments from regulation of the market to regulation through the market, of the information society and society of knowledge and the globalization of economy, culture, workforce, and law.

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\(^6\) Toiviainen 2002, 205-207.

\(^7\) Helin 1988, 396-422, identifies the development in Scandinavia.

\(^8\) Kuoppamäki 2008, 1078.
The liberalisation of the economy has changed the interpretation and application of law. Market access is usually confirmed with a general set of rules. These rules usually do not include powers for the administration to decide individual cases. Market access is a question of legal interpretation, not political discretion. Liberalisation means also de-monopolisation of monopolised sectors. These are externalized and new “market-creating” regulations and authorities are created. The relations between providers, consumers, and regulatory agencies are legalised.

The legal protection of knowledge and information has increased in the last years. An example of this is that employees are given rights to innovations they contribute and they are given a part of the economic value through the exploitation of the innovations. Intellectual property law has influenced the way in which production of knowledge is organized in the society.

Legal positivism was effective in a regulated economy. Now that the emphasis is on competition, effective allocation of resources is needed. There is an increasing amount of legislation on international level, and the application and enforcement of law have also internationalised. International harmonization sets new challenges to a legal method, which has traditionally been nationally oriented.

Legitimacy is also affected by these changes. National courts have less power in transnational issues. Legislation on transnational level shifts power of legislation to executive branches of governments. A legitimization happens more by acceptability. More positive norms are enacted on international level, but the acceptance happens by non-positive legitimacy.

The main effects to the legal reasoning and methodology are as follows: The new texts include their own issues of interpretation. Different languages are used and different versions are published. In different legal cultures different concepts are used and there rises questions of understanding how they are used in different contexts. There is a plurality of institutions and their way of reasoning and legal authority is different.

A paradoxical change to this is the de-positivation of law. As there are different texts and languages used, it is not possible to rely on the text as such any more. There is a trend to
present generalised principles. They are used as a substitute of law and an integration of law is tried to achieve through them.

1.5. The Structure of the Research

In this first Chapter the basic research questions and the aim of this research is explained, the demarcations of the thesis, the methodology of the thesis, and the structure of it are presented.

In the second Chapter the background of the study is described. The large research area of the thesis is the innovation process, which is described by the picture of Breeze & Kaiser (2004). The meaning of the use of that picture is to point the phases of an innovation process, in which SMEs make decisions for competition. The most important phase is the latter part of the R&D development phase, in which IPRs are used. The risks are related to the costs they cause and the possibilities to commercialise the product. However, intellectual property rights are treated as norms, which are present in the innovation process. Norms of competition law relate to the marketing phase and are crucial for it. There are also general laws like tax laws, which relate to an innovation process closely. Besides the legal norms there are also other business instructions essential for the process created by the company in concern or the field of industry. Companies create instructions for innovators how to behave, when an innovation has been made and what is the practical process, which have to be followed in the company.

The legal background of the thesis is competition law TTBER regulation and IPRs. The legal doctrines concerning perfect competition and monopoly related to these are introduced in Chapter 2. The role of intellectual property rights is introduced. The tension between competition law and intellectual rights in the light of the new TTBER regulation is profoundly scrutinized in Chapter 3.

In Chapter 4 the different views how to understand an R&D process, risk management and a value chain are presented. It is presented how IPRs help to run innovation and technology

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9 Graver 2005, 54, 55.
strategies, and to develop the product for commercialisation. Competition law regulation concerning R&D forms the environment, in which companies develop products. The knowledge, how to make competitive advantage with IPRs in markets is decisive for the R&D process to succeed. This all is reflected against TTBER regulation. It means that companies have to take into consideration the regulation. How it affects to the behavior of the agreement negotiations is a core issue here.

The theory, how competitive advantage is made by R&D processes is led further in Chapter 4, in which intangible assets are evaluated. This is presented as a relation of the technical, commercial, and legal risks as well as the cash flow and time. In that way it is possible to present a formula of the value of IPR in relation to expected sales and sales prices. All this is presented in connection to competition law and the new regulation concerning transfer of technology.

Chapter 5 consists of conclusions, in which the research questions are answered. The hypothesis could be that the competition environments, in which SMEs work have become ever complicated with the tension between competition law and IPRs as well as the increased amount of international regulation like TTBERs causing problems of legal interpretation. It effects to the commercialization process in practice. The regulations are unclear for SMEs having restricted resources for legal aid and this causes dissatisfaction, which further does not motivate them. In long run this can be causing losses in productivity.

However, nowadays companies are willing to aim market shares by a strategic management, which means creating competition and innovation strategies. This can be a risk management, in which a company tries to minimize risks and keep the IPR portfolio as minimal as possible. Value-oriented management means that a company tries to find the extra-value the innovation brings and tries to make investments according to that. This means more precise planning in making investments to intellectual property rights and to the technology used. The idea is to avoid under- or overestimating them and to be as precise as possible in targeting to the market advantage for the innovation in concern.
2. APPROACHING COMPETITION ENVIRONMENTS

The thesis is connected to the connection and conflict of competition law and intellectual property rights. They both have a connexion to EU law, see Figure 2. In this thesis EU law is researched only, when it has relevance for these legal areas. In this Chapter the structure of an R&D project is explained and the relevance of market power in that context.

![Figure 2](image)

2.1. An R&D project as a Framework for Developing Innovations

This thesis research with the following main concepts, which are essential in competition law and for IPRs. Short preliminary definitions as they are used in this work are given as follows:

*Innovation* is something new or different introduced or an act of innovating, which means the introduction of new things or methods.  

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10 Webster Dictionary
**IPR** means an intangible property that includes patents, trademarks, copyrights and registered and unregistered design rights.  

**Market power** is the ability of a company or a group of companies to hold price above marginal cost persistently. This leads to a misallocation of resources. By antitrust policy market power may be removed and this may improve resource allocation. Allocative efficiency means the allocation of a given set of scarce resources.  

**Competitive advantage** is a condition, which enables a company to compete successfully in a given market and which brings benefits.

**Innovation process** is a framework, which consists of the practices of an organization, or a model, which describes innovation-related activities. Typically it has separate phases such as, foresight, concept development, new product development and market entry.

**R&D, research and development** includes either technological research to support new product development or market research to support the development of new products and services.

**Venture capital** is funds, which makes it possible to start up small businesses with exceptional growth potential by private or institutional investors.

In order to understand innovations and the process how they are developed further we have to understand the nature of R&D processes. In past most R&D laboratories were in large manufacturing companies. Those laboratories operated separately from universities and government agencies. Centralized R&D functioned well managing innovations in industries, in which “the protection of intellectual property is very tight, or regulatory restrictions are very high, or both, start-ups seldom arise and venture capital makes little investment”. Still in certain areas like nuclear power, power plant supplies and utility companies have to have large R&D departments, so that they can easily achieve those resources. The same situation is in a defense area and in the life sciences.

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11 Dictionary of Law  
12 Utton 1995, 278  
13 Chesbrough 2003, 34
Nowadays it is possible to recruit new skilled workers from the job market. They have been trained by their competitors or by universities and there is no need to pay compensation for that. There is also the availability of external service suppliers, which makes it possible to outsource selected parts of R&D. Nowadays there is also external funding available and so called venture capital entrepreneurship makes it possible to start up new businesses, which was not earlier possible.\textsuperscript{14}

Chesbrough and Crowther have processed two new concepts: an inbound and an outbound open innovation, the first refers to new discoveries both inside and outside own organization and the latter refers to a commercialisation, which happens using internal and external channels. They can be described as follows:

\textit{The New Role of Internal R&D}

<table>
<thead>
<tr>
<th>Knowledge and IPR from internal sources</th>
<th>Search, combination and processing of knowledge by internal R&amp;D</th>
<th>Commercialisation through internal paths</th>
</tr>
</thead>
<tbody>
<tr>
<td>INBOUND TECHNOLOGY PRACTICES</td>
<td>-”-</td>
<td>OUTBOUND TECHNOLOGY PARTS</td>
</tr>
</tbody>
</table>

14 Kettunen et al. 2007, 126-127
15 Chesbrough & Crowther 2006
This shows that it has become increasingly important to use the internal knowledge and paths. The use of internal knowledge means connecting the different knowledge resources of a same company or just detecting its unused knowledge. Only when it is valuable enough to use the outbound sources and paths they are used with or without internal sources.

An R&D process is presented in the following picture as a relation between time and cash flow. This is the general picture of an R&D process, which is researched with different emphasis later. It can be described by Figure 4. as follows:

![Diagram showing R&D phases and cash flow](image)

Figure 4. ¹⁶

This Figure shows what kind of risks an R&D project includes. In the beginning of a project the technical risks are greatest, as the testing and the development of the innovation begins. Legal risks come to the picture, when the decisions concerning the IPRs are done. During this phase commercial risks emerge, as the potential markets have to be considered at the same time. Legal risks are restricted to a limited period of time depending on how long time the innovation is to be protected. This risk depends also on the form of the protection and the regional width of the protection. Commercial risks increase, as the commercial efforts for the product are taken. The goal of the commercial investments is to make the risks lower, when the efforts lead to a success.

One simple example of a legal risk has been a prohibition. Earlier it was used for making and selling of alcoholic beverages. Environmental regulations have caused a lot of penalties.

and prohibition for companies using certain chemicals in packaging. Patents contain another typical type of a legal risk. US patents are secret until they are issued, which can easily cause that new patents would prevent some already prevailing licensed technology.17

However, instead of emphasizing the risks, the different forms of the innovation and product-development can be described as value creating services. A service can be a product or a part of a product. For instance a part of Metso’s annual revenue comes from the machine maintenance and modernization contracts. Nokia has provided funding for its network customers. This has been a means for Nokia to secure network contracts in a situation, in which European telecom operators had financial problems because of the German UMTS license auctions.

Value creation models can be described by Figure 5. as follows:

<table>
<thead>
<tr>
<th>Type of service</th>
<th>Value chain</th>
<th>Value shop</th>
<th>Value network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional services</td>
<td>- repairs</td>
<td>- engineering</td>
<td>- trading services</td>
</tr>
<tr>
<td></td>
<td>- logistics</td>
<td>- legal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- training</td>
<td>- finance</td>
<td></td>
</tr>
<tr>
<td>Automated, technology enabled services</td>
<td>- most Internet services</td>
<td>- none?</td>
<td>- telecom services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- credit card services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- electronic trading of securities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- remote diagnostics of industrial machinery</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.

Legal services are described in the value shop of professional services. Legal services may bring competitive advantage for instance by intellectual property rights. A company

17 Razgaitis 2003, 32-33.
offering its service to the markets has to decide what kind of legal services are offered. There has to be made choices between licensing or reselling or a product itself or a product bundled with other products. All these choices effect to the competitive situation of the product and include important decisions of a business strategy.

As this is a legal thesis, the aim of the research is to find how legal regulations effect to the R&D process. The most important legal factors of the R&D process are the competition law in commercial risks and the IPRs in legal risks. They can be described by Figure 6. as follows:

![Figure 6.](image)

The legal rules concerning innovations are researched in the context of competition laws, which are enacted in different societies with various market dynamics. There is a continuous interaction between a competition law and the commercial environment for which it is enacted. Legal risks can mean risks of taxation or immaterial rights etc. This research tries to find what kind of role legal norms have in the whole process.

This type of a model describing R&D process has been criticized, as it does not take into account feedback or overlap between and among stages. It would suit only to scale-intensive industries. This model does not describe many small, but cumulatively important incremental innovations that are important for instance in computer industries. The serial model enables to view innovations as a vertical process. However, it is not an adequate model except for special circumstances.

The simultaneous model of an innovation is used, when feedback mechanisms must operate quickly. The process is not serial and it does not begin with research. It describes innovative
activity that involves what went before, whether it is inside the organization or outside it, and whether the knowledge is in the public domain or proprietary. The design cycle is speedy and flexible. IBM used this model, when developing its first PC. It formed alliances with Microsoft and others. If an innovation has this character, the pioneer to publish the innovation in the public domain can be a company, which has had very little to do with the technology. It just succeeds to be the quickest to do the product design. Many innovations require lateral, horizontal and vertical linkages today. Especially SMEs have need of capabilities, which are outside of their organization. They need to do restrictive contracts with providers of inputs and complementary assets. This increases the possibility that antitrust laws are invoked. Monopoly theories look different in a static economy than in a dynamic one. Some behavior, which can be anticompetitive in a static context, may be pro-competitive in a dynamic context. Giant companies, which are integrated organizations, are not at risk. Mid-size companies have to make innovations to develop market power and they are at highest risk. This endangers the will to invest in innovations.  

However, innovations are crucial for the development of markets and competition in them. Social welfare appreciated in Western societies can be considered as the product of competition.

2.2. Different Legal Approaches for Competition

Laws are value-based and especially competition law is, as it is closely attached to economics. The aim of competition law is to prohibit a situation, which can cause that

1. the prizes of consumer products get higher and the production is restricted against the benefit of a consumer
2. the entrance of other entrepreneurs to the market is prevented or restricted and
3. the principle of interpretation is the increasing of efficiency and the freedom of trade

\[18 \text{ Jorde & Teece 1992, 48-50.}\]
The basic goal of competition law can be said to prevent the exaggeration of market power. The competition law protects competition as a process and as an institution.\textsuperscript{19}

The main areas, in which competition laws have been applied for a long time, are the US and the European Union besides the developed Asian countries. The US law was passed and the EC Treaty provisions were adopted both in a particular socio-political-economic context. The US antitrust law tried to abolish the elements of communism or fascism or other elements threatening personal autonomy. In Europe in 1957 the driving force of the Treaty of Rome was to gain peace with market integrations among hostile post-war countries.

Competition laws may be more or less aggressive depending on the goals, which they have (e.g. consumer welfare or efficiency). They may allow more or less intervention, which affects to the legal climate of a society. The degree of trust, which antitrust intervention causes better than an imperfect market is an important variable. European competition law is more aggressive than its US counterpart. The European Commission has taken opportunities to open closed market and applied EC principles by imposing affirmative duties on companies behaving abusively.

European competition law is more attached to preserve the competitive structure of the market. There has been a tendency to reform the formalistic approach to a realistic economic approach. However, the reforms have not yet reached the European Court of Justice.\textsuperscript{20}

Market power is defined as the power to increase price significantly over competitive price and to hold it at a high level for a significant period of time. DG Competition’s Article 82 Discussion Paper states “Market power is the power to influence market prices, output, innovation, the variety or quality of goods and services, or other parameters of competition on the market for a significant period of time.”

\textsuperscript{19} Kuoppamäki 2008, 1080-1081.
\textsuperscript{20} Fox 2008.
Both in the EU and US inferences of market power have taken into account structural and behavioral conditions. In European context structural behavior is especially emphasized.

2.2.1. EC Competition Law

Treaty on the Functioning of the European Union Articles 101 and 102 form the basis of the European competition law. Article 101 prohibits agreements between undertakings that aim to restrict competition and article 102 prohibits the abuse of a dominant position. These Articles are pretty general, but they are the foundation for EC competition and guidelines for secondary legislation as for European Commission Regulations. The legal practice of the Court of First Instance of the European Communities (CFI) and the European Court of Justice (ECJ) finally interpret the treaty.

European competition law can be divided into five main areas: the prohibition of competitively restrictive agreements between undertakings, the prohibition of abuse of a dominant position, a merger control, a state aid and the liberalization of monopolistic sectors. The EC competition law was modernized in 2004 and later 2009. The purpose of the modernization was to decentralize the application of EC competition law. The aim was to decrease the workload of the European Commission, simplify the administration and make the supervision more effective. An important part of the reform was that national competition authorities achieved the right of applying uniform and decentralized competition law. The national authorities got the private right of enforcement of competition law.

Article 101 TFEU competition law is a general article, which tries to prohibit agreements between undertakings, which try to restrict competition within the common market and which may affect to trade between member states. It is denied to fix purchase or selling prices, limit or control production etc. Those agreements are considered void. However, the agreements, which contribute to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, can be considered applicable.
Article 102 TFEU prohibits the abuse of a dominant position by one or more undertakings, if it affects to trade between member states. Thus it presupposes that the company has a certain level of market power and the aim is to prohibit the abuse of it. In contrast to Article 101 TFEU there is no need to show a specific agreement of concerted practice.

A crucial element is the concept of the relevant market. It consists of a substantive dimension and a geographical dimension. All products, which are substitutes for one another can be considered to belong to the same product market. Also the degree of supply substitutability, the demand substitutability and potential competition have to be considered.21

An important issue concerning Articles 101 and 102 are, who is it intended to protect: consumers, competitors, or both? The cases concerning Article 102 can be divided to those, which can be applied into exploitation and anti-competitiveness. Those, which belong to the former, are harmful to consumers and the latter describes conduct deleterious to competitors, actual or potential. When the Treaty was done, it was not apparent, that it applies to both cases. Now Commission sees as the ultimate goal of Article 102 to prevent harm for consumers.

The second important issue is that a dominant company is not allowed to behave abusively in the market. What is an abusive behavior has to be judged in a case in the light of its specific circumstances. Normal competitive strategy is not considered abusive. This issue is very difficult to apply.

An abuse may happen in one market, but it can cause unwanted effects in another market, even though there is no dominance in that market. In case Aéroports de Paris the airport authority controlled access to the supply of catering services and used discriminatory pricing.

An important example of mergers, which is caught by the former Article 82 is the case Continental Can. Contentinental Can was a U.S. manufacturer of metal packaging, which

21 RoschierRaidla 2007, 19-23
was in Europe through a German company. It had acquired the market in 1969. In 1970 it tried to control the markets by buying a Dutch company through its subsidiary. The Commission held that Continental Can had a dominant position of certain types of packaging through the subsidiary and the purchase of the Dutch company was the abuse of the dominant position. 22

There are several cases concerning a refusal to supply, which are considered as abuses of a dominant position. In case *United Brands Company and United Brands Continentaal BV v. Commission* UB had refused to supply to Olesen, a Danish distributor. UB’s claim was that Olesen started to sell a competitor’s product and to neglect the sale of UB’s product after it had failed to secure preferential treatment from UB for the Danish market. It is not clear what kind of UB’s reaction would have been proportionate and lawful, when Olesen’s behavior is also taken into account. It is also unclear whether the rules of refusal to supply apply to new customers.

There has been a lot of discussion concerning the doctrine of essential facilities. It means the idea that if the owner of a facility, which is not replicable by the ordinary process of an innovation and an investment, has made the arrival to the market impossible, has to share it with competitors.

On the whole, the boundaries how the dominant companies should behave on the market are very unclear and that makes it very difficult for the companies to know, how to behave on the markets. There is a continuous debate as to what extent Article 101, 102 should base on legal or economic effects. The Commission has undertaken a review of Article 82 in 2005 and the debate is still going on. 23

2.2.2. U.S. Antitrust Law

US antitrust law is based on Sherman Act from 1890, which purpose was to promote competition in open markets. During that time a rapid industrial development happened in the USA, as well as concentration in petroleum, tobacco and cotton oil industries. The First

22 Craig & Burga 2008, 1019-1021.
23 Ibid., 1025-1027, 1037-1039.
Section denies the restraints of competition and conspiracies, which mean an agreement between two parties, which have an intention to breach the law. The trade is supposed to happen between several States or foreign nations.

The Second Section denies monopolies, when they are abused or used unreasonably by trade practices that violate First Section, if carried out by two or more companies in combination. This means the trade of the USA. The Second Section emphasizes action to status. The scope for the rule of reason is broader under the Second Section than under the First Section.

The Clayton Act 1914 is the most important antitrust statute after the Sherman Act. It prohibits for instance price discrimination and corporate acquisitions, which may lessen competition. 24

The fines for those who shall be deemed guilty of a felony will be not exceeding $10.000.000 for corporations and $350.000 for other persons. An imprisonment not exceeding three years is possible as well as separately or together with fines. 25

When the transfer of technology and intellectual property is concerned, antitrust perspective has to be analysed. The risk is highest, when parties are competitors or they have vertical arrangements. According to the USA antitrust laws most frequently have concerned unlawful practice, which is considered per se anti-competitive. That is price fixing and horizontal market division. Per se violation means that the economic impact of the practice is immediately obvious, that is, it causes most obviously restriction to competition and decreases output. If there are arguments promoting competition, which balance the restraint upon competition, rule of reason can be applied. Horizontal cartels and contracts with the effect of raising the price of a commodity are illegal per se. However, the Supreme Court has held that a rule of reason analysis applies to non-price vertical restraints. 26

The Section 1 doctrine has been developed by the tension between the economic conception of a reasonableness inquiry and the administrative concerns of enforcement agencies. Courts have used reasonableness tests in developing new legal rules. Enforcement agencies have not favoured them, as they do not have access to the information necessary to reject the defendant’s economic reasonableness arguments.

The Supreme Court rejected the common law reasonableness standard and adopted a general *per se* illegality rule in case *Unites States v. Trans-Missouri Freight Assn*. This view was developed to the narrower reasonableness test in case *Chicago Board of Trade v. United States*. The *per se* standard was reserved for price fixing. 27

2.3. Competition Theories

There is a strong consensus in the international discussion that competitive markets are superior to others. However, there are disputes concerning what kind of competition policies ought to be. Some examples of these are so called “system friction” theory, “managed trade” theory and different types of co-operation models, which happen in the realm of R&D or innovation.

Here is an example of a simple competition situation between two companies fighting for a dominant position in relevant markets. It shows easily that it is profitable to invest in R&D in any case.

2.3.1. The R&D-game: “Prisoner’s Dilemma”

The R&D-game is analogous with the Prisoner’s Dilemma as follows. There are two companies A and B. Each company may either invests to R&D or not, and each one knows the possible consequences of its action. These are: 1. If one company invests to R&D, but the other does not, the other who invests will get better profit than the other one who does not. 2. If both companies invest to R&D, they will get equal profit, but not as much as if only one of them invests to R&D. 3. If neither company invests to R&D, they

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27 Hylton 2003, 112.
both will profit, but not as much as if only one of them invests to R&D. Now it is supposed that each company’s sole concern is its own self-interest. Under these conditions, what should the companies do? - Actually that was a case with two American companies: Pampers and Huggies, which produced the same product diapers in the same market, i.e. see Figure 7.28

The size of investing to the R&D determines the share of the market and, ultimately, the profits of each company as follows: If neither company does not invest to R&D, the company A will get a +$30 million profit and the company B will get a +$70 million profit. If the company A invests to the R&D but the company B does not, the company A will profit +$85 million profit, and the company B will lose -$10 million profit. And if the company A does not invest to the R&D, but the company B does, then the company A will lose $10 million profit and the company B will get +$85 million profit. If both companies invest to the R&D, the company A will get +$5 million profit and the company B will get +$45 million profit. Now, it seems, that it is better for both companies that they do not to invest to the R&D. However, in case other the company invests to the R&D, and the other one not, the company which invest will dominate the market and get highest profit.

28 Karlia-Palomäki & Palomäki 2010.
2.3.2. Perfect Competition versus Monopoly

In this Section the theory of a perfect competition is compared with a monopoly and its applications to innovative environments.

A perfect competition is the most successful environment to create consumer welfare. However, perfect competition is an idea, which presupposes certain assumptions in order to exist.

The assumptions of the model of perfect competition are the following: Firstly atomism means that the output of each seller is only a small fraction of the market. Each buyer and seller takes market price as given. Secondly perfect information means that information is a public good. For example a seller, who advertises cannot be sure how many consumers notice the advertisement, because some of the benefits go to other sellers. The adverse selection of the insurance market means, that the insurer cannot predict the risk level of each applicant. The insurer’s price is an average price of the anticipated risks. Thirdly mobility means that resources flow easily from one market to another. Monopoly becomes possible without mobility. Fourthly no third party effects are allowed. The model of perfect competition assumes that there are no third-party effects. Ronald Coase’s demonstration was that if a downstream company is a chemical producer, which pollutes the water and is expected to clean the water, it is more profitable to pay for the upstream company to cut output than to clean the water. Fiftly products have to be homogenous. The differentiation helps to create new markets for instance for different types of wheat.

In long run competition, firms earn zero economic profits. This is because of entry and exit. Entry and exit occur in response to economic profits, not accounting profits. Economic profits do not go to zero in the short run. The appearance of short run profits causes entry and exit. 29

The monopolist’s demand curve is the market demand curve. Monopolists have to prevent entry by competitors. There are natural and artificial barriers to entry. Artificial barriers can

29 Hylton 2003, 4-10.
be government created and privately created. Government created can be 1) patents 2) taxicab medallions 3) government franchises or exclusive contracts and 4) licensing. 30

2.3.3. The Schumpeterian Argument

Joseph Schumpeter noted that there are to be short-run profits, since otherwise the incentive to enter the market and the incentive to innovate would not exist. However, the attainment of a monopoly position often provides short-run profits.31

As an example we can take an innovation process, where a firm develops a new production process that results in a dramatic reduction in costs, which leads to an expansion of output and a short-run monopoly. Over a time others learns how to mimic the process and their entry to market will reduce profit to zero. Schumpeter’s important insight was that the innovation-profit-entry process is a chain that is linked at several places, and that the causation is not necessarily one-directional. The prospect of earning large, temporary profits generates efforts to innovate, and successful innovation leads larger profits. If the amount of extra profits is taken away or reduced, there will be less innovation, and less entry.

Schumpeter claims that equilibrium requires an expectation of profits, which results from innovation. If innovation does not lead to profit, firms and companies would not devote effort to innovation, because of its cost. On the other hand, if other firms devote no effort to innovation, the likely profits from innovating for a firm would be large. Therefore the prospects of short-run profits must always be present in a competitive economy. Also, the policies that tend to reduce short-run profits reduce innovation incentives.

Deadweight loss is the welfare loss caused by monopolies. Schumpeter’s theory of economic development was that the innovation-profit-entry process is a chain that is linked at several places and it is not unidirectional. 32

30 *ibid.*., 15.
31 Schumpeter 1934, 128-56.
32 Schumpeter 1934.
The prospect of earning large temporary profits generates efforts to innovate. Successful innovation creates large profits. In case there are no profits available there are few innovative efforts.

Some criticism towards the Schumpeterian doctrine follows: Antitrust policies should be aware of the fact, that very strong enforcing of the anti-monopoly provisions can be fatal to the welfare of the society in the long run. Innovations cause spillover benefits to other companies, which may take advantage of the innovation. The best a society can do is the protection of the innovation in short run. Not every innovation can be protected, for instance copyright protects expression, not ideas. Product differentiation makes society losses different. The relevant choice is not between the monopolistic competition equilibrium and the perfectly competitive equilibrium, but between the monopolistic competition outcome and some other outcome, that does not satisfy consumer preferences for product safety. 33

The basic principles of a perfect competition and monopolies show, that it is not easy to achieve a competition environment, which promotes innovations. Even though the basic principles like protecting short run innovation is done, there are many other factors effecting to the competition situation and its results.

Joseph Schumpeter is most famous today describing capitalism as developing though gales of “creative destruction”, by which new technologies supplant the old. Schumpeter also is well known for suggesting that large firms and monopolists may be more innovative than firms in competitive markets. Large firms might be better be able than small ones to fund large research and development (R&D) projects. Firms with a strong pre-existing market positions, including monopolists, may be more willing to pursue R&D, if they have less fear that rivals, lacking their installed base and reputation, would be able successfully to market products that emulate their new ideas or are produced using their improved processes. Moreover, the more that the returns to an innovation go to the firm that first develops the idea, the greater the incentive the firm will have to engage in R&D activity. 34

34 Baker 2007, 4, 5.
2.3.4. An Analysis of the Schumpeterian Argument

According to Hylton, the Schumpeterian argument is a very strong one, but which has not received attention enough from antitrust policy makers. Hylton presents three argument defending Schumpeter as follows:

The first argument suggests that we should be careful about enforcing especially the anti-monopoly provisions of the Sherman Act. If strong and aggressive efforts are done to dissolve businesses with large market and high profit as soon as they appear may lead in the long-run to a reduction in society’s wealth.

His second argument is a variation of the first one. In certain areas, innovation provides spillover benefits to other firms and other industries, and the innovator cannot collect compensation for these spillover benefits. Therefore, the attainment of a short-run monopoly is the best an innovator can do.

2.3.5. The Arrow's Argument

The relationship between competition and innovation is the subject of a familiar controversy in economics, between the Schumpeter’s view that monopolies favor innovation and the opposite view, often associated with another influential twentieth century Nobel Prize-winning economist, Kenneth Arrow, who emphasized a competing logic by which competition rather than monopoly promotes innovation.

Arrow explained that a monopolist might innovate less than competitive firms, because a monopolist has more to lose. Arrow observed that a monopolist bears a cost when innovating that an innovating competitor does not, as it gives up the opportunity to continue to earn monopoly profits without innovating. In consequence, the incremental gains from innovation to the monopolist exceed those of a firm in a competitive setting that would expect to earn similar post-innovation profits.

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A monopolist could spend a great deal of money to make a dramatic improvement, whether by lowering cost, improving quality or creating a new product, and take over the market, only to find that it does not get much additional business, because it already has most of the business there is to get. If a competitor had come up with the same innovation, by contrast, it would earn more because it would expect to take away much of the business previously conducted by rival firms. This limitation on the incentive of the monopolist to innovate is often termed the “Arrow effect” or the “replacement effect”, because it arises to the extent the monopolist replaces itself rather than developing new business. It will likely be the strongest when the new product or process can be expected to fully displace the old innovation, and when the monopolist does not fear that some other firm will soon implement a similar idea.36

2.3.6. An Invention as the Production of Information

The central economic fact about the processes of invention and research is that they are devoted to the production of information. By very definition of information, invention must be a risky process in that output, i.e. information obtained, can never be predicted perfectly for the inputs. As a risky process, there is bound to be some discrimination against investment in inventive and research activities.

Accordingly, we expect a free enterprise economy to underinvest in invention and research because it is risky, because the product can be appropriated only to a limited extent, and because of increasing returns in use. This underinvestment will be greater for more basic research. Further, to the extent that a firm succeeds in engrossing the economic value of its inventive activity, there will be an underutilization of that information as compared with and ideal allocation.37

Arrow remarks that incentive to invent can exist even under perfect competition in the product markets, though not, in the “market” for the information contained in the invention. This is especially in the case of a cost-reducing invention. Provided only that suitable royalty payment can be demanded, an inventor can profit without disturbing the

36 Arrow 1959.
37 Ibid., 15.
competitive nature of the industry. The situation for a new product is not very different. By charging a suitable royalty to a competitive industry, the inventor can receive a return equal to the monopoly profits.

By examining the incentives to invent for monopolistic and competitive markets, Arrow argued, that the incentive to invent is less under monopolistic than under competitive conditions, but even the latter case it will be less than is socially desirable.\textsuperscript{38} The argument goes like follows:

We will assume constant costs both before and after the invention, the unit costs being \( c \) before the invention and \( c' \) after the invention, and \( c' < c \). The competitive price before invention will therefore be \( c \), and let the corresponding demand be \( x_c \). If \( r \) is the level of unit royalties, the competitive price after the invention will be \( c' + r \), but this cannot be higher than \( c \), since firms are always free to produce with the old methods. Also, it is assumed that both the demand and the marginal revenue curves are decreasing. Let the monopoly output before the invention be \( x_m \), and the monopoly output after the invention be \( x'_m \). Let the monopoly prices corresponding to outputs \( x_m \) and \( x'_m \), respectively, be \( p_m \) and \( p'_m \). Finally, let \( P \) and \( P' \) be the monopolist’s profits before and after invention, respectively.

In case of the optimal royalty level for the inventor in the competitive case, let us suppose that he calculates \( p'_m \), the optimal monopoly price, which would obtain in the post-invention situation. If the cost reduction is sufficient great so that \( p'_m < c \), then his most profitable policy is to set \( r \) so that the competitive price is \( p'_m \), i.e., \( r = p'_m - c' \). In this case the inventor’s royalties equal to the profits a monopolist would make under the same conditions.

Accordingly, the optimal royalty level for the inventor in the competitive case is equal to the profits a monopolist would make under the same conditions, i.e. his incentive to invent will be \( P' \). However, the monopolist incentive to invent is \( P' - P \). Thus, the monopolist’s incentive is obviously less than the inventor’s incentive under competition, which is \( P' \) and

\textsuperscript{38} Ibid., 16-20.
not \( P' - P \). The pre-invention monopoly power acts as a strong disincentive to further innovation.

As a consequence he says that for optimal allocation to invention it would be necessary for the government or some other agency not governed by profit-and-loss criteria to finance research and invention. The bulk of basic research has been carried on outside of the economic system, at universities, in the government, and by private individuals. It is recognized the importance of non-pecuniary incentives, both on the part of the researches and on the part of the private individuals and governments, who have supported research organizations and universities.

If the government and other non-profit institutions are to compensate for the under-allocation of resources to invention by private enterprises, two problems arise:39

1. How shall the amount of resources devoted to invention be determined?
2. How shall efficiency in their use be encouraged?

These problems arise whenever the government finds it necessary to engage in economic activities because increasing returns prevents the private economy from performing adequately such as highways, bridges, reclamation projects, but the determination of the relative magnitudes is even more difficult here. Formally resources should be devoted to invention until the expected marginal social benefit there equals the marginal social benefit in alternatives uses, but in view of the presence of uncertainty, such calculations are even more difficult and tenuous than those for public works.

The problem of efficiency in use of funds devoted to research is one that has been faced internally by firms in dealing with their own research departments. For example, the rapid growth of military research and development has led to a large-scale development of contractual relations between producers and a buyer of invention and research. The form of economic relation is very different from that in the usual markets. Payment is independent of product; it is governed by costs, thought the net reward is independent of both. Firstly, the awarding of new contracts will depend in part on past performance, so

39 Ibid., 21.
that incentives for efficiency are not completely lacking. Secondly, the relation between the two parties to the contract is something closer that a purely market relation. It is more like the sale of professional services, where the seller contracts to supply not so much a specific result than as his best judgment. Thirdly, payment by results would involve great risks for the inventor, risk against which he could hedge only in part.  

Patent laws already embody this theory. However, not every process innovation or idea can gain patent or copyright protection. For example, patent protection requires certain degree non-obviousness, and there are vast areas that cannot receive such protection, such as graphic designs with functional features, and mathematical formulas. Copyright, in turn, protects expression, not ideas. In light of these large gaps in government protection, some incentive is to be provided to innovators, who fall within them. Now, the short-run monopoly provides this incentive.

Hylton’s third argument is that the prospects of attaining a short-run monopoly may urge entrepreneurs to seek out and identify consumer tastes not sufficiently satisfied by the range of products already on the market. The result of this is the introduction of new, differentiated products, where the differentiated-product monopolist enjoys a short-run monopoly. As time passes, the other will enter the field until economic profits fall to zero. However, because the firms do not face an infinite elastic demand curve, the differentiated-product monopolist will produce at a level below the long-run cost-minimizing point.

If one thinks that society loses to the extent that the differentiated monopolist’s production costs exceed the long-run minimum, Hylton points out that, the relevant choice is not between the monopolistic competition equilibrium and the perfect competitive equilibrium. Instead, the relevant choice is between the monopolistic competition outcome and some other outcome that does not satisfy consumer preferences for product diversity.

The relation between market power and innovation is a complex system and not related just for static welfare. Vesala considers that Schumpeter favours market power and Arrow favours competition. Schumpeter considers that large companies are responsible for

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40 Ibid., 22.
41 Ibid., 21.
technical development and Arrow considers that monopolists innovation incentives are lower\textsuperscript{42}.

Baker differs four important factors related to competition and innovation. The first is that competition motivates innovation in itself. Companies trying to develop new products compete and make new innovations as such. Second, competition encourages to find lower costs and develop better products. This means that they can escape innovation by developing better products. Third fact is related to the second. Companies, which can expect to be able to escape competition with innovation find it motivating to innovate. The fourth factor is that by developing new products a company can discourage rivals. Baker says that modern studies of competition still cannot satisfactorily control the differences of industries concerning the extent and growth of technological opportunity. On the whole a strengthening of competition policy is likely to have a positive effect on innovation\textsuperscript{43}.

\textbf{2.3.7. The Scope of Monopoly}

The typical circumstance in which monopolist behaviour is acquired concerns a commodity, which the consumer desires: a monopolist can use his power by restricting the supply of the commodity. Typical examples of this are everyday goods like petrol, food or land. Cutting down the availability of these goods causes that the consumers want to buy more of it what is left there. In this situation the seller is capable of increasing the price and he then behaves like a monopolist. In case there are competitors, the seller is not able to increase the price, as the competitors expand their output and the consumers go to the cheaper competitors. There is no significant difference, whether the products are precisely the same or slightly different. The profit all sellers make depends on the following factors: the number of things sold, their price and their cost. In case unit costs do not vary significantly there is a relationship between number and price and the seller can find an optimum level of production at a certain price.

There is a lot of criticism against monopoly. The monopolist can determine the factors about goods and control the markets. The costs may not stay at a same level, because there

\textsuperscript{42} Vesala 2015, 6-7.
\textsuperscript{43} Baker 2007.
is no competition. Some consumers may buy something less valuable, as they are not interested in the monopoly product. This leads to “misallocation of resources”.

The advantage of a monopoly is for example that a production of large scales may need only one source of production. This could be called a natural monopoly. It can be said that sometimes monopoly profits create security to a company to make investments enough for the future.44

In the U.S. practice the Section 2 of the Sherman Act deals with monopolization. The Section prescribes three offences – monopolization, attempted monopolization and combinations or conspiracies to monopolize. The Section emphasizes action to status. Verbs like “monopolize”, “attempt” and “conspire” are used. Size is not unlawful *per se*. The scope for the rule of reason is broader under Section 2 than under Section 1, which restrains forbidden contracts of competition like conspiracies between two companies. Section 2 is applicable both to individuals and to companies. The courts have developed the concept of monopolization and the essential elements are the possession of monopoly power in the relevant market and the will to acquire or maintain that power. 45

Early decisions of the Supreme Court showed a restricted role to Section 2 and treated it as a supplementary article to Section 1. A monopoly power is usually acquired by a conduct, which is breaching Section 1. However, unexercised monopoly may breach Section 2. That is why the Sections have separate and equal status. The standard of meeting the tests of Section 2 is high. It is easier to gain proof of a price-fixing agreement according to the Section 1 than show domination and control under Section 2. Monopolistic behaviour may be condemned also according to other parts of antitrust laws like Section 7 of the Clayton Act, which prohibits mergers lessening competition or creating a monopoly. 46

The essence of a monopoly was the possession of overwhelming power within the relevant market according to the early decisions. After case *Northern Securities Company v. United States* there was a discussion whether exclusionary conduct towards third parties was

44 Cornish & Llewellyn 2003, 36-39
45 Raybould & Firth 1991, 14, 99
required as a precondition of a monopoly. The next phase of cases concerned tobacco and oil trusts and based upon the consideration of market structure and not on predatory pricing. 47

There are three reasons for the protective rationale for monopolies. Firstly a monopoly is sometimes the most effective way for a market to be structured. Secondly the hope of a monopoly is an incentive to promote innovations in a market. It can bring supracompetitive returns. Thirdly, without monopolies, courts should control price levels in cases where substantial power is present. Courts are not very well-equipped for that purpose.

In order to stimulate the maximum degree of innovative activities, there has to be a defined area of a permissible conduct and an opportunity to exploit it. The spoils of innovative actions are supracompetitive prices and profits. Monopolisation requires both monopoly power and anticompetitive conduct. They have to be tolerated as long as they are innocently gained and are not used in a way, which causes social harm.48 However, this could be criticized, because it does not describe precisely what is a “right innocence” and what is the “social harm” meant here

One potential strategy of monopolization is a technological exclusion. It means that one company tries to exclude others from the market by a purposeful adjustment in the leading company’s technology.

2.4. IPRs and Competition Law

There are many ways of looking at competition law and IPRs. Ilkka Rahnasto has in his doctorate thesis (2001) presented four alternative theories:

1. The priority of competition law
2. The priority of IPRs
3. Researching IPRs as a property
4. A cost-benefit-analysis

48 Jorde & Teece 1992, 166.
The first theory sees IPRs negative, because they bring market power to a company, which can be misused to damage consumers. The priority of IPRs is supported by the right holders. American property rights supporters see IPRs as a property, which profits have to be maximised.

Rahnasto emphasises the fourth theory, according to which IPRs are acceptable, when the rights bring to its holder more benefit than they cause harm to others. The benefits and harms should be considered not only as the right to exploit against a public benefit, but to look at the holder of the right against other companies working in the market against a public benefit49.

Kuoppamäki says in his doctorate thesis (2003) that, when practical decisions are made, there is seldom knowledge available about the future effects of the alternatives. The model does not include information about, how IPRs and the interests of the competing companies should be evaluated with each other. Kuoppamäki supports so called extended method of cost-benefit-analysis, in which the line between acceptable and non-acceptable behaviour can be done according to the use of the IPR. The IPRs can:

1. Safe R&D work by giving protection against imitators
2. Reward efficiency (promotes innovative actions)
3. Steer the behaviour of other actors in the market to the wanted direction
4. Restrict competitors to entry the markets
5. Use IPRs as a technical help to create for instance a cartel

The points 1. and 2. can be acceptable, the point 4. non-acceptable and the point 5. as a forbidden way to use IPRs. The point 3. is a grey area. The rule of reason –thinking increases flexibility, but causes costs as trials. The per se –restrictions do not need a wide analysis, just to make sure the nature of the restriction and to classify it. The evaluation according to competition law means, what is meant by steering the behaviour of others and how it effects to the welfare of consumers. Competition law effects so that

a) The prices of the good raise and the production limits against the benefit of consumers
b) The entrance of other actors to the market is restricted artificially or their behaviour in the market is restricted.

Competition law has taken a neutral relation to IPRs. The idea is to increase efficiency and the welfare of the consumers and to ensure the freedom of companies. IPRs are one form of a property and comparable to real estate. IPRs can be a goal of a contract and the protection of a property as real estate. However, their use is restricted by the same rules of competition law as concerns other properties. The special features of IPRs have to be taken into account. Then, for instance, the cost basis has a different content than in general.

Relevant focus can be patent groups, the shift contracts of technology and the restriction of parallel import. Concerning the abuse of a dominant position, special features can be the denial of making a contract without grounds, price discrimination, tying etc. Competition law can restrict the company holding a dominant position to use its IPRs as a whole. It is possible that IPR protects the weaker party like in the case *Intergraph Corp. v. Intel Corp.*, in which a leading producer of micro-processors preceded from its clients, that they license to Intel their inventions, which are important to the smaller competitor. The competition authorities denied the demand to license automatically the inventions to Intel50.

Kuoppamäki has considered from the point of view of competition law the basic model of the doctorate thesis of Martti Virtanen51. Virtanen’s view is to consider a dominant position as an economical phenomenon, as Kuoppamäki has considered a four-dimensional method of looking at a dominant position. Firstly he defines the independency of the pressures of competition, which means, whether the company may set prizes over a competitive level. The relevant issues here are the market share like over 50% and the definition of relevant markets. It can be criticized that markets are not a reliable basis for the definitions. Secondly he defines the structure of the market, whether the market is concentrated and what the prohibitions to the area are. These can be absolute or relative prohibitions from the market. It is problematic to define competitive and anti-competitive means of

50 Kuoppamäki 2003, 839-841.
competition. This can lead to a circle of thinking that a misuse leads to a dominant position, which leads to a misuse. Thus only a market behavior cannot prove a dominant position. Thirdly he defines the strategic research, how the company uses its power and how vulnerable the competitors are. Fourthly there is the dependency of the partners of the company in a dominant position. It means the power to force partners to certain deals or terms. It is also difficult to define, whether the power is depending on the dominant position or just from the market power52.

Rahnasto’s doctorate thesis (2001) concentrates on the external effects of patents and copyrights in the communications industry. External effects are defined as impacts caused by patents and copyrights on others than the rights holder. Those effects can be called also social costs, social benefits or spill-over-effects.

Rahnasto’s basic presumption is that intellectual property rights are valuable, as they can be used to affect the way in which other companies behave and allocate their resources. This has become increasingly important, as companies work in networks and their activities affect to each other.

Patents can be strong or weak according to their strength to effect the business environment. The strength can be controlled by business practices. An intellectual property strategy is needed to optimize the influence on the activities of one’s own and also the effects on the others. The ideal strategy takes into account the market size and the company’s market share.

The tradition of the theories of IPRs has considered them as means to increase the rights holder’s share and to encourage rights holders. This is based on the idea of innovations as “serial models”. This ideology has been replaced with “public interest” to favour free competition, the freedom of speech and the dissemination of inventions.

Rahnasto emphasizes that the effect of the strategic use of IPRs on particular markets should be taken into account. The effects of particular practices on particular markets are

52 Kuoppamäki 2003, 1317.
identifiable. The traditional legal doctrines both in the USA and in Europe have favoured the idea that patents should not influence activities, which are not covered by such rights.

Rahnasto emphasises the effects on remote markets. An example of those effects is the fragmentation of exclusive rights on the market for complete products. There is a need for protection of different competing interests so that all interests get protection simultaneously. The intellectual property should be able to balance these interests. In Europe the Block Exemption for Technology Transfer Agreements has provided an indication of balancing the competing rights. In the US there are the *IP Guidelines* for that purpose. In the US some practices are *per se* illegal and others are under a “rule of reason” analysis. The problem with these is that they do not take into account the effects on other markets than the primary markets\(^53\).

The term leveraging is used to refer to a strategy by which a firm with power in one market exploits it in another. It can also mean leveraging power from one product to another. The source may often be an innovation. Leveraging can be shown by some simple way like being the first to enter a thin market. *United States v. Griffith* is the classic leverage decision in which that was used as the source of the defendant’s power.

Typical features of leverage are that all efforts are to maximize monopoly returns (they are “exploitive”), they impede the competitive process in a way, which monopoly pricing does not and their restrictive effect is felt when removed from the source of power.

In case *United States v. Griffith* the question was bargaining about theaters. Griffith owned eighty-five theaters, from which fifty-three were in one-theater towns and thirty-two faced local competition. Griffith bargained for the chain as a unit and obtained first-run clearance rights in competitive towns. The Court held that the monopoly attained violated Section 2 of the Sherman Act.

However, the open towns remained open and there is no evidence about the monopoly had threatened them. There is no justification either for an argument that a monopoly in one market can be used to distort competition in another market, as long as no monopoly is

\(^{53}\) Rahnasto 2003, 1, 201-207.
achieved in that market. The main point is not the structural position in the adjacent market, but the misuse of it. Leveraging enlarges the exploitation of the existing power as well as distorting competitive outcomes in the adjacent market.

The new group exemption rules evaluate the effects of competition according to the rule of reason evaluation. The licensors and licensees have more freedom of contract in general. The rules include only a list of forbidden terms of contract (black list). The meaning of the self-evaluation of the parties grows increasingly. The new group exemption rules are more general and do not include detailed rules of the acceptability of different contractual terms. The Commission takes a more detailed view to the standardization and to the competition law questions of the licensing agreements between more than two parties.

An example how a large electronics-based company has used its IPRs as a part of its competitive strategy is AT&T. In the early era IPRs were used to acquire rights. Inventions were selected on the basis of the interest of the technology to AT&T. Patents were means to recognize personnel and the professional contributions of employees. They developed worldwide business through cross-licensing. The invention of the transistor led to a new industry of semiconductors. They did so called lump-sum licensing: “I will give you 30,000 euros a year for the next five years and then you will not bother me with your patents, and you will give me 60,000 euros and I will not bother you.”

Trade secret licenses were used to develop new standards, which required extremely expensive R&D investments. In the era of globalization the offshore ventures have included a technology package to a trade secret agreement. IPRs are important for computer software industry and so patent harmonization is increasingly important. IPRs are an important part, when making decisions concerning investments, as well as the age of the technology applied in a particular country.

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54 Jorge & Teece 1992, 171-175.
56 Wallerstein et. al. 1993, 236-240.
2.5. Pressures for Development

Competition law is closely linked to the IPRs, as they allow exclusive rights for a certain area for a certain period. In the traditional industrial production the task of the IPRs is to reward useful R&D work in the form of an exclusivity right. An industrial company succeeds in an R&D project and makes an improvement to previous methods of production. The company gets a patent, with which it gets the exclusive right for the exploitation of the innovation for a limited period of time. The company can exploit the right by itself or grant licensing rights to other companies and get compensation. IPRs restrict others using the right, but others can try to exploit public information.57

New economy, which Ahlborn, Evans and Padilla are defined as follows:

“The new economy consists of industries such as computer software and hardware, the internet, mobile telephony, biotechnology and others that are based primarily on the creation of intellectual property and that are undergoing rapid technological change” using immaterial rights in another way.58

For instance in the production of mobile phones the companies use each others’ patents. The innovations are licensed to the competitors rapidly. New information technology and globalization lead to a situation, where R&D resources are much the same.

The nature of monopoly will be described as follows: It can be a source for innovations, but only for a short while, as it tends to decrease the innovative efforts in long run.

Information technology has changed the nature of the competition and the use of IPRs. This has happened both horizontally and vertically. Horizontally it can been seen as a “superstar” effect, which means that by a successful marketing it is possible to make brands, which are globally known and the public only notices those in media. For instance the concept of “The Three Tenors” with three performers Jose Carreras, Placido Domingo, and Luciano Pavarotti are so popular that other good tenors have difficulties in attaining

58 Ibid.
large concert public. Vertically information technology lowers entry barriers and for instance many start-up bands have the possibility of getting their output to websites and get their work to niche audiences worldwide. This may be a start for a famous career nowadays. This means that market power is possible to achieve also without IPRs on condition that the brand is good enough. However, in technology area the traditional and typical way to control the markets, when achieving market power, has been to use IPRs. Information technology companies such as Motorola, Hewlett-Packard, and so on, receive large quantities of patents every year. They are used in different ways. Patents form portfolios, which can be used offensively to keep competitors out of certain markets, defensively as negotiating cross licenses with other companies, which have interesting patents, or as profit centers, which generate revenues by entering into licensing agreements. 59

A traditional way of looking at competition and how it affects to innovation and growth is to compare Schumpeterian view with Arrow’s view. Schumpeterian view emphasizes that large firms, with a substantial monopoly power, have both the financial resources and the incentives to undertake investment in innovation. Because of that, society must accept static monopoly welfare losses in order to gain investment in innovation. Arrow’s view means that in a perfectly competitive market there is a higher incentive to innovate than in a monopoly. There is supposed to be “perfect” IPRs so that the innovator can license the innovation at a full market value. 60

Motta presents models of competition and innovation. 61 He emphasizes, that competition stimulates innovations, but so does the expectation that through market profits there is a possibility to invest in R&D. Motta gives an example that, when there is competition no company can appropriate the innovation. This can depend on the fact, that there is no patent protecting or there is a compulsory licensing. No company has an incentive to innovate in this case. The diffusion of the technology prevents an innovator of making a benefit out of the innovation. The profit would be zero and the fixed cost of the innovation could never be recovered. The purpose of the example is to show that market power increases incentives

60 Greenhalgh & Rogers 2004, 3-4.
to innovate, introduce new goods and improve product quality. No public policy could have an objective to eliminate market power.62

In a monopoly there are low incentives for innovation. A monopolist will innovate if the difference between innovating and not innovating is greater than fixed costs. In case two firms innovate, they both get profits greater than fixed costs. If none innovate, they will get zero profits. This situation can be solved as follows: If gross profit is greater than fixed costs, the only equilibrium is where on company innovates and the other does not. In an opposite situation no company will innovate at the equilibrium.63

Patents improve welfare. Because of spillovers, R&D is a public good. As companies cannot benefit their R&D efforts maximally, they do not invest in R&D as much as they should from the point of view of the society. The patents give protection for the company. This model supposes that patents are optimal not depending on the level of spillovers. It is supposed that goods are homogenous and price competition leads to a strong competition and to strong returns of R&D. In a weaker competition situation, patents increase R&D levels, if there are a lot of spillovers.64

Public policies have an impact on incentives to innovate. When investing to R&D companies want to have promises from a government, that they can fully benefit from the results of R&D. Governments have a temptation to renege these promises, as soon as the results have been achieved. In this way the innovation would be used by a maximal number of companies, also by those companies which had not invested in R&D. This would give more benefit to the consumers. However, this is short-sighted, as companies want to rely on the support and the lack of the support can lead to a situation, in which companies do not innovate at all. Patent laws are a government’s way to support a company ex post. A company can rely on a certain time, during which it can benefit the results of its R&D investments.

62 Ibid., 58.
63 Ibid., 59.
64 Ibid., 64.
The optimal design of patents has been a focus of a lot of research. This research aims at identifying the optimal breadth and length of patents. However, it is difficult to identify the optimal patent, which is not arbitrary.65

This shows that it is difficult to create optimal competition environment for innovations. Perfect competition has certain preconditions like perfect information, which rarely is possible. In short run monopolies seem to be good environments for creating innovations. However, they easily decrease competition and are targets of competition actions. A combination of monopoly power with certain control of competition law may bring a good environment for competition and innovations. Innovations cause spillovers, which makes it difficult to protect them optimally. IPRs may be used to create monopoly power, but only for a certain area and a certain period.

65 Ibid., 64-65.
2.6. Philosophical Reflections on Competition Law and IPR

Companies try to maximize their profits. That is why they need information about the markets. There is very seldom full information available. There are often obstacles for new entries to the market. The reality does not make it possible to have perfect competition. Especially in Finland it is typical that there are some companies in the market, which is called an oligopoly. Oligopolies can be tighter or loser depending on markets. Oligopoly companies depend on each other concerning production, pricing and marketing.

When modelling oligopoly markets, a relevant factor is time. Companies do not make decisions at a same time, but little by little. Time dimension is relevant concerning the decisions of companies. Companies try to maximize the going value of their future profits. That is why it is essential to look the decision making of a single company. A good method for that is game theory, as it is not dependent on time.

Companies have different tolerance concerning the gain of the profits. Some companies try to make good profits in short term, others are willing to wait for them. For the latter ones it is possible to maintain high prices, as they meet their competitors again and again. It is possible to achieve new markets by lowering prices, but it can be risky, as the other companies can follow and this can lead to a price war. So, the relevant dimensions in this kind of collusion are common rational strategies, the possibilities to monitor and the mechanism of consequences. The relevant factor of decision making is, whether it is worthwhile to follow the chosen strategy or is it essential to make exceptions.

Law is a normative order, which controls human behavior. Norms guide human behavior. They order behavior and if not followed, sanctions will follow. Social order means, that there are some behavior models, which are always treated in the same way in same situations. Legal norms include force and they are applied, when needed, without the will of the person in concern.

Kelsen describes that norms are either static or dynamic and they form hierarchy. The hierarchy of static norms presupposes a basic norm (Grundnorm), from which other norms

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67 Kelsen 1968, 207.
68 Makkonen 1998, 80-82.
are derived. Then norms like “Promises are to be kept” can be derived from a norm that you have to be truthful. Dynamic norms only include the facts, which create a norm. That norm gives the rule, how other norms are created. For instance in some societies there is a norm that you have to pay a dowry to have a fiancée. The obligation to pay the dowry depends on the custom, which has been created during past years.  

Helin describes how Alf Ross led further the development of legal philosophy in 1960s. He defined personal relations either relations between two legal or natural persons. Rights are not considered as the power of legal subjects to legal objects, but relations between them. Legal consequences were understood then in a more fruitful way. They could be interpreted as changes in legal positions, which can be seen in the relations of the persons. The framework of questioning could be then “To which facts the change Q in the relation between A-B according to the present law is connected to?  

IPRs are rights, which are used in relations between two or more legal entities (A-B, A-B-C, A-B-C-D etc.) The entities make agreements, which are dependent on the surrounding competition environment. The competition environment is dynamic and the success of the licensing agreement between the legal entities is time-related and risk-related.

The new regulation of TTBER sets the framework for competition and also for the licensing agreements. Companies try to avoid risks of trials by settlement agreements. The higher the royalties are, the more they talk about the effort to try to avoid legal consequences. Now it is a matter of evaluation of risks. How much a company is willing to pay for avoiding a risk to be realised. In the fourth chapter the evaluation of the risks are scrutinized and also in the light of the new TTBER regulation.

The relevant ethical theory connected with TTBER regulation is utilitarianism, developed by Jeremy Bentham. It focuses on the consequences of an action. Rule utilitarianism means that we ought to accept rules which increase in the greatest increase in total happiness. That means advantage, benefit or good for the affected parties.

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69 Kelsen 1968, 209-211.  
70 Helin 1988, 415.
The rule utilitarian perspective thinks that if people would ignore laws they felt to be unjust they would be happier. However, this kind of behavior would lead to other consequences. Those affected by lawless actions would be harmed. People in general would lose respect for the law. Lawless actions would increase the burden of criminal justice system and the society would have to pay for having more resources. Hence, it is wrong to break the law according to the rule utilitarianism.\textsuperscript{71}

\textsuperscript{71} Quinn 2009, 74, 93-95.
3. MANAGING COMPETITION ENVIRONMENTS AFTER THE CHANGES

3.1. The Denial to Misuse a Dominant Position

A dominant position means that a company can effect to competition preconditions, even though it could not totally direct them. The relevant Article of the Treaty of the Functioning of the European Union (TFEU) is 102. It is as follows:

When a company has a significant market power, it can act in a way, so that competitors’ actions cannot harm it economically. In oligopoly markets it is always possible to set prices over marginal costs and make profits. EU court praxis says that it is essential to define relevant markets and then define the position of a company in those markets. The relevant factors defining a dominant position are the market share of a company, economical resources, the market shares of competitors, obstacles for entrance to the market, the competition dynamics in the relevant market and the competition outside the market, competition benefits in production, competition benefits in technology, exclusive rights.72

In EU court praxis case Microsoft was an example of a significant dominance, more than 90% market share. Windows operating system formed one type of standard and Commission stated that Microsoft had a full dominant position. A dominant position means a sliding scale between perfect competition and monopoly. Article 102 of the EU treaty applies, when a company has such a market dominance, which makes it possible to act without competition causing economical harm. Market shares are an important factor, when defining market power. It is easier to define market shares than market structure. Defining market shares would demand more clarification. Market shares are indicators of the size of companies compared to competitors. However, market shares are not always in correlation with market power. Market shares are a static way of looking at market dynamics, instead of other factors influencing to market power.

In case United Brands the Commission said that a 40-45 % market share does not mean market power, but it demands information about the amount and power of competitors. In 72 Case United Brands v. Commission 27/76, Case Hoffman-La Roche 85/76
AKZO case the court said that 50% market share is a proof of a dominant position, if there are no exceptional conditions. The higher the market share is, the more there is indication of a dominant position.\textsuperscript{73} In case Hoffman-La Roche the market share of A-vitamin in relevant markets was 47% and the competitors’ market shares were 27%, 18%, 7% and 1%. The Commission considered the structure of the market combined with the market share as an evidence of a dominant position. When considering the relevance of a market share, it has to be somehow stable.\textsuperscript{74}

Relevant product markets have to be found. They are not necessarily the same as aerial markets. Most important is to be able to know interchangeable and alternative products. When products depend on each other, their prices correlate with each other. The clearer the dependency is, the more likely the companies belong to the same markets. The relevant markets are formed from the relevant product markets and relevant geographical markets. It is essential to scrutinize the changes of demand. If a company tries to take advantage of market power, it is important to look at the movements of marginal clients. They are the clients, who most likely change their consumer behavior in correlation with price changes.\textsuperscript{75}

International treatises like TRIPs and EC treaty \textit{sui generis} legislation try to support the globalization and expansion of intellectual property rights. They emphasize unfair competition law. Even though free markets are the heart of the Western economic theory and they are thought to be the best way to satisfy the demand and supply, it does not mean that the policy towards market is \textit{laissez faire}. On the contrary interference in the market brings administrative costs, which contribute to the transference of the costs of competition to shift from one market to another. Market intervention causes so social benefits. Interference should provide more information to the market so that perfect knowledge induced perfect competition.\textsuperscript{76}

Unfair competition was already recognized in Paris Convention in 1900. The acts of unfair competition may be categorized in many ways depending on the behavior. There can be

\textsuperscript{73} Case AKZO Chemie BV v Commission C-62/86.
\textsuperscript{75} Aalto-Setälä & Co 2008, 203.205, 210-211.
\textsuperscript{76} Sanders 1997, 133, 137.
one or more reasons, which are the basis of a judgment according to the prevailing standards. These can be for example acts likely to cause confusion, acts that discredit a competitor and acts that may mislead the public.

Generally intellectual property rights are considered to be immune from the intervention of anti-trust laws. Anti-trust courts have not intervened in enforcement activities, but that issue has been reformed to the intellectual property rights themselves. The problems are usually resolved by applying the protected subject matter, the scope of protection and the limitations of protection.

The refusal to grant a license to others is an essential element of IPRs. It allows the right’s owner the full potential to use the right. The idea of compulsory licensing is used very reluctantly, as it nullifies the right. Compulsory licensing can include an obligation to pay a licence fee to the rights holder or it can be royalty-free. There can be also an obligation to provide some particular information.

Under anti-trust and competition laws there has been developed the doctrine of essential facilities to balance the interests of property owners and their competitors.\(^7\)\(^7\) Also the scope of the substantive right has been reduced in order to exclude competitors. In the US there has been developed the doctrine of intellectual property misuse for the same purpose to avoid infringements. It is also possible to restrict the right to exclude others only if the exercise of the right does not overweigh after comparing it with other important interests in the special case.

The balancing of interests is needed especially, when new legislation is created or when individual practices are analysed. In network economies this can be important while a refusal to license may delay or stop the emergence of a standard and if the standard does not appear, consumers cannot benefit from the network. This leads to a development that new innovations appear too slowly and the cost of producing new innovations increase.

The issue of refusal to deal has been discussed in case law involving spare parts. One of the most famous is *Volvo v. Veng*, in which the EC court decided that intellectual property

\(^{77}\) See also Motta 2004, 66-68.
rights do not justify the refusal to sell spare parts in case it is not justified without the right. In the US the same issue has been discussed in the case *Image Technical Services Inc v. Eastman Kodak Co.*

In the U.S. compulsory licensing has been used as an anti-trust remedy. Sometimes the misuse doctrine has been used for the same purpose. In the US the fundamental doctrine is “the essential facilities doctrine”, which is used for balancing the effects of refusal to license intellectual property rights. In the basic form *per se* rule means that the refusal to license does not need any justification under the circumstances in concern. The first cases, in which the essential facilities doctrine was used, were *Terminal Railroad* and *Associated Press*. The cases discussed the unilateral refusal to deal under Section 2 of the Sherman Act. This doctrine has been developed in the case *MCI v AT & T*, in which the U.S. Seven Circuit Court presented a four-step test, whether access would be granted on the basis of the essential facilities doctrine. The four steps were:

1) The control of the essential facility by the monopolist.
2) A competitor’s inability to duplicate the essential facility.
3) The denial of the use of the facility to a competitor.
4) The feasibility of providing the facility.

The case law of the European Court of Justice did not the doctrine of the essential facilities develop as such. The Article 82 of the Treaty of European Union included a justification test. A “refusal to deal” did not itself constitute an abuse of a dominant position. Other factor like a denial to supply, which could effect so that a competitor is obliged out of the business, could form an abuse of a dominant position.

A famous case by ECJ concerning the factors of the essential facilities doctrine is *RTE & ITP v. Commission (Magill)*, in which a dominant firm, a broadcasting company, was behaving in exceptional circumstances like 1) the company had control of “indispensable” material where its refusal prevented a new product to come out to a market where it was expected 2) there was no justifications for the refusal and 3) the dominant company tried to hold a secondary market for itself and excluded all competition from the market.78

78 Rahnasto 2003, 140-147.
Strong patents can form technological blocks and ties. An example of this is the famous *United States v. Microsoft* –case, in which the company had bundled the Windows-system and Internet Explorer. This effected the competition in the explorer-market. So called cross-licensing, in which patents and technology are exchanged, the market power of the patent can increase so that it can effect to the competition. A territorial license can restrict competition in a certain area. Licensing agreements can include conditions, which restrict competition, for example restricting prices or setting extra fees after the patent has expired.79

The U.S. antitrust law rarely accepts denials to deal and refusals to share IP. However, the antitrust essential facilities doctrine means that if monopoly costs attributable to the exercise of IPRs are disproportionate to any perceived benefit, their use can be refused. ECJ and the Court of First Instance have shown this view in case *Microsoft v. Commission*. In the decision it was held that “a mere refusal on the part of a dominant party to license its IPRs does not constitute an abuse absent exceptional circumstances, but such circumstances may be present, when 1. the refusal relates to a product indispensable to the exercise of a particular activity on a neighbouring market 2. the refusal is of such a kind as to exclude any effective competition on that neighbouring market and 3. the refusal prevents the appearance of a new product for which there is potential consumer demand” Criticizers of this decision have emphasized that this approach decreases IP incentives and impedes long-run innovation.80

Hylton has analyzed on the basis of the case *United States v. Microsoft Corp.*, the essential facility. If that is efficient as the Windows operating system, the acts, which try to exclude access to that system should be analyzed under a specific intent standard as a default rule. It means that the plaintiff has to prove the specific intent. Balancing tests divide the burden on both parties. Hylton also emphasizes error costs meaningful for the decision. The meaning to shift the burden to the plaintiff is to minimize the costs of erroneous decisions, Hylton 2008.81

79 Oesch & Pihlajamaa 2003, 141-143.
80 Cotter 2008.
81 Hylton 2008.
An example from Finland is the Setec –case (A decision of the Finnish Competition Authority 5.1.1997, 580/61/95), in which a refusal to license a patent concerning car parking was not considered harmful. Setec had a patent to an electronical system for payments. Setec refused to license the right to use the system. The Finnish Competition Authority considered that Setec had reasonable grounds for this procedure.82

As the goals of IPRs and competition laws are different, conflicts are evident in individual cases. According to the Commission the main question is how much the competition policy should make an intervention to the exploitation of IPRs. However, competition law and IPRs should be considered complementary, as they have the same main aims encouraging innovation, industry and competition. The allocative efficiency can be achieved, if a balance between the right, the promotion of innovative actions and the width of the protection can be found. The dynamic efficiency means that no restrictions for the future innovative actions are set.83

A property rule and a liability rule describe the different economic considerations, which shape the patent regime. The patent system is based on a property rule, where the State gives the monopoly, which enables the proprietor to set the price for the use of the assets. This system is good from the economic point of view in case transaction costs are low, there are few parties, and the value of the asset is difficult to set. The legal entitlement to use of the asset is possible only after bargaining the property right.

If there are more parties and high transaction costs effect the bargaining process, a liability rule is better. The situation is assessed ex post to determine the correct amount of compensation. This happens easily, when an arbiter has to settle a dispute and set the value of the asset. In case property rule sets barriers of entry, liability rule can be better. However, despite of these views, any abuse of a dominant position can be considered to result from unfair competition.84

82 Haarmann 2014, 364.
83 Alkio & Wik 2004, 316-318.
84 Sanders 1997, 141-142,161.
3.1.1. Case Microsoft

Sun Microsystems argued in December 1998, that Microsoft denies to deliver information, which is necessary for it in order to be able to communicate with dominating Microsoft PC system. The Comission enlarged its investigations to Windows Media Player product in February 2000 after receiving information about Microsoft’s market behavior.

The prevailing Article 82 EC at that time denied the abuse of a dominant position. The Software Copyright Directive (91/250) from year 1991 contributed that approach. Interoperability can be defined as the ability to exchange information and mutually to use the information, which has been changed. It is allowed to use reverse engineering for interoperability purposes.

The previous cases concerning the abuse of a dominant position in the court practice are in line that if a company holding a dominant position in the markets denies to license its IPRs it is not considered an abuse, unless it causes harm to the neighbor markets, which do not get the indispensable information. That causes eliminating of competition on that market. There is demand for the product in the consumer market and the refusal prevents appearance of a new product. There is no objective justification for that.

Microsoft had a dominant position in PC operating systems market, because it had over 90 % market share. Microsoft has a high market share and a steady position in the market. Its only competitors are Apple and Linux. There are high barriers to entry. It is very expensive to build a corresponding system. It is not possible to deliver applications to the markets, which causes indirect harm to the network.

Sun´s arguments were that Microsoft maintains dominant position in the markets and Sun needs interoperability with Microsoft PC:s in order to be able to compete. Microsoft denies to allow demanded interoperability for Suns group servers with Windows PC:s. The operating systems of group servers are optimized for saving, printing and group and user administration. They are installed to cheaper servers. They are different that operating systems of other servers and their tasks.
The Commission sent statements to Microsoft on August 21st 2001 concerning the fact that it had been confirmed, that Microsoft sets obstacles to its competitors concerning its operation system. Microsoft had published its Windows 200 generation of PC:s and Sun operation systems argued that Microsoft had acted against the rules of fair competition in tying Windows Media Player and Windows PC System.

On 6\textsuperscript{th} August 2003 the Commission received further evidence both of denying cooperation and tying the products. The Commission sent a further statement to Microsoft. Microsoft answered to the arguments and an oral hearing was held from 12\textsuperscript{th} to 14\textsuperscript{th} November in 2003.

Microsoft argued on the following grounds: The action information is protected by IPR rights (patents, copyright and business secrets). There are other technical solutions in order to secure the interoperability. There is competition between the group servers for example Linux. The competitors cloned Microsoft´s products. The demands to open the operation system to other PC systems would cause harm to Microsoft´s innovation actions.\textsuperscript{85}

The Commission decided that Microsoft had breached the rules of fair competition by preventing competitors in group server markets of reaching essential information in order to be able to interoperate with Windows. It gave an order to Microsoft to reveal in 120 days of time period to reveal the essential information, which the competitors needed and to publish that information with reasonable terms. Microsoft was obliged to present a version of Windows, which does not include Windows Media Player.

The First Instance maintained the decision of the Commission from year 2004 and stated that Microsoft misused a dominant position and ordered €497 million fines of breaching the EC Treaty because of the misuse of a dominant position in markets (Article 82). Microsoft was guilty to that by delivering its PC operating systems to the group server systems and media player systems markets and by misusing its dominant position in those markets.

\textsuperscript{85} Kramler lecture 6.10.2009.
The grounds of the decision were that interoperability is important and computers do not operate separately. The definition is in conformity with the Software Copyright Directive. There are no choices to the information. Windows operating system is present in all client computers in companies, which means that non-Windows based group server is not able to continue marketing, if it does not get the essential information concerning interoperability. Microsoft was guilty for eliminating the efficient competition and the elimination can be indirect. This concerned the neighbour markets. This effected to the consumer markets because new products did not emerge to the markets.\textsuperscript{86}

3.1.2. Recent cases

\textit{Greek Lignite} is a “Case C-553/12, 17\textsuperscript{th} July, 2014”, concerning member state measures and abuse of dominance. EC had found that Greece had granted exclusive rights to exploit the cheap energy source lignite to the dominant energy company. The procedure infringed Arts. 106 (1) and 102 of the EC Treaty. The Commission held that these rights created an “inequality of opportunity” between operators on the wholesale electricity market.

The General Court annulled the decision and claimed that Commission had not shown how the company would abuse its dominant position. The General Court held that conferring exclusive rights and creating inequality of opportunity was not enough to show to what abuse the Greek State measure would lead.

ECJ overruled the General Court decision and stated that if a dominant company abuses its position or even if there is a risk that it abuses its position merely by exercising its rights, it constitutes a breach of Arts 106 (1) and 102 of the European Union Treaty. The dominant company was able to offer a cheaper price for base load electricity and thereby maintain its dominant position in the supply thereof, hindering new entrants to the market. For the Commission it is necessary to identify a potential or actual anti-competitive consequence liable to result from the right, which the state gave to the

\textsuperscript{86} https://fsfe.org/activities/ms-vs-eu/timeline.en.html
dominant company. It is enough to affect the structure of the market through unequal conditions of competition.

In Intel Case European Commission found that Intel had paid exclusivity rebates to original equipment manufacturers and a German retailer and paid original equipment manufacturers to restrict market access. General Court defined three categories of rebates

a) quantity rebates: rebates, which are linked solely to the volume of purchases made from the dominant undertaking. They are generally considered lawful
b) exclusive/quasi-exclusive rebates: rebates conditional upon the customer, who obtains all or most of its requirements from the dominant undertaking
c) rebates “falling within the third category”: other rebates, which may have a fidelity-building effect

Intel argued that the Commission should have considered all the circumstances to see if the rebates were actually capable of restricting competition. General Court considered that exclusivity rebates are “by their very nature” capable of restricting competition and making the access to the market difficult.

Most important was that the rebate included a “loyalty mechanism”. Intel’s payment was conditional on exclusivity or quasi-exclusivity. Intel’s argument that the rebates were applied only to certain segments, was rejected by a statement that any effect was considered enough.

In Bathroom Fittings Cartel cases, the General Court stated that a single infringement covering three markets does not relieve the Commission of its obligation to establish a distortion of competition on each of the markets.

In cases Siemens and Others, Mitsubishi and Toshiba argued that the General Court should consider not only that the infringement has a single objective, but it has to be complementary. However, the General Court did not consider the complementarity essential.

The European Court of Justice stated that, it was not essential to prove an overall plan or a plausible alternative explanation for Japanese companies not bidding in Europe (i.e.
barriers to entry) in the absence of documentary evidence of the infringement. The essential issue is whether there is sufficient evidence of an existence of an agreement.

In *Kone* cases, the European Court of Justice evaluated so called umbrella pricing, which means that companies that have not participated in a cartel may raise their prices following price increases caused by the cartel. So a purchaser from a third undertaking may sue the cartelists for the upward price effect. ECJ considered that it is a matter of national law to decide the rules and how far the “causal” link of damages continues.

If a company considers itself as a victim of umbrella pricing it is possible to claim compensation for loss caused by the cartel, if the cartel was liable to have the effect of umbrella pricing and those circumstances and specific aspects could not be “ignored” by cartel members.

In case *Cartes Bancaires*, Case C-67/13P, September 11th 2014 General Court considered that Cartes Bancaires system involved a “restriction by object”. The system meant, that banks, which did not do much card acquiring, either to pay a fee or to limit their card issuing activities. This was done in order to encourage network expansion. European Court of Justice found that the measures did not in themselves cause a sufficient degree of harm to competition. ECJ also confirmed that statements of intent are not sufficient to establish an anti-competitive object.

3.2. Licensing Agreements

A licensing agreement means that the owner of an industrial or a commercial right gives someone else a right to use an invention. This right is called a license. The licensee has to pay compensation for the licensor, which is called a royalty. The process of developing an invention has caused expenses to the licensor. The expenses of the licensing contract are only a minor part of it. The inventor usually does not have resources in order to start the production and one way to solve the problem is to sell the right the invention to someone or to make a licensing agreement with another company or start a joint venture for the

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87 Ratliff 2014.
production. It has been estimated by the Commission that only 20% of the technology transfer agreements are sales of IPRs and the rest are agreements of granting the license.

Companies in the area of high technology have been especially active in using licensing agreements, because they have to concentrate on research and development. There are new motives for these agreements like to form a new standard or to develop a package license. The aim can be to prevent collisions of patents or an abolishment of prevention patents.\(^8^8\)

Licensing agreements are considered useful from the point of view of free competition. Technology licenses promote spreading technical knowledge and improve effectiveness and competition. However, licensing agreements can include terms, which are harmful for competition and prevent competition. The parties try to make agreements, which include beneficial terms for them, but they can be harmful for others. That is why licensing agreements have to be considered also from the viewpoint of third parties and the general interest. It can cause a lot of expenses to clarify the effects of competition law.

The reason why also the general interest has to be considered is due to the norms of national law and also due to EU regulation. The competition authorities can set denials, which can have fines as an addition. The Finnish national competition law sets a denial, to which can be added a fee or a fine. The agreement can be considered as incompetent or a compensation can be demanded.\(^8^9\)

Licensing agreements can have positive effects to competition, but most likely they will have harmful effects to competition, when one of the parties or both the parties have market power. Negative effects relate to restriction of competing technologies (inter-technology competition), but also to those using same technology (intra-technology competition).

When evaluating the harmful effects of a licensing agreement, it has to be considered, whether the effects had been also without the licensing contract. The harmful effects can

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\(^8^8\) Leivo et al., 2012, 601-602
\(^8^9\) Oesch & Pihlajamaa, 2014, 195-196.
be the increased risk of a collusion or preventing other companies entering the market or function in the market. These agreements can be sham agreements, which do not aim to transfer of technology, but use the licensing agreement in order to cover the real aim, which is to restrict production or raising prices. The licensing agreement can be also a way of creating a cartel or a silent collusion. Parties having a lot of market power can restrict production or raise prices by this kind of behaviour. Licensing agreements can also prevent the competitors from entering markets or enlargening their production.

Competition among the licensees is not necessarily harmful within the same technology. However, it has to be evaluated, whether the contract restricts competition that would exist in the absence of contractual restraints. Commission has also lined that some licensing agreements would not exist if they didn´t include a competition restriction. In that case the competition restraint is considered essential and it is not breaching the Article 101 point 1. The evaluation is objective, but it is not unambiguous.

In the US it is not considered necessary that those having immaterial rights create competition between the licensees. They think that restricting the functions of licensees does not diminish competition compared to the situation that the licensing agreement does not exist. Licensing agreements are not considered harmful only because they do not increase competition.90

Vesala has approached the theme of licensing future innovations as threats to innovation in his dissertation thesis. He points that sometimes the conditions of licensing may undermine innovators incentives to innovate. The conditions can affect the conditions for innovating in markets or even in entire sectors. The balance, which has been struck originally in the IP right can be altered in the licensing agreement.

Especially if the licensing agreement undermines the subsequent IPRs (sharing rights, limited royalties), it is likely that it leads to limited incentives to innovate. Buyer power can undermine incentives to innovate, but also collusion among competing innovators (e.g. grant-backs) and vertical restraints e.g. grant-backs, which eliminate licensee incentives to innovate.

90 Leivo et al., 2012, 605-609.
On one hand licensing agreements may undermine incentives to innovate, but on the other hand they may function in an opposite way. For instance a grant-back may allow the party subject to it to access licensor’s knowledge and IPRs at lower cost and risk. In some cases some conditions can be seen as solutions to imperfections of IPRs. The challenge of competition law is to find the anti-competitive conditions and whether those conditions can be justified by IP or some other inefficiencies.

3.3. EU Competition Policy concerning Licensing Agreements

Commission has announced the first information about patents in December 1962. At first competition restrictions were allowed widely. In 1970s the Commission narrowed its view to agreements, which give a monopoly area to a licensee. In 1982 it gave a court decision called Nungesser. If the restriction means only a commitment not to grant other licenses to a same area and not to compete in the same area with the licensee, the agreement is not considered restricting article 101 point 1. So called closed licenses, which abolish competition between parallel importers or licensees are considered as breaching Article 101 point 1.

The first block exemption regulation concerning patents was given in 1984. These were compensated in 1996 with block exemption regulation concerning transfer of technology. This regulation was applied to agreements between two companies concerning patents and know-how and to mixed agreements concerning patents and know-how. A basic idea is that a license for production is allowed, even though it restricted competition. Joint ventures concerning license agreements are outside the application of the regulation. The regulation was not applicable to patent and know-how pools and not to cross-licensing between competitors, if they do not have regional restrictions. Terms, which deny competition totally are denied.91

Next block exemption regulation came into force on 1st May 2004. The applicability of this regulation was wider than before, but it was applicable only to licensing agreements

91 Ojala 2011, 188.
under certain market shares. Market shares as evaluation criteria is not as clear as with horizontal and vertical restraints. The prices of products developed from innovations can be very changing during an agreement period. The guidelines of the Commission include problems of interpretation, which means that the self-evaluation is not easy.  

The aim of the 2004 regulation was to unify the horizontal and vertical cooperation agreements with the TTBER guidelines taking the special features of the licensing agreements into consideration. This regulation included only a black list. The exemption covers then all actions not left outside the TTBER. The new regulation covered all technology transfer agreements concerning the production of goods and services. The regulation has been applied to patents, know-how and to software programmes.

The new regulation separates licensing between competitors and non-competitors. This is important, because same black list is not applicable to both of them. Competitors face more often problems of competition. The guidelines give information about enforcement policies concerning patent pools and copyright licensing. The application area is technology licensing agreements, in which the licensor gives the permission to use the licensed technology to production of goods and services. Research and development licensing agreements are outside the application scope of the regulation.

The market share of the company in concern is essential, when considering whether the regulation is applicable or not. Then it is important, whether the companies are competitors or whether they are producing products compensating each other. The relevant market shares in this regulation were 20 and 30. If competitors make technology transfer licensing agreements in relevant markets, which agreements do not include black list restrictions, they are within the scope of application of the TTBER. If the participant companies as themselves do not have a market share over 30 %, the agreements between non-competitors, not including black list restrictions are within the scope of application of the TTBER.  

92 Vesala 2015, 51, 52.
93 Ojala 2011, 189, 199.
It is important to write exact cartel acts in order to avoid holes in law, which enable to get around the rules of law with complex settlement agreements. The law has to be clear and it has to be tied to the actions like to agreements in order to have predictability. The negative side of the strict rules are that they cover also situations, which would not need regulation. For instance some import and export regulations are harmless, if competition in the relevant markets functions. This concerns vertical agreements, but also horizontal agreements, especially to the cooperation of companies in R&D. If the markets are very concentrated, it is important to check the agreements by competition authorities. The important features are the market force of companies, the character of a good, the need to offer extra services and invest to the delivery network as well as the needs of consumers.

The main ideology behind the TTBER regulation is to have an economical approach instead of regulation of agreement terms. The prevailing regulation includes safe harbors depending on the market shares. Despite the black list terms, companies are allowed to choose the content of the agreements. If the relevant market share procents are exceeded, the TTBER regulations do not apply. However, agreements are allowed, if according to the Guidelines the analysis leads to a situation, in which Article 101, 3 will be applied. Companies evaluate the situation by themselves, but competition authorities can control the behaviour later and is not tied to the decision of the company.

Market shares are considered, as they are a clear approach to a competition situation. However, in some cases there are uncertainties like relevant markets of goods, the evaluation of the consequences of competition and the benefits and disadvantages. Other relevant factors are the choices of customers and the hindrance of entrance. The ideology behind the rules has been to set the level of intervention as economically as possible. Small agreements are outside the scope of the application of the regulation. Clear restrictions are denies. Other agreements are evaluated in relation to the growth of market shares. The grey list is complicated, as it is difficult to find relevant criteria for it.

Optimal regulation could be the one denying the entrance to the market or raising the price level. Restrictions concerning actions of parties would be allowed, if markets are functioning and not if the markets are not functioning. That kind of regulation would

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make it possible to scrutinize the competition situation case by case. The constitutive elements have to be tied to a behavioral norm or other norm, which can be clarified easily.95

3.4. The Evaluation of Licensing Agreements

The new regulation denies grant-back term licenses for the improvements the licensee has done. For example it is denied for the licensor to give an exclusive right to copy, change and publish the improvements made by the licensee. In IT standard terms 2000 to IT 2010 terms it was typical to include this kind of terms.

The licensor is not allowed to end the license, even though the licensee tries to invalidate the patent. The argument can be settled as follows: The disagreement is finished and it is agreed that no further claims will be allowed. According to the new TTBER rules the offended can raise a claim to invalidate the patent whenever; the essential but denied part of the agreement is the offender does not do that (TTBER 5.1 (b)). The licensor might agree a non-refundable pre-payment or short fixed license periods and a high royalty, which includes the risk that the other party raises a claim.

If the licensor is a small company, it is very demanding to perform this kind of contract negotiations and legal help would be recommended, if it is possible to afford. The new regulation expects that the licensee has the best opportunity to evaluate, whether the patent is valid. There is a freedom to realize at any time during the license period, that the license is not valid. However, it could be supposed that the licensee had an obligation to evaluate this already beforehand. In case the licensor is a small company and the licensee a large company, it should be demanded already beforehand, as the resources are totally different. It would be also expected that the competitors had the real knowledge, know-how and resources to invalidate the competitor’s patent. It is possible that the licensee wants to count on the license and is unwilling to test the validity of it.

Here are some practical examples of R&D projects in which TTBER regulation has to be taken into concern. First there is a company called Biosup, which has invented and

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95 Kuoppamäki 2012, 158-159.
patented a structure of a new medicine. The medicine is the only one for the disease in concern. The market share will be 100 %. Because it has no recourses for R&D it has to make a cooperation project with a medical company called Bigmed. In the cooperation project the staff of both companies work together and and make inventions together. Biosup grants an exclusive license to its patent and knowhow and Bigmed is responsible for the patent process and its expenses.

The patents of further inventions belong to Bigmed. Biosup wanted an exclusive grant-back license to all further development, but Bigmed rejected it as being against TTBER (5.1. (a)) In order to protect its royalties Biosup wanted the license with a term, that Bigmed cannot claim Biosup’s patent. Bigmed has rejected it as being against TTBER (5.1. (b)). Biosup and Bigmed negotiate and finally Biosup receives a high royalty 25 % as a compromise of the new terms, min. 100 K/y.

The sale starts successfully after one year of R&D. The Biosup runs out of money, as it has only gained the minimum royalty 100K/y. Bigmed tries to invalidate the patent, as it has found a publication, which gives evidence of diminishing the newness of the patent. Bigmed stops to pay royalty, as it has raised the claim. Biosup has no money to defend its patent, because the royalty from Bigmed was the only income it had. Biosup cannot end the license, because the term was rejected in the agreement negotiations. Biosup raises a claim of Biomeg infringing the patent. The agreement suggestion is lowering the royalty procent from 25 to 5. Bigmed does not accept it, because it is denied as a “Settlement Reverse Payment”, which could be denied (Guidelines 2.7). Biosup will end up into banktruptcy, because of lack of money. Bigmed buys the patent from the bankruptcy assets at a low price and cancels the claim to invalidate the patent. Bigmed continues selling the protected medicine. It is probable that Biosup is a small company, which has no resources and it tries to manage, but the company with resources Bigmed is able to use its resources against Biosup and win the case, legally.

The EU Guidelines deny that companies agree on pay-for-delay, which means that the licensor pays some extra for the licensee to agree on more restricted terms than it otherwise had accepted. However, it is extremely difficult to compare terms accepted in order to avoid claims with other terms not including a dispute. The licensee has to think about its strategy accurately. After the claim has been raised, any kind of an agreement
can be against of competition rules in any kind of technology business, not only pharmaceutical business. It is reasonable to agree well beforehand the risk of a dispute realizes. All agreements to avoid a dispute are doubtful\textsuperscript{96}.

3.5. Changes in Block Exemption Regulation concerning Transfer of Technology

The Commission accepted on 21\textsuperscript{st} March 2014 the new Technology Transfer Block Exemption Regulation. These regulations concern the licensing of patents, knowledge and computer software among others.

These competition regulations include Guidelines and TTBER. The essential parts of TTBER are 1) so called Black List, which includes basically those agreement terms, which are against competition law 2) Grey List, which includes terms, which demand evaluation case by case in order to be accepted 3) Safe Harbour, created by the regulation. Those licensing agreements are in harmony with the EU competition law, without any detailed evaluation.

The Commission organized a wide hearing before accepting the new regulations. The feedback from the market was mostly supportive. The new regulation is pretty much in conformity with the previous regulation and the Commission considers that in most cases licensing technology promotes competition. New regulation includes some changes, especially concerning patents, knowledge and software licensing, which need to be taken into consideration. The Commission has strengthened regulation concerning some agreement terms, which are now pretty widely used\textsuperscript{97}.

The prevailing background behind the TTBER is that the IPRs should not prevent healthy competition. The balance between the two aspects is essential in order to achieve healthy competition environment and despite of that allow companies to develop their marketing in protected areas, when needed.

\textsuperscript{96} Valtonen, 2013.
\textsuperscript{97} Huimala 2013.
These areas of law have some common goals. The goal of IPRs is to promote innovative actions and the goal of competition law is to secure static and dynamic competition. IPRs are like other possession rights in many ways. It is possible to sell them, hire them and license them. However, possession of an IPR does not bring market power as such. The differentiating features of IPRs compared to other possession rights are that the protected information is “a public right”, IPR does not directly prevent others from using it and the possibilities of using it. The borders of IPRs are often more difficult to define than with other possession rights. Often the right is applied as wide as possible in order to achieve the maximum benefit of it.

The application of competition law is done in IPR contracts in the same way as in other contracts concerning possession rights. However, in the application of IPRs the special features outlined by courts and the regulation of the Commission have to be taken into concern.

The background for competition law in Finland are the following regulations:

- TFEU 101(1) Art. and Competition law 5 §
  the contracts between entrepreneurs, which aim to restrict competition or the consequence of them is the restriction of competition are denied
- TFEU 101(3) Art. and Competition law 6 §
  an exception of the restriction, if the preconditions are fulfilled
- TFEU 102 Art. and Competition law 7 §
  the denial to misuse dominant market position

The consequences of breaching the regulation is that the licensing agreement or a term of it is considered invalid or an administrative consequence can be max 10 % of the turnover. For example in the case Lundbeck the reverse payment agreement was 93 million euros (19.6.2013). It is also possible to demand compensation.

Companies were obliged to announce contracts including prohibited competition restrictions to the EU Commission until year 2004. This caused a flow of announcements. Block exemption regulation was set as a mean of controlling the flow. Patent licensing
regulation was set in 1984 (2349), Licensing of knowledge management in 1989 (556) and transfer of technology in 1996 (250).

The self-evaluation procedure compensated the announcement procedure in 2004. The regulation concerning the Transfer of Technology is 772/2004 and the Guidelines of the transfer of technology also from 2004. The regulation was directly implemented in member countries. The guidelines were binding only for the EU commission. New regulation is from 1.5.2014 and it will be in force until 2026. There was a transfer period, which finished 30.4.2015.

The regulation concerning the transfer of technology is applied to licensing agreements between two parties. Technology is understood here as meaning patents, utility models, copyright to computer programs etc. The regulation concerns licensing of technology in order to make possible the production of the products in the agreement. There are certain market share limits in the regulation as well as terms of the the Black List and the Grey List.

The market share limits are following:
The joint market share of competitors can be max 20% of the relevant technology and product markets. The market shares of non-competitors cannot exceed more than 30% of the relevant technology. The competitors of technology markets are companies licensing technologies, which can compensate each other. The competitors in product markets are companies both in the same product and geographic markets.

The regulation includes a Black List for licensing agreements between competitors and non-competitors. Severe restrictions for competition are:
- restrictions concerning prices
- division of markets or areas
- the obligation of a licensee not to use own technology in agreements between competitors

However there are several exceptions between non-competitors.

The new competition rules include detailed guidance of licensing agreements concerning agreed and denied terms. It is very difficult to apply the Block Exemption Regulation
concerning the Transfer of Technology. However, it cannot be ignored either. The regulation gives rules for interpretation. In every case it has to be evaluated whether the licensing agreement restricts competition and whether the agreement will fall in the protection of Block Exemption Regulation and will the preconditions be fulfilled in this special case or not.

There are some minor changes to the market share limits:
The limit of 20% will be applied also, when the licensee owns a compensating technology. The technology market of the market share means the effect of the technology in the product market. Some narrowing of application can be done in Software-licensing, in which the licensee produces copies for sale.

The list of severe restrictions and the exemptions of them will remain nearly as such they have been. In licensing agreements between non-competitors it is not possible to deny passive sale for two years in the district of other licensees.

The changes for the grey list are as follows:
Formely the licensor could notice the licensing agreement, if the licensee sues the qualification of the IP-right. After the changes the non-challenge terms and exclusive grant-back terms are always excluded from the application of the regulation.

An exclusive grant-back term means a term in an agreement, which denies the licensee to use an improvement made to the licensed technology or a new application. The licensee gets an exclusive right to them. The former regulation included grant-back terms only, when they were improvements, which were impossible to use without breaking the licensed technology. The new regulation protects only non-exclusive grant-back terms.

The new guidelines of the Commission concerning the agreements between competitors, which lead the licensee to postpone entering the market or gives a restricted possibility to enter the market, can be denied.

98 http://www.castren.fi/oikeudellisetuutiset
The new TTBER has a stricter approach to non-challenge terms. The right to terminate a licensing agreement in disagreement situations concerns only one-sided licenses and the party to raise a claim has to be the licensee.

Non-challenge terms are allowed in bona fide licensing agreements. However, in certain situations they restrict competition especially, if the licensee knows or it should know that the licensed IP-rights do not fulfil the regulation needed for protection.

There is a new regulation for a safe harbour for the transfer of technology with so called technology pools. It is possible to create a standard and a pool freely. Protection actions are expected to ensure that the pool includes only essential technologies. No sensitive information is transformed more than is needed through the pool. Technology is licensed to the pool non-exclusively. The licensors and licensees can freely sue the qualification and essentiality of the pooled technologies. They can develop freely products and technologies.99

Some restrictions of sales, which belong to the protection of TTBER, are considered more serious restrictions of competition in the new regulation.

The new guidelines specify the directions of settlement agreements. Terms, which concern licensing, do not deny competition as such. For instance pay-for restriction or certain cross-licensing and non-challenge terms are among them. The new guidelines include regulation concerning new pools of technology. The foundation of a technology pool and action as well as the licensing inward or outward are according to the EU competition rules, presupposing that the seven preconditions in the guidelines are fulfilled.

Terms concerning the field of use are not grounds for exemption in new TTBER regulations. This does not mean tighter regulations, because the field of use restrictions are not considered as an agreement dividing markets or customers.\textsuperscript{100}

Technology licensing agreements are mainly agreements, with which technology is transferred (among others patents, know-how, or user’s rights of software programmes) by licensing agreements. Many agreements concerning the transfer of technology do not belong to the application scope of Article 101. Those agreements are denied only, if the goal of them is to restrict competition or the consequence of them are the restrictions of competition between technologies or inside them. The evaluation has to be done concerning the real facts of the competition condition. The probable consequences of the agreement have to be taken into consideration between companies, which use competing technologies as well as same technologies.

Technology transfer agreements can increase economical effectivity for instance by unifying competing technologies as well as new assets. This kind of arrangements bring improved or new products to the markets. The production can be done maybe cost-effectively and the prices get lower. The essential element is that a significant part of the effectivity has to be transferred to the consumers. Restrictions can be used only if they are necessary and they do not have the loss of competitors in the markets as a consequence\textsuperscript{101}.

3.6. Impacts of the Changes to Small and Medium Size Enterprises

The new TTBER regulation is treating different companies in different ways. Defining a market is very difficult, especially for small companies. Markets and market shares change during a contract period. It has to be followed at least two years.

The new regulation has to be taken into consideration. It means that the company cannot probably use same standard terms in all contracts, because in some contracts or parts of

\textsuperscript{100} \url{http://www.castren.fi/oikeudellisetuutiset}
\textsuperscript{101} Kuoppamäki 2012, 164-165.
them the market share will be fulfilled and in some not. It has to be decided, whether to stay in the area, where there are no obligations.

It can be challenging to evaluate the agreements case by case. It needs a lot of expertise, which can be challenging for big companies, but especially for small companies. Reorganization of company structures means that cooperators can become competitors and small companies can become large companies. It is possible to continue with an old contract as long as one does not change it.

Small companies have more difficulties in coping with the contract negotiations. The large companies have stronger position in negotiations. Big companies have also better resources to get know-how about the TTBER regulation and to clarify their content. It demands a lot of knowledge to be able to use the possibilities of the TTBER regulation and plan alternative choices in contract negotiations.

In practice a company should act as everything would be denied and to avoid uncertain terms. It is too expensive to evaluate every contract case-by-case, when the interest of the contact is considered. It is reasonable to evaluate only the most significant and profitable contracts case-by-case.

When analyzing, which IPRs are part of the new regulation the concept of technology has to be defined.

It means know-how and following rights or the combination of them including applications for them and registration applications. They are as follows:

a. patents
b. utility models
c. design rights
d. semiconductors’ circuit models
e. additional certificates for medicines
f. plant refining rights and
g. software programmes’ copyrights
An agreement transferring technology means technology licensing agreements, which include terms, which concern transferring other IPRs or licensing know-how to the licensee. The IPRs include industrial rights, especially patents, trademarks, copyrights and neighbouring rights. In practice the licensor can allow the licensee to use its trademark in products, which include the licensed technology. This means that if the licensee is a small company, it has to negotiate the transfer of technology agreement so, that it is allowed to use the relevant technology. The TTBER rules are not applicable to copyrights without the copyrights of software programmes.102

Patent pools are arrangements, in which patents of different parties are gathered together for cross-licensing. It can be a contract with many parties and a separate company with its own bodies. They relate to standards by which the essential standards for a patent are licensed to those interested. The idea of patent pools is to spread licensed technology and to gather license fees of the technology in concern. Patent pools can be sometimes considered as cartels. Interchangeable patent pools can form a price cartel. It is possible that patent pools can exclude alternative technologies from the markets.

Companies leave themselves outside of the patent pools, when they expect to get better terms in bilateral negotiations outside the pool. Then it is not relevant to compare the terms of the negotiations of the pool to the bilateral negotiations. In case Microsoft v. Motorola the court stated that the license fees paid to the patent pool can be viewed as examples. Patent pools are not standards of the fees.

Patent pools are not considered as harmful concerning competition. They are seen as business as usual. In the new regulation it is possible to create a safe harbor to patent pools. It is possible to create a standard and a pool freely. All parties interested should be part of the arrangement.103

Patent pools seem to be an opportunity for SMEs to be part of R&D processes and to be able to get access to new technologies. However, it depends on the resources and technology used in the company how effective they can be.

102 Valtonen 2013.
103 Vuorinen 2013.
Protection actions are expected to ensure that the pool includes only essential technologies. No sensitive information is transformed more than is needed through the pool. Technology is licensed to the pool non-exclusively. The licensors and licensees can freely sue the qualification and essentiality of the pooled technologies. They can develop freely products and technologies.

The ministry of employment and economy in Finland made a report of the needs of change and experiences of the competition regulation concerning technology agreements in 2010. Some major companies, law offices and the University of Helsinki were asked about experiences of competition regulation. The theme of the survey was to find out how useful the competition regulation is concerning agreement evaluation.

The TTBER regulation was considered complex and hard to understand. It is especially hard to define technology markets and market shares, when considering new markets and innovation competition. Some questioned technology market as indicators as such. In reality the focus of companies in avoiding severe competition restrictions, i.e. black list. Agreements are not evaluated continuously, only in in connection with mergers and claims.

R&D agreements include many partners and it is difficult to know whether the partners are competitors and how this effects to the market definition. It is uncertain, when licensing agreement prevents using R&D regulation. Non-challenge terms were considered problematic in relation to TTBER regulation. They need case by case evaluation.

TTBER regulation was considered complex as such as well as the severity of non-challenge terms. The complex regulation can prevent useful cooperation in some cases because of a fear of competition regulation risk. The complexity of the regulation causes uncertainty between agreement parties.

Agreements are made with the priority of commercial interests and not competition law. When the parties are aware of TTBER regulation, they can be very cautious and obey severe regulation in order to avoid uncertainties. It is not always clear how relevant markets are defined. In European context it is possible to anticipate market behavior somehow, but the further the legislation is the harder it is to imagine the consequences. The competition culture, content of competition legislation and execution of the legislation varies, which makes the evaluation difficult. \(^{105}\)

4. THE ELEMENTS OF EVALUATING LICENSING AGREEMENTS

4.1. The Value of Intellectual Property Rights

Companies invest in innovation by R&D expenditures, patent publications and trademark applications. There has been research concerning, whether the market valuation of innovative activities vary in different companies. In case an economy were perfectly competitive and markets would have perfect information the valuation of innovative activities would be equalized at the margin across companies.\(^{106}\)

However, competitive pressures vary within the economy. The nature of them relates to the issue of “appropriability”, which means the ability of a company to capture the benefits of an innovation. It is important for a company to be capable to increase appropriability and lessen competition. Competitive pressure also depends on, whether rival companies can gain access to critical inputs, such as skilled labour or entrepreneurship. If only certain kind of entrepreneurs have the critical knowledge of a certain industry in which they are able to use existing technology it is possible to gain supernormal profits. However, in a dynamic economy there is a permanent disequilibrium profitability differences. It follows that perfect competition in an economy is a very unlikely phenomenon. Stock markets may also have imperfect knowledge of the likely returns to innovative activities.\(^{107}\)

4.2. Monopoly vs. the Freedom of Competition: IPR View before and after the Changes

It has been acknowledged that the grant of an exclusive right for a limited period of time to the inventor to exploit the invention is necessary for investments in R&D, innovation and imitation. The licensing of IPRs helps the process of exploitation of innovations in situations, where the inventor has insufficient rights for exploiting the invention himself.\(^{108}\)

On the other hand, in the global markets this is the only way to exploit innovations

\(^{106}\) Greenhalgh & Rogers 2004, 2.
\(^{107}\) Ibid., 2-3.
\(^{108}\) Anderman 1998, 4-7.
effectively. Inventors do not have the resources to develop modern products without the resources and networks of global companies. The licensing processes in the global markets demand profound knowledge of their legal use, which requires legal aid. This kind of legal aid is not commonly included in the insurance policies.

A licensing process can be various with multiple partners. Nowadays it is common to have companies, research centers and universities as parties of an R&D project. Different parties have different resources and interests concerning the results of the project. Funding, especially public funding brings its own influence to the projects. Monitoring IPRs and licensing are essential elements of this kind of projects. Licensing agreements have to be strictly defined concerning the rights of further development, production, import, testing, sub-licensing etc. However, if any restrictions concerning certain clients will be included, it is important to be aware of the effects to the competition. The competition regulations of EU are applied to all agreements between companies, which can have effect to the trade between member countries. A statement prohibiting the licensee to product or market products compensating the product of the licensing agreement are generally allowed.

It is important to know whether companies are real or possible competitors to define their relation in competition. If companies function in the same product or technology markets, they are competitors in those markets. Parties of an agreement are possible competitors, if they are likely to do the necessary investments to achieve the markets in concern without an agreement. The EU Commission has outlined that parties are potential competitors also when the licensee produces products with a competing technology in other geographical markets.

However, most legal systems monitor the use of IPRs considering their competition policies. EC competition policy has been designed and applied so that the purpose is to minimize its interference to the exploitation of IPRs and their use in innovation policies while pursuing the goals of competition policies. The EC Treaty and its interpretation by the Community Courts and the European Commission have shaped the balance between competition law and IPRs. This has happened within the framework of Articles 81 and 82

110 Alkio & Wik 2004, 344-345.
111 Cornish & Llewelyn 2003.
And a merger control regulation, which was added to the competition policy measures in 1989. Also the new Articles 101 and 102 have been applied later.

IPRs are not necessary monopolies as long as there are adequate substitutes for them. In certain situations they are beneficial for competition. For instance if the licensor and the licensee are not existing competitors or if the licensor tries to “tying-in” the sale of non-patented products to patented products or prevents third parties entering product markets which are dependent upon that IPR.

A famous case concerning the reconciliation between IPRs and the competition rules has been established in Consten Grundig v. Commission. A German manufacturer Grundig and a French distributor had made an agreement, in which Consten was allowed to register the Grundig trade mark, GINT, in France. Consten used the trade mark to stop other Grundig appliances to be sold in the French market by another French distributor UNEF, which appealed to the Commission. The Commission’s decision was upheld by the European Court of Justice (ECJ). The ECJ said that IPRs cannot be used to frustrate the rules of competition law, and the injunction does not affect to the grant, but only limits its exercise under Article 85(1).

These principles were reaffirmed in the case of Parke Davis v. Probel. The issue in this case was whether the Articles 85 and 86 limit the use of a patent and prevent the importation of an antibiotic product from Italy to Holland. The product had been manufactured in Italy and there was no consent of the Dutch patentee. The ECJ ruled that the patent could be used to block the import. It used the expression that merely the grant of a patent is an expression of a legal status granted by a member state. The exercise of the rights does not itself fall under the Articles 85(1) in the absence of any agreement, decision or practice prohibited by the provision or 86 in the absence of a dominant position.

The ECJ marked in these cases three legal categories in the interface between EC competition law and IPRs. The first was the “existence”, which was the authority of member states to determine the conditions for granting IPRs. The second category was “permitted forms of exercise” of IPRs. The third category was “prohibited forms of exercise”, which was defined by the prohibitions in Articles 85 and 86.
European Union competition policy has different objectives from those of USA and Japan. Articles 85 and 86 provide the framework for the regulation of IPRs. The main principles are to maintain “effective competition”, “fair competition” especially concerning small and medium sized businesses and “to integrate the individual national markets of the member states into a single market”.

The ECJ has defined the concept of an effective competition in case Continental Can v. Commission. The markets should have a competitive structure. This means that if the structure of a market is competitive, this will affect the conduct of companies on that market as well as their economic performance. Even though the economists have criticized this approach, the court has not abandoned it.

The concept of an effective competition means that it is possible to regulate the forces of demand and supply on markets by competition rules so that the process of “workable competition” continues. The first element workable competition refers to a degree of competition where there is “allocative efficiency”. The prize mechanism works so that producers produce the products that consumers want. The second element is “productive efficiency” which presupposes that the production happens at near optimum costs because of other producers causing competition by driving down prizes close to costs. The third element is that workable competition produces “innovative efficiency”. The producers respond to the pressures of competition by seeking to innovate as well as examining means of lowering productive costs by using existing technology. The definition of the concept of competition has not taken into account the value of size or monopoly, which are often discussed.

The goal of fair competition refers especially to smaller and medium sized companies so that they are not driven out from markets by illegitimate means, which are not in relation to business efficiency or innovation. This applies to market dominance, but is also relevant to cartels and market sharing agreements.

The goal of integration means that the national markets should be integrated to the common market. In case Consten Grundig v. Commission the Court prohibited creating a separate national market within the community by creating an isolated market in France for Grundig products. The idea is to support intra-brand competition and interstate trade.
The Commission was allowed to give an exemption on the Article 81(3) of the restrictions of competitions. It shaped the rules of competition by many decisions. These basic principles have been shaped in 1st May 2004, when 10 new countries joined the European Union. The goal of the reform (1.5.2004) was firstly a dispersed system for granting exemptions. Means were the following: The exemption by commission on the Article 81(3), The so-called announcement procedure on the Article 81(3) was finished. The national authorities and courts were allowed to apply the Article 81(3). The ex post control was presented, which meant that actions can be focused only to agreements or practices, which infringe the Article 81 on the whole.

Nowadays the focus of the work of the Commission is in severe infringements of competition like cartels and so it leads the competition politics of the Union. The Commission has the security in business life and the harmonization of the rules and their application as a goal of its work. It can still take a case from a national authority. The national authorities are bound to avoid conflicts with the Commission.

According to the new system companies have to evaluate their agreements and decide whether they are void or there exists restricted rules of competition according to the Article 81(3).112

National competition authorities have rights to investigate the infringements of fair competition. Minor infringements of fair competition are not the focus of investigation and the companies cannot get a security for a competitive action beforehand. This causes more cases to the court. As only major infringements are the focus of investigations, cartels have become important for investigation and the companies revealing cartels may avoid fines. Mergers are announced to the Commission only if the combined exchange is over 350 million euros.113

The Supreme Court of USA has shaped the relationship between antitrust and IPRs in the decision *Illinois Tool Works Inc v. Independent Ink, Ink*. In that case the Court led by Chief

112 Fletcher 2004.
113 Kauppalehti 7.7.2006.
Judge John Roberts said that “the mere fact that a tying product is patented does not support ... a presumption ... of market power.” In the case *Leegin Creative Leather Products, Inc. v. PSKS, Inc.* the doctrine of *per se* illegality with a holding that resale price maintenance has to be judged by the rule of reason. Also in case *Texaco Inc. v. Dagher* a joint venture was not *per se* illegal as a horizontal price fixing agreement. This is considered as an investigation how antitrust policy is looked from the point of view of IPRs.

In these cases competition is restrained with IPRs. However, in doing so, they open markets to increased competition. Some principles can be drawn from these cases. Patent policy emphasizes the need for new knowledge. When progress is wanted by promoting innovation, there has to balance the benefits of patent rights to exclude competitors against the knowledge, which is needed for competition by innovation. Also the internal competition policies, which work in the area of patent right have to be taken into account. These cases show that there is discontinuity in competition decisions.\(^\text{114}\)

All this shows that competition law and IPRs are complementary and they aim to the same direction: promoting competition and social welfare. It is presumed that there is no structural or essential conflict between them, differences exist only in cases where it should be defined to what extent competition law should interfere with the IPRs.

Patents have expanded in the scope of protection. Patentable subject matter has expanded as an example business methods and computer software. Secondly there is a shift from the protection of machines to the exploitation of technology as a product like biotechnology, in which inventions are applied as a technology. Thirdly patents protect relatively small and incremental applications of know-how. Trivial patents only waste the time and money of innovators.

There can be seen so called “patent thickets” as an example that an industry representative has claimed that there are more than 90 000 microprocessor related patents, which are held by more than 10 000 patent holders. This may cause unintentional patent infringements and impede innovation and competition. A good balance between the initial innovator and the follow-on innovators requires great care from legislators. The risks of free-riding have

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\(^{\text{114}}\) Peritz 2008.
strengthened the strong property rule as a standard solution from the legislators. This has helped the initial innovators, but decreased the possibilities of subsequent innovators. This has also caused the tragedy of “anticommons”, which means the underuse of IPRs, because of the amount of too many IPR holders. These patent minefields are detrimental to innovation and competition.

However, the basic doctrine between competition law and IPRs does not take into account the qualitative and quantitative changes in the development of IPRs. The leveraging of IPRs has become a norm, as innovations and IPRs are used not in the traditional serial model, but simultaneously in networks. This means that the size of a company is not that important. There is a lot of exchange of knowledge between large-scale companies and new companies in advancing technology. All this causes a lot of bargaining of IPRs and the assets that embody them. This demands a lot of bilateral and multilateral private agreements.

The institutions that deal with each other on a regular basis have developed patent pools to make easier patent bundling and the bargaining of them. It is an easier way of reaching patents from different owners and saves transaction costs. Even the TTBER recognizes the benefits of pooling and they are seen as a normal part of the innovation process.\(^\text{115}\) They are not considered competition restraints anymore. Also the US Antitrust Guidelines for the Licensing of Intellectual Property consider pooling arrangements procompetitive.\(^\text{116}\)

The standardizing organizations have developed ways how the parties of a licensing agreement can agree beforehand the terms of the licensed technology. The aim is to optimize the benefits of standardization. The risk in those arrangements is that they cause denied restrictions of competition. However, it is difficult to give instructions about allowed arrangements. Sometimes it is possible to justify the arrangement because of effectivity reasons or in order to avoid the negative effects of market power (Article 101).\(^\text{117}\)

In recent development it has to be noted that licensing conditions can sometimes undermine the incentives to innovate. As explained in Chapter 3.4. the balance between the licensor

\(^{115}\) The Commission states that the pooling of rights will promote technical progress, help to obtain a license for all necessary patents rapidly, and lower transactions costs. These measures will also benefit consumers. (IP/00/1135, 9.10.2000).

\(^{116}\) Vuorinen 2005, 326.

\(^{117}\) Vesala 2015, 203-204.
and licensee affects essentially what kind of agreements are made. If royalties are limited or sharing of rights is required, it tells of the strength of the licensor. It can be also a question of a collision of IPRs.

Grant-backs are typical terms to set obstacles for licensing. If these clauses are excessively restrictive, they can be seen as against the reforms of TTBER, as exclusive grant-backs are not allowed any more. Grant-backs can foster licensor innovations, as the licensor can control the follow-on innovations. Anyway, grant-backs have a risk of undermining innovation and causing some others making benefits of the innovations than the original patent holders.\footnote{Vesala 2015, 48-55.}

In Case \textit{Samsung v. Apple}, the latter argued that Samsung’s patent was not essential and not infringed by Apple’s UMTS – standard compliant products. In the decision Commission stated that if there is no objective justification and the licensee is unwilling to accept FRAND licensing commitments, it supports the principles above that the main content of the IPR may be destroyed due to the unbalanced licensing condition.\footnote{Samsung – AT.39939.}

In Case \textit{Huawei v. ZTE} it was stated by CJEU that an injunctive relief does not constitute abuse if an essential patent holder 1) notifies the infringement to the infringer and a FRAND offer is made 2) the user can make a counteroffer that corresponds to FRAND terms 3) if the counteroffer is rejected, the user has to give a bank guarantee 4) if no agreement is reached, the parties may request a third party, which determines the royalty.\footnote{Huawei v. ZTE C-170/13.}

\section*{4.3. Research and Development Agreements after the Changes in TTBER}

There is a general exemption concerning R&D agreements in new TTBER regulation. Market share, which have to be considered in order to be within the application of the Article, is 25 %. Exceeding that level does not automatically mean that the agreement is denied. R&D agreements have to be evaluated as a whole. However, the black list has to
be taken into consideration. The terms concerning pricing, production or dividing markets or clients are denied independent from the market share of the parties.

Agreements, which include R&D cooperation, but do not include terms of future production, do not belong to the application of 101 Article (1). However, it is possible that if the parties agree on not competing on certain areas, it can be applied. Usually the dynamics of competition is so hard, that this kind of problems do not arise.

TTBER regulation concerning R&D agreements (1217/2010) defines them as agreements between two or more parties, which aim to cooperate in the area of R&D in order to make agreements and have a goal to make use of the results of the cooperation as follows:

Article 101(1) of the Treaty on the Functioning of the European Union (TFEU) is not applicable to research and development (R&D) agreements *. In accordance with Regulation (EEC) No 2821/71, however, this regulation provides an exemption for R&D agreements which contain provisions relating to the assignment or licensing of intellectual property rights in order to carry out the joint R&D, paid-for R&D or joint exploitation, so long as those provisions are not the primary object of such agreements, but are instead directly related to and necessary for their implementation. The regulation also block exempts the joint exploitation of the results of R&D carried out by the parties under the regulation. This regulation replaces Regulation (EC) No 2659/2000, which expired on 31 December 2010.

Conditions for exemption

To be exempted, the agreement must state that all the parties have full access to the final results of the R&D, including any resulting intellectual property rights and know-how, for the purposes of further R&D and exploitation. If the parties limit their rights of exploitation, access to the results for the purposes of exploitation may be limited accordingly.

Where the agreement only provides for joint R&D or paid-for R&D, each party must have access to any pre-existing know-how of the other parties concerned, if this know-how is indispensable for the exploitation of the results. This exchange of pre-existing know-how may be compensated, but the compensation must not be so high as to effectively prevent such access.

Any joint exploitation may only concern results which are protected by intellectual property rights or constitute know-how and which are indispensable for the manufacture of the contract products or the application of the contract technologies.

Market share threshold and duration of exemption

Where the parties to the R&D agreement are not competing undertakings, the exemption provided for by this regulation is applicable for the duration of the R&D. Where the results are jointly exploited, the exemption continues to apply for seven years after the contract products or contract technologies are first put on the EU market.

Where the parties are competing undertakings, the exemption is applicable only if, at the time the R&D agreement is entered into:
• in the case of joint R&D agreements, the combined market share of the parties does not exceed 25% on the relevant product and technology markets;
• in the case of paid-for R&D agreements, the combined market share of the financing party and all the parties with which the financing parties has entered into R&D agreements, relating to the same contract products or contract technologies, does not exceed 25% on the relevant product and technology markets.

At the end of the seven years duration, the exemption shall continue to apply as long as the combined market share of the parties does not exceed 25% on the relevant markets.

Hardcore restrictions

The exemption does not apply to R&D agreements which, directly or indirectly, in isolation or in combination with other factors under the control of the parties, have as their object:

• the restriction of the freedom of the parties to carry out R&D in an unrelated field;
• the restriction of the freedom of the parties to pursue R&D in a related field after the completion of the R&D agreement concerned;
• the limitation of output or sales, with certain exceptions.

Excluded restrictions

The exemption does not apply to the following obligations contained in R&D agreements:

• the obligation not to challenge the validity of related intellectual property rights after completion of the R&D;
• the obligation not to grant licences to third parties to manufacture the contract products or to apply to contract technologies, unless the agreement provides for the exploitation of the results by at least one of the parties and such exploitation takes place in the internal market vis-à-vis third parties.

The regulation concerns the terms of R&D agreements, which deal with their application and are necessary for the application. The goal of the agreement is not the focus of the regulation. The precondition of the exemption is that the all the results of the R&D project including IPRs are available for all parties concerned. It is possible to restrict the rights to use the results, but they have to be in relation with the specialization areas of the parties. Sometimes the parties agree on payments in order to restrict competition. Also in those agreements all parties have to be able to use the results of the R&D project equally, including IPRs as well. In case the agreement deals with know-how, which has been created earlier, parties, who join it later, must not be compelled to pay too high prices because of that. The idea is to promote innovative actions and restrict competition, if it is necessary. It is important to ensure useful projects to be realised, so that competition law does not restrict them too much.
The treatment is harder, if the companies are competitors. The exemption can be valid as long as the project lasts, if the parties are not competitors. If two of the companies are competitors, the article will be applied only if the market share in total does not exceed 25% of the relevant markets.

If the agreement includes black list terms, it will be outside the application of the article. The black list terms include restrictions concerning production, areas or clients to whom one can sell etc. Claims concerning the validity of IPRs, which are essential for R&D, are allowed. If this kind of claim will be raised, there has to be a possibility to terminate the agreement. It is outside of the application of the article not to allow a right to give licenses to third parties. It can be allowed only if at least one of the parties has the right to benefit the results of the R&D project.121

It is important to be able to evaluate the elements of innovations. Legal and technical elements are the preconditions for achieving the markets. It is thought traditionally that investments for R&D and patenting are supplementary means of succeeding in the competition. However, in IT-area the investments for R&D and patenting are complementary business strategies.

New inventions are based on former inventions. The exploitation of an invention needs an agreement from the former holder of the right. In case the right has been divided vertically into many different companies, a former holder gets a chance to hold up the new holder in the licensing negotiations. The price of the inventions may rise so high that it is impossible to exploit the invention. A horizontal dividing of the IPRs brings new choices to the market. A new inventor only needs an agreement from a holder and will be able to compete with the holders. It is possible to get the license at a lowest possible price and the exploitation of an invention becomes easier.122 This was described earlier in the theoretical case Biosup><Bigmed.

The process of developing innovations to products can be looked from the perspective of the company: what is the most effective and inexpensive method of developing an idea to

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121 Kuoppamäki 2012, 159-164.
122 Kultti & Takalo 2005, 171.
a product and succeed in marketing it with good profits. The perspective of an employee is the circumstances in the company in which the most important innovations happen. On the other hand, the development of an innovation contains different kind of risks.

Here we return to the risks of R&D process in the sense of evaluating innovations. There can be defined diverse types of risks in exploiting innovations:

Firstly there are economical risks, which depend on the markets of the product, which has been protected by a patent, know-how or a trademark. There is an evaluation of results, which can be seen in the future. This causes variation to the economical calculations.

Secondly there are technical risks, which mean that because of the applied technology or the investments done no commercialised product comes out of the process or the process has to be stopped.

Thirdly there are financial risks, which appear in the level of unbalance of the balance sheet. It can be losing independency, which is caused by using IPRs or followed by investments. A company has to take a financial risk, which is needed for the economical transactions.

Fourthly there are legal risks, which lie at the level of sustaining or losing a right or rights, where a party wants to be sure of the profits at a certain moment. The legal risk effects to the integrity of the monopoly and so to the profits, which can be achieved. In many cases it is essential to investigate the legal risks and minimize its effects and protect the productivity of investments.

There are also fiscal risks, which are forms of legal risks and depend on the choice of IPRs. They cause a lot of administration.

Technical risks, commercial risks and legal risks can be represented as curves, which have different effects on the profits made of the product. Global risks can effect to one or more of the variables. The risks are time-dependent. Technical risks are biggest in the beginning, where these investments to R&D are strongest. It is supposed that cash flow begins somewhere in the middle
of the phase of R&D. Legal risks begin while the phase of R&D is going on. It is supposed that as long as the phase of R&D is coming to its end the product starts to be profitable. The newer the product is, the more there is marketing needed, see the following Figure 8. on the development of a product and the related technical, commercial, and legal risks with respect of cash flow and time:

![Figure 8.](image)

The diverse types of risks described above are dependent on the product developed and the time used. One element affects the other. A patent is useless if not applied in an appropriate technical environment. In every case there has to be done profound calculations of each type of risks applied to the case.

An example of evaluating IPRs the following formula can be given.\(^{123}\)

\[
V = \sum_{j=1}^{n} \left( Q_j \cdot PV_j \cdot r \right) / (1 + \beta)^j,
\]

where  

- \( V \) = the value of IPR;
- \( Q_j \) = expected sales of volume per year \( j \);

\(^{123}\) Breese & Kaiser 2004, 126.
\[ PV_j = \text{a sales prize without taxes per year } j; \]
\[ r = \text{the coefficient of permissions; } \]
\[ \beta = \text{the coefficient of actualization of a sector; } \]
\[ n = \text{the duration of actualization or the expected duration of the exploitation of the right.} \]

This formula can be used as a comparative measure for evaluating of IPRs in a particular sector. To be more concrete, let us give an example of this formula, where a company X is expecting to produce 300 pieces of \( y \) per year with price 100 euros of each. The coefficient of permission \( r \) is evaluated to be 3 \%, whereas the coefficient of actualization of a sector \( \beta \) is evaluated to be 70 \%. Moreover, let us consider a five year to be the expected duration of the exploitation of the right. Accordingly, putting these values to the above formula, we will get the value of IPR to be 1.195,29 euros. Considering this example, we can easily see that the higher the coefficient \( r \) is compared to the coefficient \( \beta \), the greater is the value of IPR, and conversely.

The risk evaluation needs strategic planning\(^{124}\). As the production processes may take time monitoring the resources is essential to be able to succeed in the process. The monitoring of IPRs concerning the phases of the process is part of the strategic planning of a company. It is a question of choosing the right types of protection at a right phase. The IPR costs are not always in correlation with the price of the product. The price is essentially in correlation with the sales. That is why it is always a strategic evaluation how much in IPRs is invested, because they are a cost risk. Risk analysis has to be done within the framework of evaluating benefits and harms, as Kuoppamäki, Rahnasto and Vesala confirm. However, it is important to evaluate the competition condition also against TTBER black list and grey list. It is evident that the black list with severe restrictions of competition is followed. More unlikely it is that the grey list is not considered carefully enough or it is considered too carefully and no agreement is achieved.

\(^{124}\) Nonaka & Takeuchi 1995.
4.4. Licensing Agreements as Means of Competition

In Dictators game there is a proposal to share, which means take it or leave it. In reality that does not apply to license agreements, as there are many stages between the decision and the choice. In real life licensors do not appropriate all of the “added value” for licensees. Goldscheider’s rule means that 25% of the incremental profit due to IPRs often about 10% of the total revenue should go to the licensors. In case licensee takes unusual risks it can be adjusted downwards. Usually the parties of the licensing agreement set limits.

“NTT DoCoMo, Ericsson, Nokia and Siemens made a licensing agreement, in which essential patents for W-CDMA are licensed at rates that are proportional to the number of essential patents owned by each company. They have also expressed their willingness to co-operate with such arrangements…targeted cumulative 5% level.”125

If competitors agree on standard setting to limit options, they may be considered unacceptable by competition authorities, if IP owner has used IP in standard to restrict downstream competition by restrictive licensing terms. This has caused the member to become dependent on the IP owner. Sometimes IP owner has by excessive fees appropriated funds that other members needed to develop next-generation technology.

A frand promise is a license or promise to license. It does not allow refusal or termination of a license. It has to be fair and reasonable and in conformity with EC Treaty Articles. It means equal treatment of all customers, including the IPR-owner’s own downstream business.

If there were alternatives before the standard was set, the “fair price” is the incremental value of the chosen technology over the next best alternative. If there is no information about alternatives, then has to be used a “consistent” comparison with prices of similar products. That can be the price charged by a licensor in non-standardized competitive market or price charged by licensor to its own downstream business or price charged by other licensors for similar technology.126

125 https://www.3g.co.uk/PR/November2002/4377.htm, read. 20.12.2016
126 Dolmans 2009.
5. CONCLUSIONS

The framework of this research is competition law and IPRs. Competition law regulation concerning block exemption means that companies have to take into consideration certain regulation in order to avoid the intervention of competition authorities. As the system of block exemption regulation is based on self-announcement system, companies may take more or less risk in their agreement praxis.

The philosophical approach to this subject lies in utilitarianism. It focuses on the consequences of an action. Rule utilitarianism means that we ought to accept rules which increase in the greatest increase in total happiness. That means advantage, benefit or good for the affected parties. Companies try to make most of the markets and try to achieve dominant positions. That is the economical effectivity and the demand to bring the most to the owners of the company. Companies make agreements, which are best for their goals. However, these goals cannot lead to agreements, which disturb competition.

The rule utilitarian perspective means that if people would ignore laws they felt to be unjust they would be happier. However, this kind of behavior would lead to other consequences. Those affected by lawless actions would be harmed. People in general would lose respect for the law.

The interest of the society is to protect consumers and that harmful agreements do not diminish or abolish competition. The block exemption regulation together with the guidelines aims to give instructions for agreement negotiations. The regulation includes black list: severe restrictions, and grey list: restrictions, which have to be evaluated in each case distinctively. This means that there is a grey area, in which companies have to make self-evaluation concerning their competition behavior, and if not considering relevant regulation, have the risk of intervention by competition authorities later.

This research follows Vesala´s approach according to which factors affecting innovations and between different kinds of innovation are ambiguous and uncertain. One way to
handle the uncertainty is to scrutinize the benefits and harms, which are consequences of certain practices. Conclusions are made on relative comparison accepting that the environment scrutinized is incomplete. Competition regulation can lead to erroneous judgements and has a tendency to affect competition environments unintentionally. The likelihood and the magnitude of the errors are to be considered.

In the first Chapter described the structure of the research. In the second Chapter explained the background of competition law and IPRs and what are the prevailing theories. Schumpeter’s and Arrow’s views were described and also Baker’s more nuanced ways of looking at the subject. Schumpeter’s theory of economic development was that the innovation-profit-entry process is a chain that is linked at several places and it is not unidirectional. The more there are profits the more there are incentives for innovations. These are more likely to be realized in large scale operations, so that favors large companies. This limitation on the incentive of the monopolist to innovate is often termed the “Arrow effect” or the “replacement effect”, because it arises to the extent the monopolist replaces itself rather than developing new business. Arrow favoured then competition. The modern views about competition state that there are more factors influencing competition. However, the Schumpeter’s and Arrow’s are still the basic theories to understand the mechanism of how innovative incentives function in competitive environments.

Modern theories emphasize the uncertainty of the conditions of competition. In Finland Rahnasto emphasises the theory, according to which IPRs are acceptable, when the rights bring to its holder more benefit than they cause harm to others. Kuoppamäki, in turn, supports so called extended method of cost-benefit-analysis, in which the line between acceptable and non-acceptable behaviour can be done according to the use of the IPR. More or less the theories are incomplete descriptions about market behaviour. This research supports Vesala’s view that the relevance of innovations and different kind of innovations varies in competition law practices in relation to IPRs. One way to manage this situation is to look at the harms and benefits related to those practises. In practise this means that the way to scrutinize them is by relative comparisons or less extensive inquiries. It is also important to note that competition law leads easily to erroneous judgements.
The research question was as follows:

*What are the preconditions for a competition according the new block exemption regulation concerning the transfer of technology?*

That research question was divided into the following two sub-questions:

1. How small and medium size companies fulfill the criteria of permitted competition after the changes in block exemption regulation concerning the transfer of technology?

2. How small and medium size companies fulfill the criteria of block exemption according the new regulation?

The answers to these research questions according to this research are as follows:

In the third Chapter the relevant articles concerning EC Treaty and block exemption regulation were clarified as well as the changes of them. The definition of the misuse of a dominant position and how relevant markets affect them is the basis for the block exemption regulation. Market shares are used to define a dominant position. Market shares are used, as it is easier to define that than to gather all the relevant factors affecting to a competition environment. However, relevant markets can be different from the market shares and that affects to the definition of a dominant position.

The concept of misuse of a dominant position has been introduced from the early cases of ECJ until Microsoft case. The essential facilities problem has become a core issue to define, as a company ruling a network of others infringes competition law very likely when restricting essential elements of operation. In Microsoft case Microsoft had a dominant position with over 90% of market share and opportunity to restrict other companies using the interoperability function with its operational systems. It was enough for ECJ to condemn the behaviour.
The rule of the misuse of a dominant position has a chain effect to TTBER regulation. A dominant company can decide how to promote innovations. It can negotiate agreements in favour of its innovations and their development and order other companies by terms of license agreements. It depends on the strength and knowledge of the licensee how much it can operate with its innovation in license negotiations. Often a high royalty is agreed in order to avoid claims. The case Biosup >> Bigmed is an example to show that the company having the resources can take into account the TTBER regulation to favour its goals and take advantage of the economic condition. The stronger can even drive the weaker one to bankruptcy by using the IPRs. This example of the position of a SME could be exaggerated here.

Another approach to the issue in question is that TTBER conditions from the point of view of SMEs could be looked from the perspective of R&D agreements. Usually in those agreements there are many factors affecting to the position of an SME. How IPRs are treated depends on the amount of innovations and how they are agreed between the parties. In some cases companies have agreed of royalties in relation to the amount of the IPRs. SMEs can grow into large companies during R&D processes or they can form joint ventures with each other. In that way the relation between large companies compared to small ones is not “black and white”.

These conditions reflected to the framework of TTBER regulation means that it is not easy to evaluate how companies fulfil the criteria of permitted competition conditions during license agreements or during R&D projects. A hypothesis that companies are very careful avoiding restricted conditions could be argued. On one hand they can try to avoid unwanted conditions by terms of the agreements or on the other hand they may be ignorant of the conditions. The argument supporting this hypothesis is that careful companies could try to avoid restricted situation of the grey list in all possible situations and that could easily lead to a situation not having an agreement at all. From the perspective of effectivity that is an unwanted result.

It is not easy to define whether the market shares are exceeded, where the relevant markets of the product development function, and how they are defined, if many companies are working in cooperation and the conditions, which and when a company
exceeds the limit. Usually safe harbour is achieved, when the arrangement or operation is justified with effectivity reasons or with reasons of technical development.

The terms of the licensing agreements can affect to innovative incentives two-sidedly. It is good if a grant back may allow the party – subject to it – to access licensor’s knowledge and IPRs at lower cost and risk. This improves the possibilities of the licensee to participate in an innovation process. In some cases some conditions can be seen as solutions to imperfections of IPRs. The challenge of competition law is to find the anti-competitive conditions and whether those conditions can be justified by IP or some other inefficiencies.

The new guidelines specify the directions of settlement agreements. Terms, which concern licensing, do not deny competition as such. For instance pay-for restriction or certain cross-licensing and non-challenge terms are among them. The new guidelines include regulation concerning new pools of technology. The foundation of a technology pool and action as well as the licensing inward or outward are according to the EU competition rules, presupposing that the seven preconditions in the guidelines are fulfilled.

In general those restrictions are allowed, if they are not aiming to restrict competition and if there are grounds for them, which are related to the technology and the arrangement is seen bringing benefits to consumers. These grounds are vague and it might be challenging to prove aims to restrict competition if they are not evident, as well as it would be relatively easy to find grounds for exemption.

Conclusions can be based on legal doctrines alone or on the analysis of the underlying rationality of a rule and how it suits to special circumstances. Here an analysis is done about the rationality of a rule of R&D processes and its special circumstances. This is not done formally and the fact that the legal doctrines presented there may not be efficient enough for that purpose is noticed.

Patent pools, which are created for those dealing with each other on a regular basis, have to make easier patent bundling and the bargaining of them. It is an easier way of reaching
patents from different owners and it saves transaction costs. They could be creating
c ompetition restrictions, but usually they are seen as “business as usual”. Even the Transfer
of Technology Block Exemption Guidelines of EU recognizes the benefits of pooling and
they are seen as a normal part of the innovation process. It is one of the confirmed principles
in the new regulation.

In Chapter four the evaluation of innovations is scrutinized in the context of TTBER. It is
stated that the value evaluation of IPRs is risk evaluation, in which legal, technical and
commercial risks are functioning in different parts of an R&D development. Risk
planning is part of the company’s business strategy, which can be calculated, but the
results of which are always approximate. To avoid legal risks to be realized companies try
to agree on possible future problems, for instance on a competition law risk. This is done
by using special terms ensuring safe harbour beforehand. Sometimes companies try to
avoid claims by agreeing on higher royalties. Anyway, problems may arise later.
According to the changes of TTBER, the right to terminate a licensing agreement in
disagreement situations concerns only one-sided licenses and the party to raise a claim
has to be the licensee. This might be a SME and it could be doubted, whether it has
resources to raise a claim.

The meaning of the TTBER regulation could be reflected against the framework of
utilitarianism. Rules are in order to bring advantage for those using them and breaking
law would be against the society if it causes harm to those taking advantage of them by
creating costs to the society. Hence, it could be reasonable to maintain certain questions
for interpretation in order to make different kind of arrangements possible. Companies
working in cooperation are dynamic and there is no need in general to restrict their
contractual behavior. Competition authorities need not to intervene in business as usual. It
has to be admitted that market power reflects to the agreement power as well. The new
TTBER regulation offers some clarifications for competition conditions concerning
transfer of technology, but leaves space for companies operating in practice. Some
conditions might be challenging for SMEs alone, but together in R&D projects their
possibilities in agreement negotiations might be better.
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List of Abbreviations

AT&T    American Telephone & Telegraph
BER     Block Exemption Regulation
EC      European Commission
ECJ     European Court of Justice
IPR     Intellectual Property Rights
R&D     Research and Development
TTBER   Technology Transfer Block Exemption Regulation
TFEU    Treaty on the Functioning of the European Union
WIPO    World International Patent Organization