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Comparative legal analysis of technology transfer in Europe and in the United States of America

Master Thesis

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I hereby declare that I am the sole author
of this Bachelor Thesis and it has
not been presented to any other
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List of Abbreviations

Agencies	Antitrust authorities of the United States of America
Antitrust Guidelines	Antitrust Guidelines for Licensing Intellectual Property
Commission	European Commission
DOJ	Department of Justice, United States of America
FTC	Federal Trade Commission, United States of America
Guidelines	Guidelines of the Transfer Technology Block Regulation
IPR	Intellectual Property Right(s)
R&D	Research and development
TFEU	Treaty of Functioning of the European Union
TTBER	Transfer Technology Block Exemption Regulation

Introduction

The overall competitiveness of the European Union has declined over the last decade. The EU lags behind the United States in terms of innovation effort. Young European companies created after 1975 are investing less in research and development than their US counterparts. According to the European Commission, such a gap reflects European specialization in more traditional and less innovative sectors, European companies' difficulties growing across borders and access to external sources of funding.[1] The Commission acknowledges that the European Union's macroeconomic weaknesses although worsened by the financial crisis, have structural causes. The European Union has slower productivity growth than the United States, especially in high tech sectors, and a weaker industrial sector.[2]

Regarding the technology sector, one reason can hide behind the relationship of competition law with intellectual property law. Each state has its own view how to regulate this relationships and on which philosophies establish its' policies. The core aim of balancing these laws is finding the right balance between over and under protection of an innovators' efforts in the first place, as it is currently in the US. Conversely, the EU only "controls" the antitrust side of the equation.[3]

The purpose of this thesis is to analyze and compare European Unions' Technology Transfer Block Exemption Regulation[4] and its accompanying guidelines[5] with the United States' Antitrust Guidelines for Licensing Intellectual Property[6]. As a result, conclude their current approaches and disciplines towards balancing intellectual property law and competition law and identify how to distinguish the terms that do not go as far as to restrain the competition. The hypothesis of this thesis is that regarding the transfer of technology **European Union competition law has more extensively limited the exploitation of intellectual property laws compared to the United States antitrust law.** As a conclusion of this thesis, the author will answer to the main questions. First question is that how transfer of technology diverges or converges in these jurisdictions and the second question, which is indispensably related to hypothesis, what should

[1] Ciriani, S., Lebourges, M. A new European competition policy for growth driven by profitable investments. The European Commission's policy in light of the modern economic growth theories. Report April 2014. ORANGE
[2] Ibid.
[3] Eilmandsberger, T. IP and Antitrust in the European Union. Southwestern Journal of Law & Trade in the Americas 2007, 13.
[4] Commission Regulation (EU) 316/2014 of 21 March 2014 on the application of Article 101(3) of the Treaty of Functioning of the European Union to categories of technology transfer agreements. OJ L 2017 No. 93, 28.03.2014
[5] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014.
[6] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017).

be the balance of limitation of exploitation of intellectual property rights in order that the innovation would flourish.

The author will conduct comparative analytical and qualitative research. The data will be collected from the libraries and available legal databases. The method of interpretation will be deductive. The structure of this thesis will consist of three chapters. The first chapter will analyze transfer of technology in the EU on the basis of TTBER and the Guidelines. The second chapter will discuss the US system of transfer of technology based on the Antitrust Guidelines. In the third chapter, the author will conduct a comparison between EU and US regimes of technology transfer putting emphasis on the similarities and differences of these jurisdictions. Finally, the author will try to conclude the thesis and answer the research questions.

Across the globe, there are more than 120 competition regimes sharing the same rhetoric while anchoring it in different domestic values and philosophy.[7] Taking into account, that EU and US are the leaders of world-wide innovation, and respective technology transfer guidelines are relevantly fresh – the TTBER from 2014 and the Antitrust Guidelines from 2017, not to say "hot from the printing", the author considers the topic to be actual and relevant for the future of technology transfer. Furthermore, new policies will definitely show the future trends for the other competition regimes, and if possible, those will learn how to strike a proper balance of technology transfer regulations.

[7] Ezrachi, A., Ioannidou, M., Intenationalization of competition law and policy: the domestic perspective. Journal of International and Comparative Law 2014, 1.

1. Technology transfer agreements in EU antitrust law

1.1. Article 101(1) TFEU and Article 101(3) TFEU

Article 101(1) TFEU (formerly Article 81(1) TEC) prohibits all agreements between undertakings "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."[8] Restrictive agreements under Article 101(1) are automatically void, and therefore unenforceable, by virtue of Article 101(2), subject only to the national principles of severability.[9] However, the prohibition provided by Article 101(1) is not absolute.[10] Article 101(3) provides that Article 101(1) may be inapplicable if certain requirements are fulfilled.[11] Inapplicability is decided on an individual basis or by block exempting class of practices.[12] Article 101(3) block exemption is granted if, in a wider sense, pro-competitive advantages of the contract exceed its anti-competitive effects.[13] Parties, who do not fulfil necessary requirements for the exemption, are no longer justified to apply for an individual exemption.[14]

The development of the EU competition rules was influenced by both the US antitrust laws and German ordoliberal school. Out of the two, the post Second World War German school of thought had a major influence. The fundamental ideas of the school represented rather human values than efficiency or purely economic concerns. Another factor that influenced the development of the European competition regime was the creation and strengthening of the EU single market. Market integration has been one of the leading objectives of EU competition law, since its inception, which affected the level and nature of the enforcement.[15]

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[8] Consolidated versions of the Treaty on the Functioning of European Union No 2012/C 326/01 of 13 December 2007. OJ C 326, 26.10.2012.
[9] Carlin, F., Pautke, S. The Last of its Kind: The Review of the Technology Transfer Block Exemption Regulation. Northwestern Journal of International Law and Business 2004, 24(3).
[10] Ibid.
[11] Gilbert, R.J., Converging Doctrines? US and EU Antitrust Policy for Licensing of Intellectual Property. Working Paper No. CPC04-44. Competition Policy Center. University of California, Berkeley, 2004.
[12] Ibid.
[13] Carlin, F., Pautke, S. The Last of its Kind: The Review of the Technology Transfer Block Exemption Regulation. Northwestern Journal of International Law and Business 2004, 24(3).
[14] Cornish, W, et al., Intellectual Property: Patents, copyright, Trade marks and allied rights. Seventh edition. Sweet & Maxwell Limited, 2010.
[15] Ezrachi, A., Ioannidou, M., Intenationalization of competition law and policy: the domestic perspective. Journal of International and Comparative Law 2014, 1.

1.2. The Technology Transfer Block Exemption Regulation

1.2.1. Introduction to the TTBER

Intellectual property licensing is regulated by the Technology Transfer Block Exemption Regulation [16] and its Guidelines, which is one of the main statutory scheme in EU legislation that focus on delimitation of intellectual property laws.[17] The TTBER and the Guidelines must be considered as a whole.[18]

Historically, until 1996, the Commission applied two separate block exemptions - patent licenses and knowhow patents - to manage intellectual property licenses. The general approach at the time was that all restrictive agreements, whether these agreements are balanced or pro-competitive, are prohibited and invalid until the relevant agreements have not been formally excluded by individual exemption in accordance with Article 81(3) or an adopted block exemption.[19] On May 1, 2004 not only did the European Union experience the largest growth in the history, when ten new countries acceded, but also a number of major competition law reforms entered into force.[20] Regulation 1/2003[21] reformed enforcement system of European competition, abandoned long-term monopoly of the Commission to prescribe exemptions, but also encouraged national competition authorities and courts to apply EU competition rules directly and in their entirety. Basically, this meant that when the agreement falls out of the block exemption it was no longer possible to submit the agreement to the Commission for individual exemption to ensure its enforceability.[22]

In May 2014, the Commission imposed a new Technology Transfer Block Exemption Regulation 316/2014, which is similar in structure to all block exemption regulations, which are

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[16] Buckley, M. Licensing intellectual property: competition and definitions of abuse of a dominant position in the United States and the European Union. Brook Journal of Intellectual Property Law 2004, 29(2).
[17] Piotraut, J.-L., European national IP laws under the EU umbrella: from national to European community IP law. Loyola University Chicago International Law Review 2004, 2(1).
[18] Jones, A., Sufrin, B., EU Competition Law. Text, Cases, and Materials. Sixth Edition. Oxford University Press, 2016, pp.849.
[19] Lavine, M.A., Ripples in the patent pool: the impact and implications of the evolving essentiality analysis. NYU Journal of Law and Business 2008, 4(2).
[20] Fiebig, A., Modernization of European Competition law as a form of convergence. Temple Intellectual Property & Computer Law Journal 2005, 19(1).
[21] Council Regulation (EC) No 1/2003 of 16 December 2002 on the implemenmtation of the rules on competition laid down in Articles 81 and 82 of the Treaty. OJ L 2003, No. 1, 16.12.2002.
[22] Carlin, F., Pautke, S. The Last of its Kind: The Review of the Technology Transfer Block Exemption Regulation. Northwestern Journal of International Law and Business 2004, 24(3).

adopted since 2000.[23] The change of EU technology transfer regime was specially designed to facilitate the challenge of validity of licensed patents by the licensee, the use of follow-on innovation and protection of small licensees.[24] Three broad topics that are related to changes in technology transfer block exemption regulation are as follows: firstly, licenses in relation to licensee's own improvements of the licensed technology or its own new applications (grant-back clauses), and secondly, termination of licensing agreements in case of challenge of validity of the licensed technology intellectual property (non-challenge clauses) and finally, technology pools and licenses.[25]

1.2.2. Safe harbour

The TTBER laid out the foundation for the exemption of certain IP licensing arrangements from the application of the EU competition. Without such an exemption, commonly known as a "safe harbour", most of the license agreement clauses may violate certain rules that prohibit anticompetitive arrangements.[26] Safe harbor shields the agreement until the last intellectual property right has expired or until the know-how remains confidential.[27]

The only way to benefit from the safe harbor is to satisfy its market share threshold.[28] Notion "market" refers to the presence that licensed technology has on the relevant markets, considering both licensor and licensee products. If the parties are competitors, the threshold is reached when the total market share of parties is 20 percent or more. If they are not competitors, the threshold is exceeded only when each one of them separately holds a 30-percent market share or more.[29] When the threshold is reached, the parties will assess the pro-competitive benefits of the agreement and its' anti-competitive effect.[30] If the contract does not fall under the safe harbor, it

[23] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[24] Lugard, P. The new EU technology transfer regime. Like a rolling stone? Digiworld Economic Journal 2014, 95 (3).
[25] Ibid.
[26] Treacy, P., Heide, T. The new EC Technology Transfer Block Exemption. European Intellectual Property Review 2004, 26(9). pp. 414-420.
[27] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[28] Treacy, P., Heide, T. The new EC Technology Transfer Block Exemption. European Intellectual Property Review 2004, 26(9). pp. 414-420.
[29] Cornish, W, et al., Intellectual Property: Patents, copyright, Trade marks and allied rights. Seventh edition. Sweet & Maxwell Limited, 2010.
[30] O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).

does not mean that the agreement breaches automatically Article 101 (1) TFEU.[31] If parties initially fall under the block exemption, but later exceed the market share threshold, they still retain the block-exemption benefits for another two years.[32]

1.2.3. Scope and effect of the TTBER

The preamble (6) of the TTBER establishes a scope of the TTBER: "Regulation should cover only technology transfer agreements between a licensor and a licensee.[33] Furthermore, the Regulation only covers technology transfer agreements "between two undertakings."[34] Accordingly Article 1(1)(b) defines "technology rights" as know-how and following rights, or a combination of them, including patens, utility models, design rights, topographies, supplementary protection certificates for medicinal or other products, plant breeder's certificates and software copyrights. Transfer of technology in the context of the TTBER means that the technology has moved on from one person to another, either through technology assignment or licensing "for the purpose of production of contract products (both goods and services[35])".[36] The TTBER also covers licensees' sub-license to use the technology.[37]

A block exemption does not apply to license agreements, which are related to other intellectual property rights such as trademark or copyright licenses, except to the extent that they are explicitly related to the manufacturing or sale of the product relevant to the agreement.[38] The TTBER does not cover copyright licensing, with the exception of software copyright.[39] In

[31] Lugard, P. The new EU technology transfer regime. Like a rolling stone? Digiworld Economic Journal 2014, 95 (3).
[32] Carlin, F., Pautke, S. The Last of its Kind: The Review of the Technology Transfer Block Exemption Regulation. Northwestern Journal of International Law and Business 2004, 24(3).
[33] Commission Regulation (EU) 316/2014 of 21 March 2014 on the application of Article 101(3) of the Treaty of Functioning of the European Union to categories of technology transfer agreements. OJ L 2017 No. 93, 28.03.2014, Article 1(c).
[34] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (54).
[35] Jones, A., Sufrin, B., EU Competition Law. Text, Cases, and Materials. Sixth Edition. Oxford University Press, 2016, pp.849.
[36] Commission Regulation (EU) 316/2014 of 21 March 2014 on the application of Article 101(3) of the Treaty of Functioning of the European Union to categories of technology transfer agreements. OJ L 2017 No. 93, 28.03.2014, Article 1(c).
[37] Jones, A., Sufrin, B., EU Competition Law. Text, Cases, and Materials. Sixth Edition. Oxford University Press, 2016, pp.856
[38] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[39] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, section (48).

addition, it does not include agreements which purpose is mere reproduction and distribution of copyrighted software[40], as well as technology pools, whereby two or more parties have agreed to combine their technologies and license them as a package.[41]

1.2.4. Hardcore restrictions and excluded restrictions

Hardcore restrictions are not only illegal and void but also they prevent the application of the block exemption to the other clauses of licensing agreements. Restrictions classify as "hardcore" based on the nature of the restriction and common experience showing that such restrictions are almost always anti-competitive.[42]

The main restrictions are divided into two lists: agreements between competitors and agreements between non-competitors. Both contain price fixing (including certain royalty obligations) and the allocation of markets or customers between the parties of the agreement.[43] Price fixing can be either a direct arrangement on the exact price to be paid, or on the price list, which determines the allowed maximum rebates. It does not matter whether the arrangement is fixed, minimum, maximum or recommended, it is still considered to be hardcore restriction.[44]

In addition, among the competitors the TTBER prohibits restrictions on output or sales, except for restrictions concerning limitation of the output of contract products imposed on the licensee by non-reciprocal agreements[45] However, if the competing parties have licensed non-competitive technology, it is permitted to impose an output restriction on the licensee. Even if the contract regards a competitive technology, it is permissible to restrict output, but only if multiple licensees are being licensed and only one of them is limited in its output.[46]

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[40] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, preamble (7).
[41] Jones, A., Sufrin, B., EU Competition Law. Text, Cases, and Materials. Sixth Edition. Oxford University Press, 2016, pp.849.
[42] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[43] Treacy, P., Heide, T. The new EC Technology Transfer Block Exemption. European Intellectual Property Review 2004, 26(9). pp. 414-420.
[44] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (99).
[45] Carlin, F., Pautke, S. The Last of its Kind: The Review of the Technology Transfer Block Exemption Regulation. Northwestern Journal of International Law and Business 2004, 24(3).
[46] Treacy, P., Heide, T. The new EC Technology Transfer Block Exemption. European Intellectual Property Review 2004, 26(9). pp. 414-420.

So far as concerns restrictions on the market allocation, it is not permitted between competitors who are involved in reciprocal licensing. But if the agreement is not reciprocal, they may agree not to engage in active or passive sales in the other's territories. Active sale is a positive result of marketing, but passive sales is merely response to unsolicited orders.[47] Another exception allows the licensing, when the licensee is granted a license to make products for their own use (known as the captive use restriction), and in case of reciprocal license granted to specifically create as an alternative source of supply for customer. The aim of such agreement is to provide alternative sources of products.[48] In addition to captive use and alternative source of supply restrictions, Article 4(2)(b) prohibits restrictions of the territory into which, or of the customer of whom, the licensee may sell, except in case of passive sales to the territory or customer group, which is exclusively reserved for licensor, or in case of restrictions of sales to end users by a licensee who operates on wholesale level, or in case of restrictions of sales to unauthorised distributors by the member of a selective distribution system.[49] As well, the safe harbor does not protect anymore licensees from passive sales of other licenses made into their exclusively allocated territories or designated group of clients during the first two years of the licensee selling the products manufacture based on this license.[50] The block exemption of restrictions on active sales is based on the assumption that such restrictions will strengthen incentives to invest, non-price competition and improvements in quality of services provided by the licensees allowing to solve free rider and hold-up issues.[51] Regardless of whether the agreement is reciprocal or not, the licensee must not be restricted in exploiting its own technology rights and neither party can be restricted with the agreement to carry out independent research and development activities, unless if this is necessary to prevent the disclosure of licensed know-how to third person.[52]

If a license includes any hardcore restrictions, it cannot be ruled out under the TTBER. If the agreement covers "excluded" restrictions, then the agreement may, however, be exempted if

[47] Cornish, W, et al., Intellectual Property: Patents, copyright, Trade marks and allied rights. Seventh edition. Sweet & Maxwell Limited, 2010.
[48] Jones, A., Sufrin, B., EU Competition Law. Text, Cases, and Materials. Sixth Edition. Oxford University Press, 2016, pp.862.
[49] Carlin, F., Pautke, S. The Last of its Kind: The Review of the Technology Transfer Block Exemption Regulation. Northwestern Journal of International Law and Business 2004, 24(3).
[50] Alexiadis, P., Guerrero Perez, A. European Commission proposes stricter EU antitrust rules on technology transfer. European Intellectual Property Review 2013, 35(7). pp. 415-419.
[51] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (120).
[52] Jones, A., Sufrin, B., EU Competition Law. Text, Cases, and Materials. Sixth Edition. Oxford University Press, 2016, pp.862.

excluded clauses can be separated from the rest of the agreement.[53] These restrictions may or may not infringe Article 101(1). The aim of this Article is to prevent block exemption of the agreements that may reduce the incentive to innovate.[54] The Commission lists the following two excluded restrictions: exclusive grant-backs by the licensee and non-challenge clauses.[55]

Article 5(1)(a) provides that any obligation set on the licensee to grant an exclusive license regarding to its own improvements, falls outside the scope of exemption.[56] This means that non-reciprocal grant-back obligations imposed on the licensee or the licensor would be covered by the TTBER for as long as the grant-back is not exclusive.[57]

Non-challenge clauses are added to the license agreement to prohibit the licensee of challenging the validity of a patent for a certain time, usually for the duration of the contract. Licensees include such clauses into their licensing agreements in order to avoid potential challenges of the validity of the license.[58] Article 5 (1) (b) provides that only in case of an exclusive license, the licensor may validly terminate the license if the licensee challenges the validity of intellectual property under question. Termination rights in a non-exclusive license are not exempted any more.[59] The status of non-challenge clauses under the TTBER is that all non-challenge clauses, including termination-upon-challenge clauses, are determined as so-called excluded restrictions. In addition to a limited number of exceptions, these clauses do not benefit from the block exemption and require justification in accordance with Article 101(3) TFEU in order to be lawful based on the European Union competition law.[60]

[53] Edwards, L., Waelde, C. Law and the Internet. Third edition. Hart. 2009 Oxford. El Brown, A. Intellectual Property, Competition and the Internet.; see also. Lugard, P. The new EU technology transfer regime. Like a rolling stone? Digiworld Economic Journal 2014, 95 (3).
[54] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (128).
[55] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[56] Lugard, P. The new EU technology transfer regime. Like a rolling stone? Digiworld Economic Journal 2014, 95 (3).
[57] Carlin, F., Pautke, S. The Last of its Kind: The Review of the Technology Transfer Block Exemption Regulation. Northwestern Journal of International Law and Business 2004, 24(3).
[58] Cheng, T.K., Antitrust treatment of the no challenge clause. New York University Journal of Intellectual property and entertainment law 2016, 5(2).
[59] Lugard, P. The new EU technology transfer regime. Like a rolling stone? Digiworld Economic Journal 2014, 95 (3).
[60] Cheng, T.K., Antitrust treatment of the no challenge clause. New York University Journal of Intellectual property and entertainment law 2016, 5(2).

1.2.5. Withdrawal in individual cases

Article 6(1) provides that the Commission has a general right to withdraw the exemption where the effect of a technology transfer agreement is not worth the exemption. According to this provision, withdrawal may be ensured, when the licensees are not allowed to use a third-party technology and/or licensor has been prohibited from granting licenses to other licensees.[61] For this, justification is brought in the TTBER: first, by the cumulative effect or parallel networks of similar restrictive agreements prohibit licensing to other licensees or if the sole owner of the technology licenses the relevant IPR to a licensee under an exclusive license and the licensee is already active on the product market with substitutable technology rights.[62]

According to Article 7, where parallel networks of similar technology transfer agreements extend over half of the relevant market, the Commission may misapply the right to an exemption. However, the Commission is not obliged to act if market coverage exceeded 50%, and will do so only if it is likely that access to the relevant market or competition is significantly restricted.[63]

1.3. The Commission's Guidelines on the application of Article 101 TFEU to technology transfer agreements

1.3.1. General principles

Although the TTBER provides an important safe harbour for technology transfer agreements, the Guidelines goes a step further by establishing a common framework of principles relating to Article 101 and intellectual property rights, as well as clarifies application of Article 101 (1) and Article 101 (3) when contracts fall beyond the scope of the TTBER.[64]

The first statement of the general principles of the Guidelines has been made in section (5), according to which Article 101 is designed to ensure the protection of competition in the market so that it enhances consumer welfare and an efficient allocation of resources. Another safe

[61] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[62] Van Weert, W., Henry, D. Assessing technology transfer agreements under the EU antitrust rules: revised TTBER - assessment and outlook. Computer and Telecommunications Law Review 2014, 20(4), pp. 108-112.
[63] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[64] Jones, A., Sufrin, B., EU Competition Law. Text, Cases, and Materials. Sixth Edition. Oxford University Press, 2016, pp.849.

harbour is offered to agreements that may affect trade, but at the same time "contribute to improving the production or distribution of products or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefits."[65] The requirements of previous are that related agreements do not impose restrictions that are not necessary for achieving the objectives and they do not allow firms to eliminate competition in substantial part of the product.[66]

Intellectual property law gives owners exclusive rights. IPR holders have the right to prevent the unauthorized use of its intellectual property rights, and instead have the right to exploit own intellectual property rights via licensing.[67] If the product has been placed on the market of the European Economic Area by the owner or with his consent, the principle of the Union exhaustion applies. According to this doctrine, as soon as the owner of the intellectual property manufactures a product and enters the market, the right has been exhausted, and therefore a parallel right in another Member State cannot prevent the entry of products to EU Member States.[68]

In addition, section (7) clarifies that intellectual property laws are not protected from competition rules. It also does not mean that there is a contradiction between intellectual property rights and competition law.[69] However, while assessing the license agreements, it should be borne in mind that the creation of intellectual property rights often entails substantial investment and therefore may be considered as a risky undertaking. For these reasons the innovator should be free to determine suitable compensation for successful projects to preserve incentives for innovation, and perhaps even restore investments from previous unsuccessful projects.[70]

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[65] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (5).
[66] Piotraut, J.-L., European national IP laws under the EU umbrella: from national to European community IP law. Loyola University Chicago International Law Review 2004, 2(1).
[67] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (6).
[68] Buckley, M. Licensing intellectual property: competition and definitions of abuse of a dominant position in the United States and the European Union. Brook Journal of Intellectual Property Law 2004, 29(2).
[69] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (7).
[70] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (8).

According to the Guidelines section (9), it can not be assumed that intellectual property rights and license agreements as such give rise to competition concerns. Most license agreements do not restrict competition, and instead create pro-competitive efficiencies. Indeed, licensing as such is pro-competitive as it leads to the spread of technology and promotes innovation by the licensor and the licensee. Agreement may reduce duplication of research and development, stimulate innovation, facilitate diffusion and create product market competition.[71]

1.3.2. Application of the TTBER

The assessment of whether a license agreement restricts competition must be carried out based on the actual context - whether there will be competition in the absence of restricting agreement.[72] It is important to note that the Commission does not consider all agreements between competitors necessarily anti-competitive. On the contrary, the Commission argues that the competition between the licensees, who are using the same technology, called the "intra-technology" competition, is an important addition to the competition between licensees who use competing technology, called "inter-technology" competition.[73]

Article 101(1) prohibits agreements whose object or effect is to restrict competition.[74] If the contract does not aim restriction of competition, it must be examined whether it has restrictive effects on competition. It is necessary to take into account both actual and potential effects. In other words, the arrangement must have probable anti-competitive effects.[75]

The EU recognizes three types of relevant markets: the product market, technology market and innovation market[76] Product market includes contract products (including licensed technology) and the products that consumers regard to be as interchangeable with or substitutable for the contract products due to latter characteristics, prices and intended use.[77] Technology markets

[71] Piotraut, J.-L., European national IP laws under the EU umbrella: from national to European community IP law. Loyola University Chicago International Law Review 2004, 2(1).
[72] Section (11) of the TTBER Guidelines.
[73] Treacy, P., Heide, T. The new EC Technology Transfer Block Exemption. European Intellectual Property Review 2004, 26(9). pp. 414-420.
[74] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (10).
[75] Ibid.
[76] O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).
[77] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (21).

consist of the licensed technology rights and technology rights of substitutes, ie other technologies which licensees consider to be interchangeable with or substitutable for the licensed technology by reason of its characteristics, prices and intended use [78] According to the Guidelines, the technology is a contribution which is integrated either into a product or production process. [79] In addition to the licensing agreements may also be related to the innovation market.[80]

TTBER contains special rules for calculating market shares. According to TTBER marker share calculation is based on the market sales value data. If this information is not available, the evaluation must be solved, for example, based on sales volumes.[81] If the relevant market is the product market, the licensee's market share is calculated taking into account the licensee's sales of products containing the licensed technology and those products' substitutes. In addition, if the licensor is supplying products to the market, its market share should also be taken into account. But in some cases, product and technology market analysis may not be sufficient and innovation market must be analyzed. If the relevant market is the innovation market, the central question is whether there are a sufficient number of companies competing on the market for particular type of research and development in order to maintain effective competition in innovation.[82] Since it is difficult to determine the market share for the current period, TTBER stipulates that previous calendar year may bear importance.[83]

Market share thresholds can be misleading - potentially stifling the licensing and innovation.[84] At least it is argued that if the contract covers the market share at the appropriate level, a two-year period is ensured during which parties has to make amendments in the agreement order to be in conformity with the TTBER. There is also a protection for parties who become competitors

[78] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (22).
[79] Ibid, Section (20).
[80] O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).
[81] Choi, Y.S., Heinemann, A. Restrictions of Competition in Licensing Agreements: The worldwide convergence of competition laws and policies in the field of intellectual property. European Business Organisation Law Review 2016, 17(3), pp. 405-422.
[82] O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).
[83] Choi, Y.S., Heinemann, A. Restrictions of Competition in Licensing Agreements: The worldwide convergence of competition laws and policies in the field of intellectual property. European Business Organisation Law Review 2016, 17(3), pp. 405-422.
[84] Buckley, M. Licensing intellectual property: competition and definitions of abuse of a dominant position in the United States and the European Union. Brook Journal of Intellectual Property Law 2004, 29(2).

after signing the agreement: they can continue to rely on their benefits as non-competitors, if they do not amend the contract substantially.[85]

With the determination of the competitive position of the licensing parties, relationship in the absence of the contract is analyzed, particularly whether the parties would be real or potential competitors [86] Agreements between competitors pose a greater risk to competition than agreements between non-competitors.[87] If an agreement is not horizontal because it is entered into by two non-competing companies, it is characterized to be a vertical agreement and therefore subject to a higher threshold for market share.[88]

If the licensor and the licensee are operating on the same product market and/or on the same technology market, they are competitors. However, if parties are active on different types of market, e.g. one party on the product market and other on technology market, the parties are not considered to be competitors.[89] Generally, the parties of agreement are not competitors, if they are in one- or two-way blocking position. One-way blocking position exists when the technology rights can not be used, because it violates another party's valid technology right. For example, if one technology right includes an improvement to another technology right, such improvements cannot be legally used without licensing intellectual property rights to the primer technology. Two-way blocking position exists where neither technology rights nor the parties can be commercially profitable on the market, without violating third party's valid technology right, and so are the parties required to obtain the license or waive from each other.[90] While assessing the technology market, potential competition is not taken into account. For example, the parties cannot be considered as competitors on the technology market, if one of the parties owns a substitutable technology, but does not license it. In this case, the parties may be potential competitors. However, the product market is calculated based on actual and potential

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[85]Cornish, W, et al., Intellectual Property: Patents, copyright, Trade marks and allied rights. Seventh edition. Sweet & Maxwell Limited, 2010.

[86] Adedayo Fesobi, O. A comparison of the new Technology Transfer Block Exemption Regulation and its accompanying guidelines with the US Guidelines to Intellectual Property Licensing on the Way They Regulate "Technology Markets" as well as Product Markets. IBA Convergence 2008, 4(3).

[87] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (27).

[88] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.

[89] Ibid.

[90] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (29).

competition, and in this case, the parties would be generally considered to be competitors.[91] TTBER explains in detail, that the company may be regarded as a potential competitor, if the outlook for market entry is realistic and if entry would happen in a short period of time - entry to the market is not a mere theoretical opportunity.[92]

The next major difference that can be felt especially in the case of hardcore restrictions, is reciprocity and non-reciprocity of the agreement. This is important because the hardcore list is stricter for restrictions on reciprocal agreements between competitors as compared to non-reciprocal agreements between competitors. Reciprocal agreements are cross-licensing agreements where the licensed technologies are competing technologies or can be used for production of competing products. Non-reciprocal agreement is an agreement where only one party licenses its technology rights to another party, or where in case of cross-license agreement, the licensed technologies are not competing technologies and the licensed rights cannot be used for production of competing products.[93]

1.3.3. Application of Article 101(1) and Article 101(3) TFEU outside the scope of the TTBER

Licensing agreements that do not fall under TTBER are not considered to be illegal, and they still can be individually exempted based on the Article 101 (3) TFEU.[94] The individual assessment of license agreement, which is outside the TTBER safe harbour, under the Article 101 (1) and 101 (3), must be carried out based on the Guidelines.[95]

The Guidelines allow additional safe harbour in the absence of hardcore restrictions and in the existence of four independent technologies in addition to and substitute to the licensed technology, which is held by the parties of the contract.[96] Important factors that should be considered are the nature of the agreement, the market position of the parties, competitors and

[91] Adedayo Fesobi, O. A comparison of the new Technology Transfer Block Exemption Regulation and its accompanying guidelines with the US Guidelines to Intellectual Property Licensing on the Way They Regulate "Technology Markets" as well as Product Markets. IBA Convergence 2008, 4(3).
[92] Van Weert, W., Henry, D. Assessing technology transfer agreements under the EU antitrust rules: revised TTBER - assessment and outlook. Computer and Telecommunications Law Review 2014, 20(4), pp. 108-112.
[93] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (98).
[94] Morris, S. Patent licensing and no-challenge clauses: a thin line between article 81 EC Treaty and the new Technology Transfer Block Exemption Regulation. Sweet & Maxwell, Intellectual Property Quarterly 2009, 2, pp. 217-253.
[95] Lugard, P. The new EU technology transfer regime. Like a rolling stone? Digiworld Economic Journal 2014, 95 (3).
[96] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.

customers, as well as the market entry barriers and the market maturity.[97] According to the Section (174) of the Guidelines, to be applicable the license agreement must: "produce objective economic benefits, the restrictions on competition must be indispensable to attain the efficiencies, consumers must receive a fair share of the efficiency gains, and the agreement must not afford the parties the possibility of eliminating competition in respect of a substantial part of the products concerned."[98]

The Guidelines provide an overview of the restrictions, which are common in licensing agreements, such as the royalty obligations, the output restrictions, the field-of-use limitations and the captive-use limitations, tying and bundling. In addition, this chapter discusses about the technology pools and settlement agreements. The author presents an overview of the restrictions and rules applicable to the restraints.

Royalty obligations. Parties of the license agreement are generally free to set the royalties and the modes of payment without succumbing to the Article 101(1).[99] The parties may also generally agree without falling foul of the Article 101(1) on the extension of payment of royalties after the intellectual property protection of the licensed technology expires, on condition that after the expiration of intellectual property protection, third parties can legally use this technology and compete with the contract parties. If competitors offer reciprocal fee with the fictitious license and that transaction is intended to prevent the integration of complementary technologies or to achieve another pro-competitive aim, it can be a hardcore restriction. In case of agreements between non-competitors, if the royalty is paid not only for the products produced with the licensed technology but also for the products manufactured by a third-party technology, then the royalties may increase product costs and reduce demand for third technology, causing market foreclosure.[100]

Exclusive licenses. It is important to make a distinction between exclusive, non-exclusive and sole licenses. An exclusive license has the largest value for the licensee, as it does not allow any competitor to use the licensed intellectual property rights. A sole license, compared with an exclusive license, allows the licensor to continue to use the intellectual property rights, but limits

[97] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (159).
[98] Ibid, Section (174).
[99] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[100] Ibid.

the licensor to license technology intellectual property rights to third licensees. A non-exclusive license allows the licensor to provide licenses to multiple third parties allowing companies to use the licensed technology, which in turn increases the competition.[101] An exclusive licenses should be monitored carefully, first of all it is necessary to determine whether the license creates any inhibition of competition, and, if so, whether the countervailing benefits justify their benefitting from Article 101 (3) exemption.[102]

Output restriction. Output restriction on the licensor's technology established on the licensee in a non-reciprocal agreement or one of the licensees in a reciprocal agreement are block exempted up to the market share threshold.[103] Article 101(3) is likely to be implemented when the licensor's technology is substantially better than the licensee's technology and the output limitation significantly exceeds the licensee's output before the contract was signed.[104] Between non-competing parties, output constraints may reduce intra-technology competition.[105]

Field of use restrictions. Restrictions on field of use of the license may be confined to one or more technical fields of use of application or one or more product markets for industrial sector.[106] Restrictions in agreements between competitors that limit the license to one or more product markets or technical field of use are not hardcore restrictions.[107] The block exemption applies irrespective of whether the field of use restriction is symmetrical or asymmetrical. Asymmetrical field of use restriction in a reciprocal license agreement implies that both parties can use the respective technologies that they are licensed to use only within different fields of use.[108] In contrast, the symmetrical field of use restriction agreements mean that the parties license to each other technology within the same fields.[109]

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[101] Halt, G.B., et al., Intellectual Property in Consumer electronics, Software and Technology Startups. Springer 2014 New York.
[102] Cornish, W, et al., Intellectual Property: Patents, copyright, Trade marks and allied rights. Seventh edition. Sweet & Maxwell Limited, 2010.
[103] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (204).
[104] Ibid.
[105] Ibid, Section (205).
[106] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[107] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (113).
[108] Ibid, Section (114).
[109] Ibid, Section (213).

Captive use restrictions. Captive use restrictions put in place an obligation on the licensee to restrict the production of the licensed product up to an amount that is required for producing of its own products, as well for the maintenance and repair of its own products. Such restrictions may have serious negative competition consequences in case of the agreement between competitors, if the licensor have significant market power in the components market. Licensing agreements between non-competitors bear two main competitive risks due to captive use restrictions: a restriction intra-technology competition on the market for the supply of inputs and elimination of arbitrage between licensees, who expand the possibilities for the licensor to impose discriminatory royalties on licensees. These restrictions, however, may be pro-competitive, if the licensor himself is a supplier of components.[110]

Tying and bundling. The licensee may be obliged to (a "tye-in") to purchase goods or services from the licensor or its representative.[111] Bundling occurs when two technologies or a technology and the product are sold exclusively together.[112] The main restrictive effect of tying is foreclosure of competing supplies of the tied product.[113] However, the Guidelines recognizes the potential pro-competitive advantages of tying (for example, technically satisfactory exploitation of technology, ensuring compliance with quality standards[114]) and the Guidelines argue that tying is likely to infringe Article 101 only when the market share thresholds of the agreements is higher than required.[115] Also, the licensor is may require that products be sold under his trade mark or with his get-up.[116]

Non-compete obligations. Non-compete obligation regarding technology licensing is typically an obligation on the licensee not to use third-party technologies that compete with licensed technology.[117] Non-compete clause prohibits licensees to enter into agreements stipulating acquisition or distribution of products or technologies that compete with the licensor's products

[110] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[111] Cornish, W, et al., Intellectual Property: Patents, copyright, Trade marks and allied rights. Seventh edition. Sweet & Maxwell Limited, 2010.
[112] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (221) of the TTBER Guidelines.
[113] Ibid, Section (223).
[114] Ibid, Section (224).
[115] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[116] Cornish, W, et al., Intellectual Property: Patents, copyright, Trade marks and allied rights. Seventh edition. Sweet & Maxwell Limited, 2010.
[117] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (226).

and technologies. An outright ban might include the understanding that the licensee does not produce or sell competing technologies or the licensee must cease of using certain technologies or cease of producing and distributing certain goods.[118] The TTBER exempts non-compete obligation both for competitors and non-competitors, the agreement is shielded up to the market share threshold.[119] The Guidelines enable that in some cases the licensor and the licensee produce competing products, but they are not regarded as competitors on the relevant product markets and technology markets. Such cases may occur where the licensed technology is a radical innovation, and the licensee's technology is obsolete or uncompetitive. There are two options, the licensor's technology either creates a new market or excludes the licensee's technology from the existing market.[120]

Settlement agreements. Guidelines provide for discussion about licensing within settlement agreements. Licensing of technology rights in settlement agreements can act as a means of resolving disputes or avoiding that one party exercises his intellectual property rights to prevent the other party from using its own technology rights.[121] However, individual terms under the settlement agreement can fall under the scope of Article 101(1) TFEU.[122] Thus, their assessment is based on the same method as the assessment of other licensing contract clauses. Guidelines specifically provide pay-for-restriction (or pay-for-delay), cross-licensing and non-challenge clauses.

First of all, pay-for-restriction usually does not involve a transfer of technology rights, but are based on the value transfer from one party in return for restriction market entry and/or expansion.[123] Regarding the cross-licensing, if the parties have a substantial degree of market power, and the terms of the agreement go beyond what is necessary to unblock, then the agreement is likely to be in breach with Article 101(1) TFEU, even if there is a mutual blocking position.[124] Therefore, when analyzing the cross-license agreement, one should take particular account of the parties' incentives to innovate.[125] Non-challenge provisions are an integral part of

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[118] August, R. et al. International Business Law. Text, Cases and Readings. Sixth Edition. Pearson. 2013 Boston.
[119] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (227).
[120] Ibid, Section (37).
[121] Ibid, Section (234).
[122] Ibid, Section (237).
[123] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (238).
[124] Ibid, Section (240).
[125] Ibid, Section (241).

the settlement agreements. Its main objective is to solve existing disputes and avoid future disputes.[126] Although non-challenge provisions may under certain circumstances be anti-competitive and, hence can be caught by Article 101(1) TFEU.[127]

Technology pools. Finally, the Guidelines provide elaborate overview of technology pools, which are agreements whereby two or more parties assemble a package of technology which is licensed not only participants of the technology pool, but also to third parties. Technology pools allow to licensees easy access to the technologies that are protected by intellectual property rights and which belong to multiple owners. As a result, technology pools may reduce transaction costs and increase the other efficiencies.[128] The pro-competitive advantage of technology pools are that all the patents in the group are licensed in the package by offering "one stop shop" to all members of the pool to have access to any desired patents.[129] Technology pools may be anti-competitive as well, e.g. pools can become a price fixing cartel.[130]

The Guidelines distinguish complementary and substitute pools. The two technologies are complements, when they are needed for both the manufacture of the product or for carrying out the process associated with the technology. Two technologies are substitute, when either of the technologies allow the manufacturer to produce the product or carry out the process that is associated with the technology. The pools, which only consist of substitute technologies, are more likely to harm competition and social welfare compared with pools consisting of complementary technologies. The next distinction is made between the essentiality and non-essentiality of the technology. The pools, which consist of essential technologies are always pro-competitive. All essential technologies are by their notion considered as complementary as well. The pools, which include complementary non-essential technology may create competition problems and thus there should be pro-competitive reasons to include non-essential technologies into the pool.[131] In other words, patents, which consist of essential technologies does not fall under Article 101(1) TFEU. Substitutable technologies in technology pools are caught by the

[126] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (242).
[127] Ibid, Section (243).
[128] Lugard, P. The new EU technology transfer regime. Like a rolling stone? Digiworld Economic Journal 2014, 95 (3).
[129] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[130] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (246).
[131] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.

prohibition principle of the Article 101(1) and it is highly unlikely that they are legally excluded under Article 101(3) TFEU, at least not if the substitute technologies constitute a significant part of the technology pool, even if the parties are free to issue individual licenses, as it is unlikely to occur.[132]

The EU Guidelines on transfer of technology also include a detailed analysis of the institutional framework governing the pool, noting that the way the pool is set up, organized and operated can reduce the risk that the agreement have the purpose or effect of restricting competition, and according to the Guidelines submit the proof of the effect of the agreement to be pro-competitive. Open pools are considered more competition-compatible than the pools, consisting of a limited number of technology holders. Independent experts participating in the creation and operation of technology pools, as well as assessing whether the technology is essential or non-essential, reduce the possibility that the pool is anti-competitive.[133] Thus, another important factor in the assessing of competitive risks and efficiencies of technology pools is the extent to which independent experts are involved in the creation and operation of the pool.[134] The Commission will take into account how experts are assigned and what functions they perform. Experts must be independent from the parties who formed the pool.[135]

As well, the Guidelines provide a "safe harbor" under Article 101(1) TFEU[136], which relates to the establishment and functioning of the pool, if seven cumulative conditions are met, including that the participation in the pool creation process is open to any interested technology right owners, sufficient safeguards to ensure essentiality of technologies in the pool and exchange of confidential information are adopted, the pooled technologies are non-exclusively licensed to the pool and the pooled technologies are licensed out to all potential licensees on FRAND terms, the parties can challenge the validity and essentiality of the pooled technology, and the parties are free to develop competing technologies.[137] According to FRAND rules, licensor shall have the following obligations: first, to ensure that all interested third parties access to technology,

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[132] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[133] Ibid.
[134] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (256).
[135] Ibid, Section (257).
[136] Alexiadis, P., Guerrero Perez, A. European Commission proposes stricter EU antitrust rules on technology transfer. European Intellectual Property Review 2013, 35(7), pp. 415-419.
[137] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.

secondly, not to discriminate between various licensees, and finally, to provide the licensing of patents on fair and reasonable conditions.[138]

[138] Guangliang, Z., Enforcement of F/RAND and antitrust intervention, Discussion from the Huawei decisions in China. The China Legal Science Journal 2014, 2(6).

2. Technology transfer agreements in the US antitrust law

2.1. Introduction

Antitrust policy of the United States was rooted in the Industrial Revolution. The time was marked by a significant change in economic and political power from previously dominating farming community to the emerging industrialists. The Industrial Revolution brought a new breed of empires, which sometimes were verified by a significant economic assets and power.[139]

An important breakthrough in technology licensing was the "Nine No-No's", issued by the Department of Justice in 1970, which presented nine licensing practices that the DOJ considered to be "unlawful in virtually every context."[140] Finally, in 1981, the Division announced the burial of Nine No-No's, some commentators even considered it "as statements of rational economic policy, contain more errors than the accuracy."[141] Next, era of intellectual property protection began flourishing, especially regarding intellectual property related to information technology. This is because the US government had realized that its' advantage in global economic competition depends on technologies and talented people. Further, the best and most effective way to preserve their resources is to defend their IP owners.[142]

Currently, enforcement is largely based on the Ministry of Justice and the Federal Trade Commission 1995 Antitrust Guidelines for Licensing Intellectual Property[143].[144] The newest version of the Antitrust Guidelines was issued on 12th of January 2017. The newest Antitrust Guidelines for Licensing Intellectual Property were issued on the 12 of January 2017. These Guidelines form a move away from the standards of 1970s and 1980s towards effect-based approach.[145] The competitive market reality in the United States undertook adherence of the free

[139] Burgunder, L.B. Legal aspects of managing technology. South-Western Publishing Co. 1995 Cincinnati.

[140] Minkang, G. Anti-abuse of intellectual property rights under anti-monopoly law: China's approaches. Frontiers of Law in China 2015, 10(3); see also Katz, A. Making sense of nonsense: intellectual property, antitrust, and market power. Arizona Law Review 2007, 49(4).

[141] Katz, A. Making sense of nonsense: intellectual property, antitrust, and market power. Arizona Law Review 2007, 49(4).

[142] Minkang, G. Anti-abuse of intellectual property rights under anti-monopoly law: China's approaches. Frontiers of Law in China 2015, 10(3).

[143] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 6th of April 1995. www.justice.gov/atr/archived-1995-antitrust-guidelines-licesning-intellectual-property (26.04.2017).

[144] Abbot, A.F., Intellectual property licensing and antitrust policy: a comparative perspective. Law & Policy in International Business 2003, 34(4); see also Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

[145] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

market ideal, and it requires less intervention by the state.[146] Therefore, Antitrust Guidelines become not to be a law, *a contrario* it has been developed to assist the individuals to predict whether the Agency may initiate antitrust case regarding business activities of the individuals.[147] Each case must be assessed on the factual basis and the Guidelines must be applied reasonably and flexibly. However, this Guidelines does not eliminate the force of judgment and secretion of antitrust law enforcement.[148]

As noted above, the US Guidelines are not a legal act, therefore it is necessary to know which legal acts are and may be related to the Antitrust Guidelines, antitrust law and technology licensing. The fundamental antitrust statutes are the Sherman Act[149], the Clayton Act[150], and the Federal Trade Commission Act[151]. The Sherman Act's is the foundation of antitrust policy and it prohibits contracts, combinations and conspiracies that restrict competition, one of the most important statements of the Act is that monopolization is illegal. Clayton Act clarifies a number of mechanisms, such as discriminatory pricing, however its main direction is merger clauses that prohibit the merger of undertakings that significantly reduce the competition. FTC Act authorizes the Federal Trade Commission to prohibit unfair methods of competition.[152] Also, each of the 50 states have their own antitrust laws.[153]

In connection with the antitrust enforcement, if administrative authorities shall initiate action, cases may be reviewed by the federal courts either initially or ultimately. In addition, individuals may initiate antitrust actions in federal courts, if they can prove that they have suffered damage by the violation of antitrust laws.[154] If individuals are successful in antitrust court action, they have the right to require triple damages, of course for the damage proved (so-called treble damages), as well attorney fees and other legal expenses are compensated. Violation against antitrust laws may result in severe penalties. In addition, the Ministry of Justice may initiate criminal proceedings against alleged infringers of Sherman Act. The Ministry of Justice and the

[146] Ezrachi, A., Ioannidou, M., Intenationalization of competition law and policy: the domestic perspective. Journal of International and Comparative Law 2014, 1.
[147] Halt, G.B., et al., Intellectual Property in Consumer electronics, Software and Technology Startups. Springer 2014 New York.
[148] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 1.0., p. 1.
[149] The Sherman Antitrust Act of 1890, 26 Stat. 209 (1890).
[150] The Clayton Antitrust Act of 1912, Pub.L. 63-212, 38 Stat. 730 (1912).
[151] The Federal Trade Commission Act of 1914, 38 Stat. 717 (1914)
[152] Burgunder, L.B. Legal aspects of managing technology. South-Western Publishing Co. 1995 Cincinnati.
[153] Ibid.
[154] Ibid.

FTC may initiate civil proceedings, request the court to impose bans and demand compensation of damages.[155]

2.2. The Antitrust Guidelines for the Licensing of Intellectual Property

2.2.1. Intellectual property law and antitrust law

According to section 1.0 of the Antitrust Guidelines: "These guidelines state the antitrust enforcement policy … with respect to the licensing of intellectual property protected by patent, copyright, and trade secrets law, and of know-how." The Guidelines state further: "In the United States, patents confer the rights to exclude others from making, using, or selling in the United States the United States the invention claimed by the patent for a set of period of time. To gain patent protection, an invention must be novel, non-obvious, useful and sufficiently disclosed. Copyright protection applies to original works of authorship fixed in a tangible medium of expression." The Antitrust Guidelines add, that ideas are not protected and trade secret refers to the information, which economic value usually depends on being generally secret.[156]

The United States recognizes that intellectual property and competition laws share a common goal - to increase innovation and consumer welfare. Intellectual property law creates incentives for innovation and its distribution and marketing. By prohibiting certain activities that could distort competition, antitrust laws foster innovation and consumer welfare.[157] Intellectual property law presumes that the process of invention and creation is rather expensive, while the costs of the reproduction of work or use of the invention are often very low.[158] Rapid imitation reduces incentives to invest and commercial value of the innovation, the end result is to the harm of the consumer.[159]

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[155] Burgunder, L.B. Legal aspects of managing technology. South-Western Publishing Co. 1995 Cincinnati.
[156] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017). Chapter 1.0, p.1.
[157] Ibid.
[158] Katz, A. Making sense of nonsense: intellectual property, antitrust, and market power. Arizona Law Review 2007, 49(4).
[159] Ibid.

2.2.2. General principles

Antitrust Guidelines involve three general principles. First, is that during the antitrust analysis, intellectual property shall be treated in the same way as any other property. Secondly, the Agencies do not presuppose that intellectual property creates market power in the context of antitrust. And finally, the Agencies recognize that intellectual property licensing allows for the companies to integrate additional production factors and therefore is generally pro-competitive.[160]

First, IP is treated in the same way as any other form of property.[161] But the Antitrust Guidelines leaves the possibility to distinguish between intellectual property and other assets, stressing that the antitrust analysis should consider uniqueness of intellectual property.[162] Therefore, the IP is comparable to any other form of ownership, there is no magic invisible boundary that surrounds area of intellectual property, which automatically leads to antitrust sanctions.[163] This means, antitrust law should respect property and its role on the market. This argument is confirmed by the judge's opinions within the case *US v Microsoft*[164] ownership does not create immunity from antitrust law in the same way as a baseball bat creates immunity in tort or criminal law.[165] Intellectual property law gives the owner the right to exclude third parties. These rights can help owners to earn profits from exploitation of their property. Similar to other private property forms, a certain types of behavior regarding to intellectual property may have anti-competitive effects which antitrust law can and must protect.[166] The Antitrust Guidelines conclude: "Intellectual property is neither particularly free from scrutiny under the antitrust laws, nor

[160] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).
[161] Abbot, A.F., Intellectual property licensing and antitrust policy: a comparative perspective. Law & Policy in International Business 2003, 34(4).
[162] Ciriani, S., Lebourges, M. A new European competition policy for growth driven by profitable investments. The European Commission's policy in light of the modern economic growth theories. Report April 2014. ORANGE Regulatory Affairs.
[163] Katz, A. Making sense of nonsense: intellectual property, antitrust, and market power. Arizona Law Review 2007, 49(4).
[164] U.S. Courts of Appeals, District Court of Columbia Circuit, 253 F.3d 34, United States v. Microsoft Corp.
[165] Ghosh, S. Beyond Hatch-Waxman. Rutgers University Law Review 2015, 67(3).
[166] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 2.1., p.3.

particularly suspect under them."[167] The Guidelines clearly indicate that it is equally applicable to US domestic as well as to international agreements.[168]

Second, contrary to conventional thinking, it is not expected that the intellectual property rights create market power.[169] Market power is the ability to maintain prices above, or production below the competitive level for a long term.[170] It is believed that market power is a prerequisite for the return of previous investments as well as the condition of future investments.[171] The Antitrust Guidelines explain that although intellectual property rights exclude the specific product, process or work, it is often sufficient number of actual or potential close substitutes, which hinder the creation of market power.[172] Finally, the Antitrust Guidelines explain that, like any other tangible or intangible asset, which allows the holder to receive significant competitive profits, market power (or even a monopoly), which is the "consequence of superior product, business acumen, or historic accident", does not per se violate the antitrust laws."[173] Third, IPR licensing is generally effective and pro-competitive because it integrates complementary IP, accelerates innovation on the market, and encourages future innovation.[174] Intellectual property owner must arrange for its combination with other necessary factors, in order to realize its' commercial value.[175] Licensing or assigning intellectual property rights can help integrate licensed property to complementary factors of production. Thus, the license agreements will increase the value of intellectual property to owners and consumers and can also contribute to the development of technologies that are in a blocking position.[176] mechanism may give the

[167] Katz, A. Making sense of nonsense: intellectual property, antitrust, and market power. Arizona Law Review 2007, 49(4).
[168] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 2.1., p.4.
[169] Abbot, A.F., Intellectual property licensing and antitrust policy: a comparative perspective. Law & Policy in International Business 2003, 34(4).
[170] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 2.1., p.4.
[171] Ciriani, S., Lebourges, M. A new European competition policy for growth driven by profitable investments. The European Commission's policy in light of the modern economic growth theories. Report April 2014. ORANGE Regulatory Affairs.
[172] Katz, A. Making sense of nonsense: intellectual property, antitrust, and market power. Arizona Law Review 2007, 49(4).
[173] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 2.2., p.4.
[174] Abbot, A.F., Intellectual property licensing and antitrust policy: a comparative perspective. Law & Policy in International Business 2003, 34(4).
[175] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 2.3., p.5.
[176] Ibid.

licensee a stimulus to invest in product commercialization and dissemination.[177] Exclusivity restrictions may protect from free riders and encourage licensees' wish to license.[178]

2.2.3. Antitrust concerns and modes of analysis

Usually intellectual property licensing mechanisms increase prosperity and promote competition, antitrust concerns may nonetheless arise. Agencies focus on the actual or likely effects of the agreement, not on formal conditions. Agencies typically do not require intellectual property owner to create competition within its own technology.[179] If the license agreement does not prevent competition between the parties, which would competed in the absence of the agreement, the arrangement cannot harm competition.[180] License agreements lead to competition concerns if they negatively affect prices, outputs, quality or choice of the actually or potentially available products and/or services.[181]

According to the Antitrust Guidelines, there are three types of relevant markets. These are goods market, technology market and innovation market.[182] A goods market definition covers all those products and services that consumers find to be interchangeable with or substitutable for their characteristics, price and field of use.[183] Simply put, goods markets are traditional markets for products or services that are the basic notion of antitrust analysis.[184] Licensing restrictions may result in pro-competitive effects on markets for final or intermediate goods that use intellectual property, or on upstream market for products that are used as inputs, associated with intellectual property, for the production of other goods. The Antitrust Guidelines indicates that the goods markets are defined in the Section 1 of the Merger Guidelines.[185]

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[177] I Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 2.3., p. 6.
[178] Ibid.
[179] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 3.1., p. 7.
[180] Kattan, J. Perspectives on the 1995 Intellectual Property Guidelines. Antitrust 1995, 9(3), pp.11-15.
[181] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 3.2., p. 8.
[182] O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).
[183] Kubeša, T. Competition aspects of public licenses. Masaryk University Journal of Law and Technology 2015, 9(2).
[184] Kattan, J. Perspectives on the 1995 Intellectual Property Guidelines. Antitrust 1995, 9(3), pp.11-15.
[185] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

Technology markets consist of the intellectual property that is licensed and its similar substitutes - that is, technologies or products that are similar enough to replace the licensed technology and therefore substantially limit the market power of the licensor in the relevant market.[186] When the license cannot be easily calculated in the monetary terms, technology market analysis is used. In this case, the technology market has been limited to specific technologies and other products, that consumers may replace the licensed technology at a comparable cost.[187]

In some cases, the analysis of license agreement on the product and technology market will not have a practical outcome.[188] Implementation of innovation market has been the most contentious part of the Antitrust Guidelines.[189] Innovation market is determined according to the research and development market, where the company tries to develop the product or technology.[190] Close substitutes consist of research and development projects, technologies and products that significantly limit the exercise of market power on the relevant research and development markets.[191] By analysing identifiable assets and characteristics on which the innovation depends, shares of R&D expenditures or shares of the product concerned, market shares of competitors in the innovation market are calculated. These markets are used only if the business's ability to carry out research and development activities is related to the business's "special assets or characteristics”.[192]

Licensing of intellectual property must be in compliance with the antitrust rules. Those rules address vertical agreements that limit competition unnecessarily and horizontal agreements that divide markets.[193]

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[186] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 3.2.2., p. 9.

[187] O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).

[188] Ibid.

[189] Kattan, J. Perspectives on the 1995 Intellectual Property Guidelines. Antitrust 1995, 9(3), pp.11-15; see also Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

[190] O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2); see also Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

[191] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

[192] O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2); see also Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

[193] Cornish, W, et al., Intellectual Property: Patents, copyright, Trade marks and allied rights. Seventh edition. Sweet & Maxwell Limited, 2010.

In assessing whether a particular agreement has anti-competitive effects, antitrust authorities usually start with the defining relationship of the parties to the agreement as a vertical or horizontal.[194] Agreements between (potential) competitors are assessed more strictly than agreements between non-competitors. Antitrust violations, which are common in agreements between competitors are price-fixing, territorial allocation and concerted refusal of the transaction. But also licensing agreements between non-competing parties may infringe antitrust laws.[195]

The Antitrust Guidelines show that horizontal relationship exist between the licensor and the licensee, if the parties would likely have been potential competitors in the relevant market in absence of the license agreement.[196] Horizontal practices include companies who are at the same level in the market chain.[197] An anti-competitive restraints in a horizontal relationships enhance the risk of coordination of prices, output limitation or acquisition or upkeep of market power.[198]

On the other hand, a vertical relationship concerns the activities that are complementary in nature, i.e., one company is a customer of a technology that is provided by other party, and the two companies are not competitors in this particular market.[199] These companies do not compete with each other, but their activities may affect consumers or other market participants.[200] Anticompetitive limitation with respect to the vertical relationship forecloses access to vital inputs, increases the cost of inputs or facilitates coordination of prices or output restrictions.[201] The agencies are seeking for potential harmful anti-competitive effects resulting from the vertical relationship, or any horizontal relationship, which is monitored from the level of the licensor or licensee.[202]

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194 O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).
195 Ibid.
196 Halt, G.B., et al., Intellectual Property in Consumer electronics, Software and Technology Startups. Springer 2014 New York.
197 Kubeša, T. Competition aspects of public licenses. Masaryk University Journal of Law and Technology 2015, 9(2).
198 O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).
199 Halt, G.B., et al., Intellectual Property in Consumer electronics, Software and Technology Startups. Springer 2014 New York.
200 Kubeša, T. Competition aspects of public licenses. Masaryk University Journal of Law and Technology 2015, 9(2).
201 O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).
202 Halt, G.B., et al., Intellectual Property in Consumer electronics, Software and Technology Startups. Springer 2014 New York.

In accordance with the Antitrust Guidelines, anti/competitive restrictions are typically assessed under the "rule of reason", which was first brought to the public in the pivotal case of antitrust law *Standard Oil Company of New Jersey v. United States*[203].[204] According to this rule, the court shall examine and consider pro- or anti-competitive effects of the restriction. Restrictions can be illegal if the anti-competitive effects outweigh its pro-competitive effects.[205] In analyzing the reasonableness and necessity of the restriction, the Antitrust Guidelines are asking whether the parties could achieve similar results using significantly less stringent criteria.[206] Under the rule of reason approach, a variety of factors should be taken into account, including the redeeming virtues, market power and offsets of potential relevant legal fees, as well as industry specific context.[207] Generally, the court applies the rule of reason, if the restriction is not manifestly anti-competitive.[208]

Some arrangements may be potentially so harmful that none of the alleged advantages could outweigh their dangers in a rule of reason analysis. Instead of wasting time and effort by analysing evidence regarding reasonableness of the arrangements, the courts move forward directly to the conclusion that the restrictions are illegal.[209] Since unreasonableness is assumed, these practices are called unlawful *per se*.[210] Following explanation can be found in the *Trans-Missouri* case[211] - the *per se* rule treats trade restrictive agreements, combinations or conspiracies unlawful, without considering whether an agreement, combination or conspiracy can be potentially reasonable.[212] Restraints that have been interpreted by the courts as *per se* illegal, are naked price fixing, output restrictions, market division between competitors in a horizontal agreement, as well as some specific group boycotts and resale price maintenance.[213] Each

[203] U.S. Supreme Court, 221 U.S. 1 (1911), Standard Oil Co. Of New Jersey v. United States.
[204] Bishop, J. Are major league baseball and the national hockey league violating American antitrust laws through their blackout restrictions? Journal of High Technology Law 2014, 15(1).
[205] O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).
[206] Kattan, J. Perspectives on the 1995 Intellectual Property Guidelines. Antitrust 1995, 9(3), pp.11-15.
[207] Bieri, D.A. Implications of FTC v Actavis: A Reasonable Approach to Evaluating Reverse Payment Settlements. Minnesota Journal of Law, Science and Technology 2014, 15.
[208] Bishop, J. Are major league baseball and the national hockey league violating American antitrust laws through their blackout restrictions? Journal of High Technology Law 2014, 15(1).
[209] Burgunder, L.B. Legal aspects of managing technology. South-Western Publishing Co. 1995 Cincinnati.
[210] Ibid.
[211] U.S. Supreme Court, 166 U.S. 290 (1897), United States v. Trans-Missouri Freight Ass'n.
[212] Bishop, J. Are major league baseball and the national hockey league violating American antitrust laws through their blackout restrictions? Journal of High Technology Law 2014, 15(1).
[213] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

constraint suggests collusion between the parties in order to eliminate competition on the market.[214]

The Antitrust Guidelines also mentions that the type of restrictions that always or almost always tend to reduce output or raise prices and do not have reasonable efficacy, may be challenged by a "quick look" analysis without particular investigation of the market structure.[215] Although the Antitrust Guidelines have taken the approach that prefers to see the mode of antitrust analysis as a "sliding scale", which consists of various hypotheses. Rather than putting antitrust analysis into three dominant silos "*per se*", "quick look" and "rule of reason", it is better to think of the problem as setting proof requirements that depend on the circumstances.[216]

2.2.4. Antitrust safety zone

The Antitrust Guidelines provides important safe harbour, in which the conduct is considered to be justified in the absence of extraordinary circumstances.[217] The safe harbour excludes the acquisition of intellectual property, which is actually subject to merger analysis.[218] The safe harbour standards differ depending on whether the relevant market is goods market, technology market or innovation market. If the market is a goods market, the proposed license agreement falls to safe harbour when: (i) it is not facially anti-competitive, and (ii) the licensor's and the licensee's market shares in sum are no more than 20 percent on each of the relevant product markets, which is significantly affected by the restriction. If the market is a technology market, the proposed license agreement falls under safe harbour if: (i) it is not anti-competitive in nature, and (ii) at least four independently controlled technologies exist on the market in addition to a licensed technology. If the relevant market is an innovation market, the license agreement will fall to the safe harbour, if: (i) it is not anti-competitive in nature, and (ii) at least four independent entities, in addition to the parties of license agreement, are operating on the market, and they have incentives, resources and characteristics needed to participate in research and development which is the direct substitute for the activities of the licensee and the licensor.[219] Usually only goods market analysis will determine whether the safe harbour will apply to certain

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[214] Lavine, M.A., Ripples in the patent pool: the impact and implications of the evolving essentiality analysis. NYU Journal of Law and Business 2008, 4(2).
[215] Kattan, J. Perspectives on the 1995 Intellectual Property Guidelines. Antitrust 1995, 9(3), pp.11-15.
[216] Hovenkamp, H. The Rule of Reason and the Scope of the Patent. San Diego Law Review 2015, 52(3).
[217] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).
[218] Kattan, J. Perspectives on the 1995 Intellectual Property Guidelines. Antitrust 1995, 9(3), pp.11-15.
[219] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

restrictions.[220] Thus, the parties should be aware that, changes in the market over time can affect whether their contract is shielded by the safe harbour or not.[221]

2.2.5. Application of general principles

The Antitrust Guidelines indicate that some licensing restrictions stimulate competition while other does not.[222] Therefore, the analysis will be conducted under the rule of reason, while some restraints may merit per se treatment. This chapter will analyze traditional licensing agreements' clauses that are stipulated in the Antitrust Guidelines.

Vertical price fixing. Vertical price fixing, where parties of various levels of supply chain enter into agreements on resale prices, is under scrutiny of rule of reason.[223] A per se approach regarding maximum vertical price fixing was laid down in the *Albrecht V Herald Co.*[224] In *State v Khan Oil Co.*[225] court overturned a per se approach and found that the courts have to assess these measures in line with the rule of reason. The Court strengthened its position in the topic in the decision in *Leegin Creative Leather Products v PSKS, Inc*[226].[227]

Tying. "Tying" is a commercial arrangement where the seller of the goods (the tying product) establishes a conditional sale to a purchaser who purchases a second product (the tied product) from the seller or a designated third party. The first case, which included a patent license classic tying, and therefore a rule of reason approach was established for the assessment, was the *International Salt Co. v. United States*[228].[229] The potential competition problem about tying is when the seller uses market power on one market to decrease competition on the second market.[230] According to the Antitrust Guidelines, the Agencies may challenge a tying agreement, if the seller has market power on the product market, the agreements have negative effects on competition on related product market, and the evaluation of the effectiveness justification does

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[220] O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).
[221] Ibid.
[222] Halt, G.B., et al., Intellectual Property in Consumer electronics, Software and Technology Startups. Springer 2014 New York.
[223] Burgunder, L.B. Legal aspects of managing technology. South-Western Publishing Co. 1995 Cincinnati.
[224] U.S. Supreme Court, 390 U.S. 145 (1968), Albrecht v. Herald Co.
[225] U.S. Supreme Court, 522 U.S. 3 (1997), State Oil Co. v. Khan.
[226] U.S. Supreme Court, 551 U.S. 877 (2007) Leegin Creative Leather Products, Inc. v. PSKS, Inc.
[227] Lewis, J.I.D, Wittlin, M. Entering the innovation twilight zone: how patent and antitrust law must work together. Vanderbilt Journal of Entertainment & Technology Law 2015, 17(3).
[228] U.S. Supreme Court, 332 U.S. 392 (1947), International Salt Co, v. United States.
[229] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).
[230] Ibid

not outweigh the anti-competitive effects.[231] The *Microsoft* case established four elements in which tying arrangement could be considered a *per se* violation. First is that the tying and tied products are two separate products, the licensor has the market power on the related product market, third is that the licensor leaves no possibility to the consumers but to acquire the tied product, and, finally, the tying agreement forecloses a significant amount of trade.[232]

Therefore the licensee must first ascertain that there are two different products. This analysis is difficult because it depends on the test, which is used for the determination of two different products.[233] In case of litigation, the licensee has the burden of proof to prove the existence of the market power of licensor.[234] Eventually, the *per se* approach led to severe criticism, which stated to be as an irrational approach for tying arrangements. First, because it was based on the erroneous assumption that tying is typically used to achieve a monopoly in one market to another, or other anti-competitive effects, and secondly, that the courts have developed a theory without actually going deeper into economic functions of the tying agreements. Courts often do not pay attention to the fact that tying agreements may actually be pro-competitive.[235] Several possible licensing agreements, which do not relate to the classical tying, have similar economic problems as tying. Some examples are the licensing agreements in which the licensor imposes higher royalties for licensees who do not purchase products from the licensor compared to licensees who do, or the licensor is threatening to terminate purchasing from potential licensor if the licensee does not sign the license, or the licensor requires that the licensee is not competing in sales of related products ("tye-out"), or the licensor licenses patents as a package.[236] Packaging is one form of the tying contracts, where the licensing of intellectual property rights is conditional upon the adoption of a license of another separate intellectual property rights.[237]

[231] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).
[232] Ibid.
[233] Bishop, J. Are major league baseball and the national hockey league violating American antitrust laws through their blackout restrictions? Journal of High Technology Law 2014, 15(1).
[234] Lewis, J.I.D, Wittlin, M. Entering the innovation twilight zone: how patent and antitrust law must work together. Vanderbilt Journal of Entertainment & Technology Law 2015, 17(3).
[235] Katz, A. Making sense of nonsense: intellectual property, antitrust, and market power. Arizona Law Review 2007, 49(4).
[236] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).
[237] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 5.3., p. 29.

Exclusive dealing. Exclusive dealing takes place, when the license prevents the licensee from licensing, sale, distribution or exploitation of competing technologies.[238] A licensee may get a sole rights (to the exclusion of others, including the licensor), exclusive rights (to the exclusion of all except the licensee), or non-exclusive rights (licensor may license to others).[239] In case of exclusive arrangements assessed under the rule of reason, the Agencies take into account the extent to which the agreement (i) promotes use and development of licensors' technology, and (ii) anti-competitively eliminates the use and development of the competitors' technology, or otherwise restricts competition in competitors technology.[240] Probability that an exclusive agreement can have anti-competitive effects is related to, inter alia, the level of market foreclosure, duration of an exclusive arrangement, and other characteristics of input and output markets, such as concentration, constraint in entering the market, and also the corresponding reaction of supply and demand on the market due to changes in prices.[241]

Cross licensing. Cross-licensing takes place between two or more parties who have symmetrical interests. The company needs competitors' patents as much as the competitor needs the patent of the first.[242] Cross-licensing is usual in smartphone industry.[243] The reason is that it is a mechanism providing a pro-competitive advantages by integrating complementary technologies, lessening transaction costs, removing the blocking positions and avoiding costly litigations.[244] On the other hand, when these mechanisms are used for naked price fixing or market division, they generally fall under a *per se* approach.[245]

Patent pools. Patent pool licensing agreements were originally protected from antitrust intervention based on the principle of "absolute freedom of contract".[246] In fact, the Supreme Court recognized step-by-step pro-competitive advantages of patent pools, it was apparent in the

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[238] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 5.4., p. 29.
[239] August, R. et al. International Business Law. Text, Cases and Readings. Sixth Edition. Pearson. 2013 Boston.
[240] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 5.4., p. 29.
[241] Ibid.
[242] Halt, G.B., et al., Intellectual Property in Consumer electronics, Software and Technology Startups. Springer 2014 New York.
[243] Ibid.
[244] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 5.5., p. 30.
[245] Ibid.
[246] Lavine, M.A., Ripples in the patent pool: the impact and implications of the evolving essentiality analysis. NYU Journal of Law and Business 2008, 4(2).

antitrust analysis of the Standard Oil patent pool. The Court refused from imposing a *per se* illegal approach to the royalty obligation of patent pools and instead decided to bring out the advantages of patent pools such as prevention of litigation and facilitation of technological progress, especially if blocking patents were involved. The Court decision that pools are not anti-competitive, based in part on evidence that the pool participants did not use their market power.[247] Thus patent pools may strengthen business relations in a synergistic manner, for example, if all participants resonate mutually so as to produce a common effect - juxtaposition - it is more important than the impact of all parts of patent pools acting separately.[248] Essentially, a patent pool is "one-stop shopping experience" that will allow the licensee to obtain all additional intellectual property rights, which are necessary to exploit technological innovation. The aim of the patent pools is to achieve economies of scale by reducing various operating expenses of licensing patents, therefore they are recommended licensing mechanisms.[249]

Patents that have been added to the pool, should complement each other, which means that each of the patented technology in the pool should be necessary for the use of other patents in the pool. Patents in the pool cannot be replaced by other pooled patents, because the licensee does not have to license two patents that substitute each other.[250] One potential antitrust problem in the pool may be the access to the extent that the excluded companies cannot effectively compete on the product market of licensed technology without being obliged to participate in the pool, and thus the pool participants have joint market power.[251] If pools are used to protect invalid patent or for inclusion of patents that are not complementary or are competing with each other in some other way, then they may have adversarial effects on competition.[252] Secondly adversarial effect on competition may arise from grant-back clauses, which require members to license to each other under pool license any products developed in future. This can weaken the incentive for innovation, as the company has to share the success of its research and development with other pool participants.[253] But sometimes patent pools have also pro-competitive advantages, for example, by using economies of scale and integrating the pool members additional options to the

[247] Lavine, M.A., Ripples in the patent pool: the impact and implications of the evolving essentiality analysis. NYU Journal of Law and Business 2008, 4(2).
[248] Halt, G.B., et al., Intellectual Property in Consumer electronics, Software and Technology Startups. Springer 2014 New York.
[249] Ibid.
[250] Ibid.
[251] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).
[252] Ibid.
[253] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

pool (including the removal of the blocking positions) and can lead to a competition problem only if the agreement covers a large part of the potential of research and development activities on the technology market.[254]

Grant backs. Licenses will often include provisions on the ownership and/or cross-licensing of further improvements, what is often called as grant-back conditions.[255] Grant-back conditions for cross-licensing agreements require the licensee to disclose and transfer back to the licensor any and all improvements arising from the use of licensed technology by the licensee during the duration of the license.[256] It might be important for the licensor, that licensor also produces improvements of the licensee based on intellectual property rights related to licensor. From the licensees' perspective, having rights to improvements may cause no need for subsequent licenses that are associated with the same products or services being provided by the licensed intellectual property. [257] Grant-back requirements can be assignments, exclusive and non-exclusive licenses.[258] In case of exclusive grant-back, the licensor is granted the exclusive right to use or sublicense any improvement of the licensee. In contrast, the licensee retains the non-exclusive right to use improvements he has made. In a non-exclusive grant-back provision, the licensor retains the title and the right to its improvement, but the licensor is also allowed to use the improvement. In case of assignment grant-back provision, the licensee must hand over all the rights and title of any improvements to the licensor. However, the licensee still retains the non-exclusive right to use the improvements made by him.[259]

Grant-backs have a number of pro-competitive reasons, including risk distribution between the licensor and the licensee, stimulus for the licensor to continue research work in the area, incentive for the first generation innovations and encouraging the licensing of first generation innovations.[260] On the other hand, grant-back clauses may potentially have adverse effects on competition, inter alia, discouraging the licensee to participate in competitive research and

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[254] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 5.5., p. 31.
[255] Halt, G.B., et al., Intellectual Property in Consumer electronics, Software and Technology Startups. Springer 2014 New York.
[256] Ibid.
[257] Ibid.
[258] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).
[259] Halt, G.B., et al., Intellectual Property in Consumer electronics, Software and Technology Startups. Springer 2014 New York.
[260] Balto, D.A, Wolman, A.M., Intellectual property and antitrust: general principles. IDEA - The Journal of Law and Technology 2003, 43(3).

development, permitting the licensor to acquire or maintain monopoly power, and promoting cartel behavior in the market.[261]

[261] Ibid.

3. Comparative analysis

3.1. Converging history

The wave of regional and global economic integration that began in 1950 with the advent of the EU requires definition of certain supranational rules and policies to govern trade in newly integrated markets. The key of these policies was the promotion of a competitive market that promised to attract capital inflows and stimulate economic growth. However, competition law was not so widely known when the integration movement started, and negotiators of a newly created EU were forced to turn to the US example, the only country which at the time had a comprehensive competition law system in place. US Sherman Act, thus, became the model for the competition law of the European Coal and Steel Community that was a predecessor of the EU.[262] At the same time, the development of European competition law benefit the Americans as well, who wanted to import their free-market model in Europe in order to facilitate the entry of the US business to European market.[263] According to their view, approach to competition law of the German ordoliberal movement was appropriate in order to achieve their aims.[264]

At the same time, the US has survived big changes in the approach of the Agencies to the role of IP in a competitive process. The range from systematic suspicion of IP licensing in the 1970s, to very soft convergence in the 1980s and to more recent views, the IP, as a rule, but not always, rather promotes than hinders competition.[265] Thus, development of antitrust law in the US has been pretty chaotic, but it paid off as the US is a pioneer in the technological innovation.

The American system is traditionally more liberal and open to the theories of the Chicago School, while the distinct peculiarity of the EU system since its inception is a pursuit to a common goal of market integration.[266] Single market has played an important role in the EU case law in its application of the provisions of the TFEU from the free movement of goods to the exploitation of intellectual property rights.[267] But today the situation is changing rapidly, as the

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[262] Beltrametti, S. Capturing the Transplant: U.S: Antitrust Law in the European Union. Vanderbilt Journal of Transnational Law 2015, 48(5).
[263] Ibid.
[264] Ibid.
[265] Adedayo Fesobi, O. A comparison of the new Technology Transfer Block Exemption Regulation and its accompanying Guidelines with the US Guidelines to Intellectual property Licensing on the way they regulate "Technology Markets" as well as Product Markets. IBA Convergence 2008, 4(3).
[266] Coco, R. Antitrust liability for refusal to license intellectual property: a comparative analysis and the international setting. Marquette Intellectual Property Law Review 2008, 12(1).
[267] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).

EU system approaches the American economic-based model.[268] The European Union and the United States different modes of origin and development illustrate different philosophical depth, which underpins comparable contemporary rhetoric. The abundance and the susceptibility of competition laws to social and political reality has not been unique to the United States and the European Union. In the world there are more than 120 different competition regimes, which share the same rhetoric, but are based on different national values and philosophies.[269] For example, the US tried to incorporate its antitrust laws to Japan basically at the same time and under the same circumstances as in the EU, but in Japan the existing bureaucracy refused to adopt the laws.[270]

3.2. Overall on application of guidelines

The EU and US guidelines for the licensing of intellectual property are in many ways similar, but they are not identical.[271] For many years, the European Commission has distinguished the application of European competition law from US antitrust law based on different social and cultural contexts in which most of the laws are applied.[272] Clear difference concerns the level of detail of guidelines in respect of particular licensing practices. The EU Guidelines is very detailed, which probably reflects the code-based system of law. American approach is still the one that provides broad policy statements with fewer details, which reflects the American tradition of developing specific precedents through common law, case-based system.[273]

Then another worthwhile comparison between two guidelines relates to the relative strength of legal effect. Like other US federal agencies' policies and guidelines, Antitrust Guidelines are not binding on courts.[274] Despite the non-binding nature of the Antitrust Guidelines, it has a real

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[268] Coco, R. Antitrust liability for refusal to license intellectual property: a comparative analysis and the international setting. Marquette Intellectual Property Law Review 2008, 12(1).

[269] Ezrachi, A., Ioannidou, M., Intenationalization of competition law and policy: the domestic perspective. Journal of International and Comparative Law 2014, 1.

[270] Beltrametti, S. Capturing the Transplant: U.S: Antitrust Law in the European Union. Vanderbilt Journal of Transnational Law 2015, 48(5).

[271] Lavine, M.A., Ripples in the patent pool: the impact and implications of the evolving essentiality analysis. NYU Journal of Law and Business 2008, 4(2).

[272] Fiebig, A., Modernization of European Competition law as a form of convergence. Temple Intellectual Property & Computer Law Journal 2005, 19(1).

[273] Delrahim, M., US and EU Approaches to the Antitrust Analysis of Intellectual Property Licensing: Observations from the Enforcement Perspective. U.S. Department of Justice 2004.

[274] Lavine, M.A., Ripples in the patent pool: the impact and implications of the evolving essentiality analysis. NYU Journal of Law and Business 2008, 4(2).

impact on licensing,[275] because it is shaped so as to help individual undertakings to predict whether the Agency initiates the antitrust concern in connection with their business conduct. TTBER tends to have the force of law, but the Guidelines is only convincing influence.[276] Given that the TTBER Guidelines have higher legal force compared to the Antitrust Guidelines, and the influence of various legal principles upon which the antitrust of two state rely on, there is a possibility that this shows the actual preference of EU to support separate policy on technology licensing.[277]

Conflict between competition law and intellectual property law in the United States have cyclically "ebbed and flowered over time depending to some extent upon the philosophies of the incumbent policy makers".[278] Nowadays, policies are more focused on the hegemony of intellectual property rights. Thus, US courts are paying more attention to the protection of intellectual property and minimally interfering with the antitrust laws.[279] On the other hand, EU historical experience has shown that intellectual property rights are dubious, because of the issues of national boundaries of their implementation and scope. Intellectual property rights are seen as barriers to entry that limit the output, divide EU single market and increase prices.[280] Obviously, both the US and the EU system of IPR have their own strategy implemented by comprehensive measures such as national legislation, administrative guidelines and education programs,[281] in addition, the US and the EU competition authorities explicitly recognize long-term benefits of the intellectual property protection.[282] The main fundamental reason of different approaches may be the urge of the EU and the US to win the race in field of information technology and innovation.[283]

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[275] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.

[276] Abbot, A.F., Intellectual property licensing and antitrust policy: a comparative perspective. Law & Policy in International Business 2003, 34(4).

[277] Lavine, M.A., Ripples in the patent pool: the impact and implications of the evolving essentiality analysis. NYU Journal of Law and Business 2008, 4(2).

[278] Coco, R. Antitrust liability for refusal to license intellectual property: a comparative analysis and the international setting. Marquette Intellectual Property Law Review 2008, 12(1).

[279] Minkang, G. Anti-abuse of intellectual property rights under anti-monopoly law: China's approaches. Frontiers of Law in China 2015, 10(3).

[280] Coco, R. Antitrust liability for refusal to license intellectual property: a comparative analysis and the international setting. Marquette Intellectual Property Law Review 2008, 12(1).

[281] Minkang, G. Anti-abuse of intellectual property rights under anti-monopoly law: China's approaches. Frontiers of Law in China 2015, 10(3).

[282] Lawrance, S. The competition law treatment of no-challenge clauses in licence agreements: an unfortunate revolution? Journal of Intellectual property Law & Practice 2014, 9(10).

[283] Minkang, G. Anti-abuse of intellectual property rights under anti-monopoly law: China's approaches. Frontiers of Law in China 2015, 10(3).

Each competition law regime may have a different composition of goals and a different hierarchy of such goals.[284] Nowadays, the EU and the United States regard both policies as pursuing the common aim of improving innovation and consumer welfare.[285] Apart from "consumer welfare" that is widely accepted by the majority of competition law regimes worldwide,[286] the EU adds a notion of efficient allocation of sources. From economic perspective, the EU has controversy in its' aims. In the economic terms, consumer welfare is defined as consumer surplus, which is the difference between what consumers were willing to pay for a good and what they actually paid.[287] Allocative efficiency is commonly defined as Pareto optimality. This takes place when no other distribution could make at least one person better off without making someone else worse off.[288] In conclusion, caring about allocative efficiency does not always increase consumer welfare, particularly when the seller is practicing highly discriminatory pricing strategies.[289]

At its core, the different approaches exhibited by the EU and the US stem from differing views of what constitutes "economic freedom", how it is valued, and how it should be facilitated. The US espouses keeping an eye on the ultimate goal of reducing interstate barriers, facilitating market participation and enhancing the consumer benefits that competition may spawn. The US seems to view competition as a goal in itself. Therefore US policy allows markets to correct themselves, assuming that the benefits down the line will accrue based on the survival and demise of competitors according to the strength of their products and the related public demand for them.[290] Over the last two decades, these jurisdictions have paid growing attention to potential efficiency justifications for restrictive IPR licensing, although each has retained differences in its enforcement approach.[291] On the whole, it is clear that European antitrust bodies are more worried than their American colleagues about anticompetitive risks arising from

[284] Ezrachi, A., Ioannidou, M., Intenationalization of competition law and policy: the domestic perspective. Journal of International and Comparative Law 2014, 1.
[285] Adedayo Fesobi, O. A comparison of the new Technology Transfer Block Exemption Regulation and its accompanying Guidelines with the US Guidelines to Intellectual property Licensing on the way they regulate "Technology Markets" as well as Product Markets. IBA Convergence 2008, 4(3).
[286] Ezrachi, A., Ioannidou, M., Intenationalization of competition law and policy: the domestic perspective. Journal of International and Comparative Law 2014, 1.
[287] Waked, D.I. Antitrust goals in developing countries: policy alternatives and normative choices. Seattle University Law Review 2015, 38(3).
[288] Ibid.
[289] Ibid.
[290] Buckley, M. Licensing intellectual property: competition and definitions of abuse of a dominant position in the United States and the European Union. Brook Journal of Intellectual Property Law 2004, 29(2).
[291] Abbot, A.F., Intellectual property licensing and antitrust policy: a comparative perspective. Law & Policy in International Business 2003, 34(4).

uses of IP rights and the risk that those borderline uses will lead to loss of innovation incentives.[292]

From an international perspective, the multitude domestic interests are challenging. Competition law is often applied to cross border activities, and the divergent approaches to the aims and application of competition law may result in inconsistent or conflicting decisions. Indeed the international landscape has sometimes witnessed friction due to the application of competition law to transactions or agreements of foreign companies. For example, the US authorities criticized the European Commission's strict review of the *Boeing/McDonnell Douglas*[293] transaction. There was more forceful criticism when the European Commission blocked the *GE/Honeywell*[294] transaction, which had earlier been approved in the US.[295] In addition to previous two cases and *Microsoft* case[296], these are just a few examples of the public notoriety, which associated with the parallel application of competition law in a globalized world, and it can wary in results.[297]

There is a conflict between the US antitrust law and EU competition law, but between the Member States of the EU this gap is not missing as well. TFEU creates a sui generis legal system that is separated from the national legal system. Member States retain the right to maintain its existing legislation governing the competition of private companies. Parallel application of national and European competition legislation under the same factual situation could create requirement for rules of conflict of law that maintain ordinary relations between two independent legal regimes.[298]

The US had the first sophisticated competition law system in order to comprehend and implement jurisdiction issues arising from the competition legislation. In case *United States v Alcoa*[299], the Court ruled that the US courts have jurisdiction to decide cases concerning foreign companies as long as the behavior of the foreigners actually affect the US trade.[300] In the United

[292] Coco, R. Antitrust liability for refusal to license intellectual property: a comparative analysis and the international setting. Marquette Intellectual Property Law Review 2008, 12(1).
[293] EEC 30.07.1997, IV/M.877, Boeing/McDonnel Douglas.
[294] EEC 03.07.2001, COMP/M.2220, General Electric/Honeywell.
[295] Ezrachi, A., Ioannidou, M., Intenationalization of competition law and policy: the domestic perspective. Journal of International and Comparative Law 2014, 1.
[296] EEC 24.03.2004, COMP/C-3/37.792, Microsoft.
[297] Fiebig, A., Modernization of European Competition law as a form of convergence. Temple Intellectual Property & Computer Law Journal 2005, 19(1).
[298] Ibid.
[299] U.S. Court of Appeals for the Second Circuit, 148 F.2d 416 (1945), United States v. Aluminium Co. of America.
[300] Fiebig, A., Modernization of European Competition law as a form of convergence. Temple Intellectual Property & Computer Law Journal 2005, 19(1).

States, both IP and antitrust are primarily matters for federal laws and enforcement, while IP rights - at least patents and copyrights - enjoy constitutional grounds.[301] In contrast, the EU system faces in an inconvenient divergence: intellectual property is still in no small part a matter for national laws, especially for patents, and IP rights are enforced mostly on a national basis, while competition is primarily a matter of Community law and enforcement. Moreover, the Treaty does not endorse any appraisal for patents or other IP rights; rather, it only considers IP rights, in general, as "justified" restrictions or similar to free movements of goods and services among member states.[302]

Next landmark difference is the nature of antitrust claims: In the US, normally private person initiates the antitrust claim, whereas generally public authority in the European Union, both at European and national levels. Federal agencies in the United States undertake only "major" antitrust litigation, such as in the case brought against *Microsoft* in the nineties, so that public antitrust enforcement is but a small part of the system. The European Commission, national antitrust agencies and courts and the European Court of Justice and the Court of First Instance have been, so far, the main if not the only watchdog of European competition laws. Consequently, the enforcement of European competition law is centralized - so that the coherence is more easily pursued - whereas antitrust laws and policy in the United States are split amidst different courts (and residual agencies). Moreover, most private US antitrust cases are settled confidentially among the parties, so that the terms of the agreement cannot be known. In turn, the differences in the kind of enforcement reflect on important procedural issues affecting, for example, the burden of proof (plaintiff *vis a vis* antitrust agencies), the interests being enforced (public *vis a vis* private), and may well determine the final outcome of cases.[303] Finally, the United States antitrust claims that involve patents may end up, depending on the circumstances, before the Court of Appeals for the Federal Circuit, specifically empowered with appellate jurisdiction on patent litigation, whereas no special forum is set up in the European Union for antitrust claims involving patents or other IP rights. In fact, the Commission, the CFI and the ECJ deal with both: antitrust claims, general and special, involving IP rights.[304] The continued commitment to shape competition through intervention confirms that Ordoliberal principles were not just instrumental in shaping the policies of the nascent European Union, but

[301] Coco, R. Antitrust liability for refusal to license intellectual property: a comparative analysis and the international setting. Marquette Intellectual Property Law Review 2008, 12(1).
[302] Ibid.
[303] Ibid.
[304] Coco, R. Antitrust liability for refusal to license intellectual property: a comparative analysis and the international setting. Marquette Intellectual Property Law Review 2008, 12(1).

that the account for much of the way European competition policy is still understood and applied to this day. This in turns explains why, when the European Commission and the FTC investigate the same transaction, most times the application of EC competition standards will result in stricter sentences and penalties, regardless of whether the transaction deals with mergers and abuse issues.[305]

3.3. Application of general principles

Under the Antitrust Guidelines, three general principles should be followed. First is that intellectual property is considered to be comparable to any other form of property. Secondly, that it cannot be assumed, that intellectual property creates market power under antitrust law and, finally, the licensing of IP enables companies to merge complementary factors of production and, therefore is, typically, pro-competitive. The TTBER and its Guidelines also indicate three important principles: (i) IPR creates exclusive rights, which can be exploited, either through assignment or licensing; (ii) IPRs are not immune from competition law intervention, nor does it imply that there is an inherent conflict between IP law and competition law; and (iii) licensing of IP is pro-competitive. From previous, it can be concluded, that those two set of guidelines are sharing similar principles, nevertheless, and again, US shows more libertarian approach and EU more rigid approach. For example, the US puts forward the hegemony of IP (comparable to any other property, though does not imply creation of market power and licensing of it is traditionally pro-competitive). Conversely, the EU says that though IP rights create exclusive rights, they are not immune from competition law, but all-in-all licensing IP is traditionally pro-competitive. As well, the EU stresses the principles of Union exhaustion, which is discussed below.

As to the framework for evaluating licensing restraints, the Antitrust Guidelines state that the vast majority of cases are evaluated under the so-called rule of reason.[306] According to the rule of reason, the Agencies are investigating the licensing clauses that potential have adversarial effect on competition, and if this adversarial effect exists it should be settled, whether the restriction is reasonable in order to achieve competitive advantages which counterbalance the

[305] Beltrametti, S. Capturing the Transplant: U.S: Antitrust Law in the European Union. Vanderbilt Journal of Transnational Law 2015, 48(5).

[306] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.

anti-competitive effects.[307] Conversely, the European Commission or the Court does not weigh the pro-competitive effects of the claimed restrictions against their anti-competitive effects as do the US agencies and courts under the rule of reason. Rather, the ECJ applies the "ancillary restraints doctrine" to inquire whether the challenged restrictions are "necessary" to secure the implementation of a lawful agreement.[308] Doctrine of ancillary restraints, is actually quite comprehensively explained in the US case law. In the ground-breaking case of *Addyston Pipe and Steel Co*[309]. Judge Taft distinguished between ancillary restraints and naked restraints. According to Judge Taft, an agreement is a reasonable restraint of trade only if it is incidental or ancillary to another agreement whose main objective is pro-competitive. The ancillary restraint doctrine allows judges to determine when a restraint is necessary to make viable a pro-competitive transaction.[310]

Notwithstanding the ancillary restraints doctrine, the ECJ in fact in its' case law, has often used a rule of reason approach. In several cases the requirement that when dealing with effect type agreements the market context and the market consequences of arrangement are to be taken into account certainly implies that the reasonableness of the restraint is to be analyzed. The Court declared very early, in *Society Technique Minière*[311], that in case of effect type agreements the arrangement's effects on competition are to be investigated taking into account the actual market context. The Court went even further when saying that the situations of competition with and without the agreement are to be compares. This implies that individual anti-competitive effects are not relevant in themselves but the ultimate question is what the final effect on competition is.[312] However, this view is not consistent through EU case law, in *Van den Bergh Foods*[313], the Court held that "the existence of the rule of reason in Community competition law is not accepted.[314]

[307] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[308] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).
[309] U.S. Supreme Court, 175 U.S. 211 (1899), Addyston Pipe & Steel Co. v. United States.
[310] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).
[311] ECJ 30.06.1966, C-56/65, Societe Technique Miniere (L.T.M.) v Maschinebau Ulm GmbH (M.B.U.).
[312] Nagy, C.I. EU and US Competition Law: Divided in Unity? The rule on restrictive agreements and vertical Intra-brand restraints. Routledge 2016 New York.
[313] CFI 23.10.2003, T-65/98, Van Den Bergh Foods Ltd v Commission of the European Communities.
[314] Nagy, C.I. EU and US Competition Law: Divided in Unity? The rule on restrictive agreements and vertical Intra-brand restraints. Routledge 2016 New York.

Article 101(3) exhaustively lists the factors the Commission must consider in order to decide whether to grant an exemption. The rule of reason analysis, in contrast, entails a more flexible inquiry that varies in focus and detail depending on the nature of the agreement and on market circumstances.[315] However and conversely to EUs' view, the rule of reason does not induce antitrust authorities to consider non-economic factors in the antitrust analysis. The rule of reason analysis is based exclusively on competitive consideration.[316] Unlike the EU exemption system, the rule of reason analysis is less rigid because no factor is dispositive in that analysis.[317] Furthermore, the requirements that an agreement must fulfill under Article 101(3) are more extensive than those of the US rule of reason. Article 101(3) requires the Commission to determine whether the agreement improves distribution or production or promotes technical or economic progress, and whether consumers are being allowed a fair share of the benefits resulting from such improvements. Moreover, the claimed restriction must be "indispensable" for the attainment of these objectives and must not afford firms the possibility of eliminating competition in respect to a substantial part of the products in question.[318] One of the consequences and major drawback of having a system of block exemptions instead of a rule of reason approach is that block exemption must be limited in time.[319] The rule of reason may have several benefits before the EU block exemption, still it may raise significant ambiguity for businesses. One never knows which arguments, information, or expert testimony ultimately will persuade the court.[320]

The TTBER and guidelines will likely reserve per se condemnation only for the sort of hardcore restraints deemed per se illegal under United States law. Because of their high likelihood of causing anticompetitive harm, agreements among direct competitors that involve price fixing, joint output limitation, and market-allocation are generally treated as per se illegal. This per se rule "condemns conduct without proof of power, effect, or purpose and without hearing claims of legitimate objectives.[321] It can be concluded, that this per se rule is similar to the hardcore restraints list of TTBER.

[315] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).
[316] Ibid.
[317] Ibid.
[318] Ibid.
[319] Ibid.
[320] Burgunder, L.B. Legal aspects of managing technology. South-Western Publishing Co. 1995 Cincinnati.
[321] Newman, J.M. Antitrust in zero-price markets: applications. Washington University Law Review 2016, 94.

3.4. Scope

TTBER covers pure patent licensing or know-how licensing agreements and mixed patent and know-how licensing agreements, as well as software copyright licensing agreements.[322] In addition, design rights are now equated to patents and are subject to the block exemption. With respect to other types of intellectual property, especially trademarks and copyright other than software copyright, these rights are covered only if they are directly related to the exploitation of the licensed and do not constitute the primary object of the agreement.[323] The Antitrust Guidelines only cover licensing agreements with respect to intellectual property protected by patent, copyright, and trade secret law and to know-how. They therefore do not cover trademark licensing although it is recognized that same general antitrust principles apply.[324] The TTBER is limited to be only applicable to agreements that contain "production of contract products" and bilateral agreements. However, the Commission indicates that in an individual assessment the principles set out in the TTBER should be applied by analogy to agreements between more than two undertakings.[325] The Antitrust Guidelines apply more broadly to multi-party licensing, including patent pools.[326]

3.5. Vertical and horizontal relationships

The TTBER generally provides different rules depending on the competitive relationship of the parties to licensing agreement. It sets different market share thresholds and hardcore lists for competitors and for non-competitors.[327] The Antitrust Guidelines distinguish horizontal from vertical agreements. The major benefit of the US system, is that it is easier to determine relationship of parties and allows the law to give considerably more leeway to parties in vertical relationships.[328]

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322 Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
323 Ibid.
324 Ibid.
325 Ibid.
326 Abbot, A.F., Intellectual property licensing and antitrust policy: a comparative perspective. Law & Policy in International Business 2003, 34(4).
327 Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
328 O'Loughlin, R.C. Antitrust or Antitrade? Self-Assesment of Market Share Chills the Incentive to License Nanotechnology Patents in the European Union. Washburn Law Journal 2007, 46(2).

Both the Commission and the US agencies consider vertical restraints less harmful to competition than horizontal restraints.[329] For example, an agreement where a patentee grants a license for the production of the patented goods to a manufacturer who does not own a competing technology is generally regarded as vertical than horizontal, even if the patentee produces such goods himself. Such an agreement is primarily “intra-brand” and the licensing parties would not have been competitors in the absence of the license.[330] There is an assumption that the advantages of vertical restraints in promoting inter-brand competition outweigh their anti-competitive effects on intra-brand competition. In a vertical agreement, each of the parties has an interest in having the other produce more, because that is the rational way to maximize their respective profits; in a horizontal agreement, each party has an interest in having the other produce less.[331] Intra-technology competition is seen as particularly important in the technology transfer context because licensees are not simply reselling the same good. Instead, they are licensing technology - an input among others - and this can result in the greater scope for end product differentiation and quality based competition between the licensees, to the overall benefit of consumers.[332]

In the US, a licensing agreement is vertical if, at the time it was negotiated, the licensee could not have entered the market without assistance from the licensor. This analysis in an *ex ante* analysis. The Commission, in contrast, often relies on an *ex post* analysis of the license agreement in question. As a result, the Commission tends to consider most patent licenses as horizontal agreements even if the licensees would not have been able to compete with the licensors but for the licenses.[333]

The EU seems more concerned than the US about characterizing parties as either competitors or non-competitors, with different substantive rules depending upon how the parties are classified. The Antitrust Guidelines focus more on the nature of the license terms and whether the

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[329] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).

[330] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.

[331] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).

[332] Treacy, P., Heide, T. The new EC Technology Transfer Block Exemption. European Intellectual Property Review 2004, 26(9). pp. 414-420.

[333] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).

relationship between the parties vertical or horizontal.[334] However, in conclusion, the Commission, with its division of competitors and non-competitors, has taken a less flexible position towards vertical restraints than the US agencies. There are two connected factors driving these two approaches towards vertical restraints: (i) the strong influence which the economic model proposed by the Chicago School has exerted upon the US agencies and courts, and (ii) the EU's objective of achieving an integrated market.[335] According to Chicago School of thought, vertical restraints almost never restrict competition, unless one of the parties enjoys significant market power in the relevant market.[336]

3.6. Safe harbour and market power

TTBER follows the modern and less formalistic "umbrella style" exemption scheme according to which, within certain market share thresholds, all restraints which are not expressly prohibited are permitted.[337] The Antitrust Guidelines deliberate on the so-called "safety zone." With regard to safety zone, the Antitrust Guidelines indicate that the FTC or the DOJ will not initiate action against the license agreement, if the restrictions are not anti-competitive in nature and the licensor and the licensee shall constitute collectively not more than 20% of the market disturbed by the restriction.[338] Safe harbour in the European Union is applied only if the competitors cumulative market share does not exceed 20 % of the affected market.[339] Agreements between non-competitors are only block-exempted on the condition that the market share of each of the parties does not exceed 30%.[340]

Only when harm to competition is established, the authorities engage in a full market analysis.[341] Carrying out market share assessments is often problematic, especially with successful new

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[334] Delrahim, M., US and EU Approaches to the Antitrust Analysis of Intellectual Property Licensing: Observations from the Enforcement Perspective. U.S. Department of Justice 2004.
[335] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).
[336] Ibid.
[337] Carlin, F., Pautke, S. The Last of its Kind: The Review of the Technology Transfer Block Exemption Regulation. Northwestern Journal of International Law and Business 2004, 24(3).
[338] Adedayo Fesobi, O. A comparison of the new Technology Transfer Block Exemption Regulation and its accompanying Guidelines with the US Guidelines to Intellectual property Licensing on the way they regulate "Technology Markets" as well as Product Markets. IBA Convergence 2008, 4(3)
[339] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[340] Ibid.
[341] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).

technology is that its market share may move quite quickly upwards.[342] Defining the relevant market remains an important often crucial, element of competition analysis. The core assumption is that *ceteris paribus* the higher a firms' share, the greater the firms' market power. Market definition can also play other roles, including examining entry, assessing competitive effects, and adding "clarity and power" to narratives in antitrust cases.[343]

Sherman Act claims that fall under the rule of reason, the US Supreme Court have defined market power as "the ability to raise prices above those that would be charged in a competitive market." In Sherman Act cases, the Court has defined market power as "the power to control prices or exclude competition."[344] A fundamental difference between the European Union and the United States lies in the appraisal of market power. The European competition authorities readily presume dominance and increase in dominance without the kind of factual records that might be required in the United States. Moreover, European competition law considers that a dominant company is liable for the competition structure of the market, because its control over essential facilities threatens the competitive structure of the economy.[345]

Before analyzing the market power, one should take into account the division of markets within US and EU. Similar approach are taken by those jurisdiction, both divide markets into three: products or goods market, technology markets and innovation or research and development market. The TTBER determines that the market share of a party on the relevant technology market is defined in terms of the sales of products that incorporate the respective technology on downstream product markets. A licensor's market share on the relevant technology market constitutes the combined market share on the relevant product market of the products produced by him and his licensees. In the case of new technologies that have not yet generated any sales, a zero market share on the technology market is assigned.[346] On the contrary, the Antitrust Guidelines' approach is based on the fact that the Agencies initially examine the relevant goods

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[342]Cornish, W, et al., Intellectual Property: Patents, copyright, Trade marks and allied rights. Seventh edition. Sweet & Maxwell Limited, 2010.

[343] Newman, J.M. Antitrust in zero-price markets: applications. Washington University Law Review 2016, 94; see also Buckley, M. Licensing intellectual property: competition and definitions of abuse of a dominant position in the United States and the European Union. Brook Journal of Intellectual Property Law 2004, 29(2); Guangliang, Z., Enforcement of F/RAND and antitrust intervention, Discussion from the Huawei decisions in China. The China Legal Science Journal 2014, 2(6).

[344] Newman, J.M. Antitrust in zero-price markets: applications. Washington University Law Review 2016, 94.

[345] Ciriani, S., Lebourges, M. A new European competition policy for growth driven by profitable investments. The European Commission's policy in light of the modern economic growth theories. Report April 2014. ORANGE Regulatory Affairs.

[346] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.

market, except in cases where the analysis of the market does not sufficiently take into account the effects on competition of a licensing agreement among technologies and research and development.[347]

With respect to market share in technology markets, the Antitrust Guidelines do not refer to the presence of the respective technology in the goods market as the TTBER does. The Agencies rather take a more forward-looking approach by abstaining from challenging a licensing agreement with a relevant impact on technology markets if there are four more independently controlled competing technologies in addition to the technologies controlled by the parties to the licensing arrangement.[348] The Antitrust Guidelines recognizes that if the market share is accessible information, it will be used for the determination of the relevant market, otherwise it will be necessary to use all the other evidence. If the market share or other data on market power are not available, and it turns out that competing technologies are relatively effective, the Agency shall assign the same market share on both technologies. With respect to the new technologies, the Agency normally uses the best information available to investigate the susceptibility of the market in the two-year period since the launch of the product.[349]

The Antitrust Guidelines agree that having market power is not inherently unlawful, but a close reading reveals that in their view this is not an issue because, in most cases, such market power does not exist.[350] Most IPRs have no commercial value whatsoever and therefore cannot possibly entail any market power.[351] Latter is supported by several commentators, e.g. one of them summed up the view: “to presume market power in a product simply because it is protected by intellectual property is nonsense”; another said “market power cannot be inferred, even presumptively, from the possession of intellectual property” because “a trademark, copyright, or patent excludes others from duplicating the covered name, word, or product but does not typically exclude rivals from the market.[352] In conclusion, just because company has a legal

[347] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[348] Ibid.
[349] Adedayo Fesobi, O. A comparison of the new Technology Transfer Block Exemption Regulation and its accompanying Guidelines with the US Guidelines to Intellectual property Licensing on the way they regulate “Technology Markets” as well as Product Markets. IBA Convergence 2008, 4(3)
[350] Katz, A. Making sense of nonsense: intellectual property, antitrust, and market power. Arizona Law Review 2007, 49(4).
[351] Ibid.
[352] Katz, A. Making sense of nonsense: intellectual property, antitrust, and market power. Arizona Law Review 2007, 49(4).

monopoly such as from a patent, copyright, or trademark, does not mean that the business has market power in an antitrust sense.[353]

A principle of US competition policy is the preservation of incentives that drive private companies to acquire market dominance. According to US competition law, the exercise of market power is in the interest of the global economy. Contrary to the European approach, US competition law does not strive to limit the strategic autonomy of the dominant company. It considers that the purpose of competition law is not to affirm the specific responsibility of the dominant company towards its competitors and the competitive market structure; on the contrary, the dominant company is not liable for maintaining its competitors on the market. US competition policy aims to protect competition rather than competitors. According to an American perspective, the scope of competition policy is to preserve private incentives to invest in order to gain market share and acquire a dominant position as a fair return on capital investment.[354] Therefore, the US competition law does not ban market power and monopolistic market structures as long as the previous does not result from unfair anticompetitive behaviour and the market remains contestable. Control over a strategic asset is not regarded as a barrier to entry as long as it results from a company's effort to acquire and develop a competitive advantage.[355]

The competition laws may mirror the Antitrust Guidelines and US legislation in construction, but the practical application of the articles in the EU differ from the way in which antitrust statutes are utilized in the US. The Commission monitors the effects a dominant company has on its markets for the purpose of ensuring that other companies are able to engage in competition alongside dominant market members. In contrast, the US more readily employs a *laissez faire* approach where the focus is on maintaining a system of competition for the benefit of consumers and the encouragement of innovation, instead of looking out for market participants individually.[356]

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[353] Burgunder, L.B. Legal aspects of managing technology. South-Western Publishing Co. 1995 Cincinnati.
[354] Ciriani, S., Lebourges, M. A new European competition policy for growth driven by profitable investments. The European Commission's policy in light of the modern economic growth theories. Report April 2014. ORANGE Regulatory Affairs.
[355] Ibid.
[356] Buckley, M. Licensing intellectual property: competition and definitions of abuse of a dominant position in the United States and the European Union. Brook Journal of Intellectual Property Law 2004, 29(2).

3.7. Rules applying for specific restraints

This chapter considers some of the most common licensing clauses and tries to compare how they are treated under the TTBER and the Antitrust Guidelines.

Price restraints. Most countries prohibit all forms of price-fixing.[357] The EU determines price-fixing for both competitors and non-competitors as a hardcore restriction. But still the TTBER is more liberal for price restraints between non-competitors. Although vertical price fixing constitutes a hardcore restraint of competition, imposing a maximum sale price or recommending a sale price is block exempted up to the market share threshold, provided that it does not amount to a fixed or minimum sale price.[358] Similarly, in the US, the Antitrust Guidelines horizontal cartel is per se illegal, but regarding resale price agreement that apply outright sales of goods, the Agencies will apply a rule of reason analysis.[359]

Output Restraints. The Commission especially states that minimum quantity obligations in horizontal and vertical agreements do not violate Article 101(1) TFEU and therefore do not need exemption.[360] In agreements between competitors, the limitation of output generally constitutes a hardcore restriction, though with some exceptions.[361] TTBER identifies as hardcore restrictions reciprocal output restraints on both parties and output restrictions on the licensor in respect of his own technology.[362] With respect to output restrictions in licensing agreements between competitors, the Commission manifests its more liberal approach toward intra-technology restraints and block exempts such clauses up to the market share threshold.[363] The Antitrust Guidelines simply state that output restraints among horizontal competitors have been held per se unlawful without any further elaboration.[364] Of course, the courts have reviewed general

[357] August, R. et al. International Business Law. Text, Cases and Readings. Sixth Edition. Pearson. 2013 Boston.
[358] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[359] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 5.2., p. 27.
[360] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[361] Ibid.
[362] Ibid.
[363] Ibid.
[364] Ibid.

output limitation under the rule of reason and have generally upheld such clauses in licensing agreements.[365]

Territorial restraints. Under the TTBER the legal consequences of an exclusive license depend on the competitive relationship of the parties.[366] The core concerns of the exclusivity licensing is that weaker market participants, for instance small biotech companies, may be put under pressure by larger counterparts to transfer their technology on an exclusive basis.[367] If an undertaking grants a license to a competing undertaking to produce exclusively on the basis of the licensed technology in a particular territory, such restriction is block-exempted up to the market share threshold of 20% if the agreement is non-reciprocal. However, if the parties reciprocally agree to exclusive licenses, the TTBER considers this to be a hardcore allocation of markets or customers and excludes the whole agreement from the block exemption.[368] With respect to vertical licensing agreements, the Commission recognizes that some licensing agreements with exclusivity clauses are not caught by Article 101(1) TFEU.[369] The TTBER also block exempts sole licensing below the market share threshold. In agreements between competitors the block exemption applies irrespective of whether the agreement is reciprocal or not, as long as the parties remain free to exploit their own technology.[370]

In the United States, the term exclusive rights is generally held to mean that the licensor may not give a license to another licensee or exploit the licensed property himself unless he specifically reserves the right to do so.[371] The term exclusive licensing comprises both the restriction of the right of the licensor to license others (a sole license in EU) as well as the possibility to use the technology itself.[372] The Agencies are of the view that exclusive licensing generally may raise antitrust concerns if the arrangement promotes extensively the exploitation and development of

[365] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[366] Ibid.
[367] Lugard, P. The new EU technology transfer regime. Like a rolling stone? Digiworld Economic Journal 2014, 95 (3).
[368] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[369] Ibid.
[370] Ibid.
[371] August, R. et al. International Business Law. Text, Cases and Readings. Sixth Edition. Pearson. 2013 Boston.
[372] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.

the licensors technology and therefore anti-competitively forecloses the exploitation and development of competing technologies.[373]

Restrictions on the licensee not to exploit the licensed technology in the territory of the licensor were block-exempted. In the same way, block exemption was granted to an obligation on the license not to manufacture or use the licensed product, or use the linseed process, in the territories of other licensees.[374] For agreements between competitors, the TTBER block-exempts an obligation on the licensee not to produce with the licensed technology within an exclusive territory reserved for the licensor up to the 20% market-share cap, on condition that the agreement is non-reciprocal, whereas such a restriction in a reciprocal agreement constitutes a hardcore allocation of markets. On the other hand, when the parties are not competitors, the obligation on the licensee not to produce in the territory of the licensor is subject to the general block exemption up to the 30% market-share threshold, as such clauses are neither mentioned in the hardcore list nor in the list of excluded restrictions.[375] In the US, restrictions on the licensee with respect to a particular geographic area where he may exploit the licensed territory are not of such great importance as in the EU.[376]

Difference with the approach of the Commission towards exclusive licenses is that the US Agencies do not differentiate between open exclusive licenses and licenses granting absolute territorial protection. This distinction reflects the concern of the Commission and European Community Courts about the market divisions that may be originated within the common market by the organization of a distribution system with exclusive distributors.[377] Unlike the TTBER, the Antitrust Guidelines do not contain time limitations on territorial exclusivity. This is perhaps one of the pivotal differences from the EU approach.[378]

It can be said that the EU competition policy pays more attention to intra-technology competition. Moreover, the EU competition policy attaches higher importance to the protection of intra-brand competition. Intra-brand competition is advantageous and occasionally essential

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[373] Antitrust Guidelines for the Licensing of Intellectual Property. Issued by the U.S. Department of Justice and the Federal Trade Commission. 12th of January 2017. www.justice.gov/atr/IPguidelines/download (26.04.2017), Chapter 5.4., p. 29.

[374] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.

[375] Ibid.

[376] Ibid.

[377] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).

[378] Ibid.

complement to inter-brand competition. It is also recognized that the restrictions almost always affect not only intra-brand competition, but also can expedite collusion, especially in the joint use cases. However, the Guidelines apply the same "but for" analysis for both horizontal as well as intra-technology licensing restrictions. The Antitrust Guidelines asks whether, in case of vertical, intra-technology constraints, licensing clauses that are most competition would be signed if certain clauses would be limited.[379] Requiring that each restriction in the agreement be separately justified will fail to take into consideration that agreements are usually negotiated as a whole. Therefore, acceptance of the "less restrictive" alternative by the parties at the time of the agreement could well have resulted in a different agreement, one with higher royalty rates or other more onerous terms and conditions, or it could have resulted in a decision not license at all.[380]

Sale restrictions may be used to prevent arbitrage and support price discrimination between different markets. This typically results in a decrease in consumer welfare. While some consumers are paying higher prices, others pay lower prices, collectively, consumers must pay more to finance a supplier extra profits and cover the extra costs linked to the price discrimination schemes. Thus, the welfare of consumers is generally reduced if it has not been clearly demonstrated that from the lower priced market would otherwise not be possible at all to obtain goods and services, if that price discrimination will produce undeniable increase of output.[381]

Field of use restrictions. The TTBER, generally block exempts field of use restrictions below the market share threshold.[382] However, it may be difficult to structure field of use restrictions in such a way that they do not qualify as hardcore customer restrictions, particularly when a technical field of use restriction may correspond to certain groups of customers within a product market.[383] Arrangements between non-competitors are considered to be either non-restrictive of competition or efficiency enhancing, arrangements between competitors are regarded with more

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[379] Delrahim, M., US and EU Approaches to the Antitrust Analysis of Intellectual Property Licensing: Observations from the Enforcement Perspective. U.S. Department of Justice 2004.
[380] Ibid.
[381] Lowe, P., Current issues of E.U. competition law: the new competition enforcement regime. Northwestern Journal of International Law & Business 2004, 24(3).
[382] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[383] Lugard, P. The new EU technology transfer regime. Like a rolling stone? Digiworld Economic Journal 2014, 95 (3).

suspicion about the potential allocation of markets or customers.[384] Although the block exemption applies to reciprocal agreements with symmetrical and asymmetrical field of use restrictions, the Commission is of the view that the latter pose a greater risk on competition than the former.[385] The Guidelines note that these restrictions may have pro-competitive effects by encouraging the licensor to grant licenses outside its main area of activity. The main competition concern is that the license may cease to exist as a competitive force outside the licensed field of use.[386]

In the US, field of use restrictions are analyzed under the rule of reason and are generally upheld. The Antitrust Guidelines explicitly recognize that restrictions of this kind frequently serve pro-competitive purposes. However, comparable to the approach taken in the TTBER, US courts are more critical *vis-à-vis* field of use restrictions between competitors, especially in cross-licensing agreements with the goal of allocating markets or excluding third parties from the market.[387]

Non-compete obligations. The TTBER distinguishes the restriction of the contracting parties to use their own technologies from the use of third party technologies.[388] With respect to obligations on the licensee not to use competing third party technologies, such provisions are exempted up to the market-share thresholds.[389] The main competitive risk presented by non-compete obligations is foreclosure of third party technologies.[390] When it comes to restrictions pursuant to the use of their own technologies, the TTBER is more rigid and distinguishes vertical from horizontal agreements. In agreements between competitors the restriction of the licensee's ability to exploit its own competing technology constitutes a hardcore restriction. In the same way the restriction of the ability of either of the contracting parties to carry out research and development is forbidden, unless such restriction is indispensable to preventing the disclosure of the licensed know-how to third parties. When the licensing parties are not competitors,

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[384] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[385] Ibid.
[386] Lianos, I. et al. Competition law: Analysis, Cases and Materials. Hart. 2017 Oxford. Lianos, I., Competition Law and Intellectual Property Rights: Promoting Innovation.
[387] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[388] Ibid.
[389] Ibid.
[390] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014, Section (228).

restrictions with respect to research and development and to the use of their own technologies are subject to exclusion and require individual assessment.[391]

In the U.S., non-compete obligations are discussed under the terms “exclusive dealing” or “tie-outs”. The Antitrust Guidelines define exclusive dealing as a restraint on the licensee from licensing, selling, distributing, or using competing technologies. Generally, there is no distinction made between one's own competing technologies or third party competing technologies, as the TTBER does.[392] The Antitrust Guidelines recognize the pro-competitive effects of exclusive dealing arrangements and indicate that the enforcement agencies will evaluate such clauses under the rule of reason.[393]

Grant-backs. The block exemption covers all non-exclusive grant-backs for severable improvements below the market share thresholds even where the grant-back obligation is non-reciprocal. TTBER the block exemption shall not apply to exclusive grant-back provisions for severable improvements.[394] The Commission motivates its policy direction that “by excluding exclusive grant-back obligations from the automatic exemption, it becomes less attractive for licensors to deprive the licensee who made the improvement from using its own innovation. This can be expected to favour in particular smaller licensees as they are generally less able to resist, when negotiating the original license agreement, the requirement to hand over improvements exclusively to the licensor.”[395]

Under U.S. antitrust law, grant-backs nowadays are treated under the rule of reason and the pro-competitive effects of such clauses are generally recognized. However, there is concern that a grant-back provision may adversely affect competition if it reduces the licensee's incentive to engage in research and development. Non-exclusive grant-backs are considered to be almost always pro-competitive as they leave the licensee free to license improvements in technology to others.[396] Exclusive grant-backs and assignments-back are also evaluated by the antitrust enforcement agencies under the rule of reason, as most courts had always done. Actually, courts

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[391] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.
[392] Ibid.
[393] Ibid.
[394] Ibid.
[395] Lugard, P. The new EU technology transfer regime. Like a rolling stone? Digiworld Economic Journal 2014, 95 (3).
[396] Feil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.

have likewise nearly always approved exclusive grant-backs as long as the inventing licensee was not hindered from using the patented improvement itself.[397]

Tying. In the TTBER, tying is block-exempted up to the market share thresholds, irrespective of the fact that the tied product is necessary for the proper exploitation of the tying technology, etc. Above the market share thresholds, the Commission suggests a balancing of the anticompetitive and pro-competitive effects of tying. The main focus of the TTBER is therefore on the degree of market power in either of the relevant markets. However, if the tied product is necessary for a technically satisfactory exploitation of the licensed technology or to ensure that production under the license conforms to quality standards respected by the licensor and other licensees, the Guidelines provide that they do not restrict competition.[398] In Europe tying cases have not been overwhelming in numbers, this is because the bulk of tying cases in the EU has developed under the abuse of dominance doctrine.[399] However, in *Erauw-Jacquery v La Hesbignonne*[400], the Court of Justice recognized the concept of tying.[401]

American antitrust assessment of tying cases has developed under section 1 of the Sherman Act, as arrangement in restraint of trade, and/or under section 3 of the Clayton Act, which expressly regulates exclusive dealing and tying arrangements.[402] Tying arrangements are nominally per se illegal under U.S. antitrust law. In practice, however, proving a tying claimed requires demonstrating five elements: (i) two separate products; (ii) the supplier conditions the sale of one product (the "tying" product) on the customers also acquiring the second product (the "tied" product); (iii) the supplier has substantial power in the market for the tying product; (iv) the arrangement is likely to substantially harm competition; and (v) a "not insubstantial volume of commerce affected."[403] Though, the courts formally applied a per se rule, but judicial decisions and commentators have long interpreted this rule in ways that share some features with rule-of-reason analysis.[404] Of course, there are options how to overcome per se illegality of the tying

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[397] Ibid.
[398] Ibid.
[399] Arezzo, E., Intellectual property rights at the crossroad between monopolisation and abuse of dominant position: American and European approached compared. Journal of Computer & International Law 2006, 24.
[400] ECJ 19.04.1988, C-27/87, SPRL Louis Erauw-Jacquery v La Hesbignonne SC.
[401] Communication from the Commission. Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements. OJ C 2014 No. 89/3, 28.03.2014. Section (221).
[402] Arezzo, E., Intellectual property rights at the crossroad between monopolisation and abuse of dominant position: American and European approached compared. Journal of Computer & International Law 2006, 24.
[403] Newman, J.M. Antitrust in zero-price markets: applications. Washington University Law Review 2016, 94.
[404] Heil, M. The new Block exemption Regulation on Technology Transfer Agreements in light of the US antitrust regime on the licensing of intellectual property. International review of Intellectual Property and Competition Law 2005, 36(1), pp. 31-62.

arrangements. For example, in *Stephen Jay Photography, Ltd. v. Olan Mills, Inc.*[405], the court held that a "tying arrangement cannot exist when the tying product is not sold to the consumer, but is provided free of charge.[406]

Technology pools. In Europe, technology pools - and thus patent pools - fall outside the scope of the TTBER, and are therefore analyzed according to the Guidelines. Whereas agreements falling under the TTBER are automatically considered legally valid and enforceable, those falling outside the scope of the TTBER are not per se illegal and could still qualify for exemption under Article 101(3).[407] However, in Europe the Commission arguably could strike down a patent pool as anti-competitive if it violates the Guidelines, without resorting to the European court system. This makes the approach of the EU's Guidelines appear much more proactive and much less prone to litigation than the US approach.[408]

In the US, when it is clear that a patent pool has been created mainly for the purpose of price fixing, a per se analysis is normally conducted. However, US judicial and administrative analysis of patent pool licensing arrangements is normally done under the rule of reason.. If the pro-competitive effects of a given pool are dominant (or if anti-competitive effects are minimal or non-existent), agencies and courts are unlikely to take action against the formation or licensing provisions of the pool.[409]

The importance and pro-competitive benefits of pooling arrangements have been expressed in the antitrust and competition guidelines of both the US and the EU.[410] Similarly to the US, in Europe patent pools are also assessed for anti-competitive risks and the pro-competitive potential.[411] What might occur is an eventual normalization of US and EU policy towards a patent pool approach that embodies a clearer standard by which patent pool licensing arrangements are assessed. This approach should i) place less emphasis on amorphous essentiality analyses and ii) create more awareness of the time-sensitive nature of any essentiality analysis.[412] As such it is arguable that the EU, which is fundamentally more

[405] U.S. District Court, E.D. Virginia, Norfolk Division, 713 F.Supp 937 (1989), Stephen Jay photography, Ltd. v. Olan Mills, Inc.
[406] Newman, J.M. Antitrust in zero-price markets: foundations. University of Pennsylvania Law Review 2015, 164(1).
[407] Lavine, M.A., Ripples in the patent pool: the impact and implications of the evolving essentiality analysis. NYU Journal of Law and Business 2008, 4(2).
[408] Ibid.
[409] Ibid.
[410] Ibid.
[411] Ibid
[412] Ibid.

restrictive of trading/licensing practices than the US, might be reluctant to quickly abandon its equally strict requirements that patent pools contain only essential patents.[413]

Settlement agreements. Mainly settlement agreements include non-challenge, pay-for-delay or pay-for-restriction (reverse payment settlements in the EU) clauses. Most developed countries interpret the unfair competition laws as forbidding non-challenge clauses in patent and copyright licenses.[414] It should be obvious that none of the jurisdictions surveyed currently take a suitable approach to non-challenge clauses. To the extent the lack of case law on these clauses in the US is a reflection of per se legality under antitrust law, the current standard is clearly too lenient.[415] Moreover, non-challenge clauses are one of the areas in which the US and the EU have diverged. While US antitrust law has largely left these clauses untouched, the EU, to the extent its view is embodied by the Commission, has taken a fairly hostile attitude towards them, In fact, largely due to the Commission's view, these clauses have mostly been expunged from European licensing agreements.[416] Regarding reverse-payment settlements, the approach of the regulators in both the US and the EU has been broadly similar - reverse-payment patent settlement agreements should be presumptively illegal.[417]

In the EU, settlement agreements between competitors which include a license for the technology and market concerned by the litigation but which lead to a delayed or otherwise limited ability for the licensee to launch the product on this market may under certain circumstances be caught by Article 101(1). Investigations are necessary especially when the licensor gives a financial or other incentive to the licensee within the settlement agreement in return to agreeing on stricter conditions than would otherwise have been related to the licensor's technology. The Commission noted that the potentially problematic are the following settlement agreements: settlement agreements that limit entry by generic suppliers, if the restrictions are imposed on the generic suppliers that exceed the limits of the relevant patent; and settlement agreements that limit entry by generic suppliers, if a patent holder knows that this patent does not meet the patentability criteria, for example, if a patent is granted on the basis of false,

[413] Lavine, M.A., Ripples in the patent pool: the impact and implications of the evolving essentiality analysis. NYU Journal of Law and Business, vol 4:605, 2007-2008.
[414] August, R. et al. International Business Law. Text, Cases and Readings. Sixth Edition. Pearson. 2013 Boston.
[415] Cheng, T.K., Antitrust treatment of the no challenge clause. New York University Journal of Intellectual property and entertainment law 2016, 5(2).
[416] Ibid.
[417] Clancy, M. et.al. Reverse-payment patent settlements in the pharmaceutical industry: An analysis of U.S. antitrust law and EU competition law. The Antitrust Bulletin 2014, 59(1).

erroneous or incomplete information.[418] This means that settlement agreements, which include licenses that may likely raise issues in competition context, if the initiator provides value transfer in exchange for generics' agreement that includes terms more restrictive than those that would be agreed upon absence of value transfer.[419]

In 2013 *Lundbeck* case[420], the Commission ruled that the settlement agreements were allegedly ulawful (or anti-competitive by their object), and therefore could not assess whether the contracts had effects adversarial to competition. The Commission based its decision primarily on the following statements. First, the parties were at least potential competitors at the moment of entering into the contract, and secondly, a significant value was transferred under the agreement, thirdly, there is a link between the value transfer and the others' responsibilities not to compete in a certain period of time.[421] Subsequently Lundbeck, and all generics suppliers had submitted a complaint to the European Court of Justice against the Commission decision. During the appeal several important questions were asked: whether Lundbeck and generic parties were potential competitors, especially taking into account the Lundbeck patent rights; whether the reverse payment settlements restrict competition by object (which means that the Commission is not required to prove the anti-competitive effects of restriction); whether the settlement agreement restricted competition in the market outside the scope of Lundbeck patent rights; does patents have exclusionary power if they are confirmed in court proceedings or other options are exhausted before entering into the settlement agreement.[422]

The new Guidelines provide some limited guidance on justification of restrictions related termination on challenge regarding to know-how, especially in cases when the know-how is practically unrecoverable as soon as it is disclosed, and when the licensor in a relatively weak market position is licensing to a stronger licensee (know-how has also relatively lower potential for chilling innovation, than exclusionary IP rights, which is definitely motivating factor for Commission's doubtful approach)[423]

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[418] Clancy, M. et.al. Reverse-payment patent settlements in the pharmaceutical industry: An analysis of U.S. antitrust law and EU competition law. The Antitrust Bulletin 2014, 59(1).
[419] Ibid.
[420] ECJ 8.09.2016, T-472/13, H. Lundbeck A/S and Lundbeck Ltd v European Commission.
[421] Clancy, M. et.al. Reverse-payment patent settlements in the pharmaceutical industry: An analysis of U.S. antitrust law and EU competition law. The Antitrust Bulletin 2014, 59(1).
[422] Ibid.
[423] Lawrance, S. The competition law treatment of no-challenge clauses in licence agreements: an unfortunate revolution? Journal of Intellectual property Law & Practice 2014, 9(10).

One possible explanation, why the US, compared to EU, has not addressed non-challenge clauses, is that the various Courts of Appeals have generally taken a fairly hostile attitude toward non-challenge clauses in licensing agreements, notwithstanding the more lenient approach of the Federal Circuit. Given that the case law suggests that is usually licensees that challenge the validity of non-challenge clauses, it would be more straightforward for the licensee to seek to invalidate the clause under patent law than to attempt to challenge it under antitrust law. This is particularly the case given that the rule of reason, as opposed to the per se rule, most likely applies. The relative attractiveness of patent law as an avenue for invalidating non-challenge clauses probably explains the lack of case law under antitrust law.[424] For an example, *Actavis case*[425], a firm Actavis with a patent essential to manufacturing a product paid a rival to stay out of that market for a specified period of time. There was no integration of production, sharing of technology, or licensing. Outside the patent law context, such an agreement would be unlawful per se and could even be a criminal violation.[426]

The seemingly strict approach to non-challenge clauses under EU competition law would suggest that this jurisdiction believe that these clauses can inflict considerable consumer harm that warrants the scrutiny of competition law.[427] From the other side of the coin, one common justification for non-challenge clauses is that they protect patentees from wasteful and vexatious lawsuits from licensees. Litigation costs are transaction costs in the patent system that can be avoided by no challenge clauses.[428] These clauses are typically included in license agreements to avoid a licensee from "biting the hand that feeds it" and challenging the intellectual property rights that have been licensed to it.[429]

To summarize, the clear trend of the US system is towards shielding IP rights against antitrust.[430] Therefore the threats to related laws are different within both jurisdictions: the US struggles with the dilemma that a broad antitrust interventions may reduce the incentives to invest and thus chill the scientific and technological innovation; in the EU at the same time, failure to scrutinize

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[424] Cheng, T.K., Antitrust treatment of the no challenge clause. New York University Journal of Intellectual property and entertainment law 2016, 5(2).
[425] U.S. Supreme Court, 133 S.Ct. 2223 (2013), FTC v. Actavic, Inc.
[426] Hovenkamp, H. The Rule of Reason and the Scope of the Patent. San Diego Law Review 2015, 52(3).
[427] Cheng, T.K., Antitrust treatment of the no challenge clause. New York University Journal of Intellectual property and entertainment law 2016, 5(2).
[428] Ibid.
[429] Lawrance, S. The competition law treatment of no-challenge clauses in licence agreements: an unfortunate revolution? Journal of Intellectual property Law & Practice 2014, 9(10).
[430] Coco, R. Antitrust liability for refusal to license intellectual property: a comparative analysis and the international setting. Marquette Intellectual Property Law Review 2008, 12.

anticompetitive behaviour can result in foreclosure of markets to the detriment of consumers, competitors, and the efficiency of the economic system.[431]

The Guidelines and the Antitrust Guidelines ultimately were formed on different legal foundations, which may prevent total harmonization of the two sets of guidelines for many years to come. The Antitrust Guidelines focus on possible harm to inter-technology competition from licensing arrangements. The TTBER and Guidelines express concerns about loss of inter-technology competition. The EU prohibits agreements that limit trade between Member States. The US antitrust laws apply to interstate commerce, but do not have the promotion of interstate trade as a specific objective.[432]

Some practitioners and scholars consider the formalistic approach of the TTBER to be an advantage of the EU system. They argue that, because of the TTBER it is easier under EU competition law than under US antitrust law to determine whether a licensing agreement is legally enforceable.[433] Some have argued, however, that the focus of the TTBER on individual circumstances and assessment, notwithstanding the further guidance provided in the Guidelines has introduced too much uncertainty for business and innovation.[434] Generally TTBER has led to a significant convergence of EU and US licensing policy, especially in those cases when it comes to licensing agreements between competitors: similar hardcore list similar safe harbor with its market share threshold, and a similar structure of the rule of reason analysis method used outside the safe harbour.[435]

It seems that the EU IP law is quite a rigid one while the US antitrust law is quite flexible. Further, the US government has strengthened its protection of IPRs and when comes to the implementation of the antitrust law, it will consider more US interests if there is a conflict between domestic market and international market. Based on the observation of many antitrust law cases, US firmly advocate national interest when dealing with conflicting interests is there is a conflicting interest between domestic enterprises and foreign enterprises. Even if there is case

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[431] Coco, R. Antitrust liability for refusal to license intellectual property: a comparative analysis and the international setting. Marquette Intellectual Property Law Review 2008, 12.

[432] Lavine, M.A., Ripples in the patent pool: the impact and implications of the evolving essentiality analysis. NYU Journal of Law and Business, vol 4:605, 2007-2008.

[433] Opi, S.B. The approaches of the European Commission and the U.S. antitrust agencies towards exclusivity clauses in licensing agreement. Boston College International and Comparative Law Review 2000, 24(1).

[434] Edwards, L., Waelde, C. Law and the Internet. Third edition. Hart. 2009 Oxford. El Brown, A. Intellectual Property, Competition and the Internet.

[435] Lowe,P., Current issues of E.U. competition law: the new competition enforcement regime. Northwestern Journal of International Law & Business 2004, 24(3).

of abusing IPR, courts will tend to flexibly deal with it under the antitrust law based on the national interests.[436]

[436] Minkang, G. Anti-abuse of intellectual property rights under anti-monopoly law: China's approaches. Frontiers of Law in China 2015, 10(3).

Conclusion

The purpose of this thesis is to analyze and compare Technology Transfer Block Exemption Regulation and its accompanying Guidelines with Antitrust Guidelines for Licensing Intellectual Property. The hypothesis of this thesis is that regarding the transfer of technology European Union competition law has more extensively limited the exploitation of intellectual property laws compared to the United States antitrust law. The hypothesis was confirmed, the reasons are presented below.

First of all, TTBER and its Guidelines are very specific in detail, which probably shows its' origin of code-based system of law. Conversely, the Antitrust Guidelines contain much fewer details and leaves more room for interpretation and weighing of each case individually. Next difference between US and EU approach is that the Antitrust Guidelines are not law and they are plainly designed to help companies predict whether Agencies will initiate antitrust concerns against their business conduct. However, the TTBER has regulative force, but the Guidelines have only persuasive influence.

Another reason of excessive intervention of EU to intellectual property rights can be derived from the general approach to intellectual property and competition/antitrust law. In Europe, intellectual property rights have been viewed suspiciously, they have been considered as barriers to entry restricting the production, partitioning off the single market, and raising prices. Contrary, the US policies are more focusing to hegemony of the intellectual property rights and minimum intervention to antitrust law. As well, the US seems to view competition as a goal in itself, therefore markets can be corrected themselves. In Europe, competition law strives to limit the strategic autonomy of the dominant company. It considers that the purpose of competition law is to affirm the specific responsibility of the dominant company towards its competitors and the competitive market structure and the dominant company can be liable for maintain its competitors on the market. However, both jurisdictions understand the importance of protection of intellectual property law in long-term and its influence on the spurring of innovation. In addition, both jurisdictions share the same aim: consumer welfare and promotion of innovation.

In the United States, both IP and antitrust are primarily matters for federal laws and enforcement. In contrast, the EU system faces in an inconvenient divergence: intellectual property is still in no small part a matter for national laws, especially for patents, and IP rights are enforced mostly on a national basis, while competition is primarily a matter of Community law and enforcement.

The centralized nature of the EU competition law does not provide the opportunity for such leeway that, in the US, same level of courts can have diverging rulings. This could be the reason of more rigid approach and higher penalties of European Court of Justice and Commission in cases such as *Microsoft*, which have been ruled in both – the EU and the US.

However, the author, hereby, presents differences and similarities of the TTBER and Guidelines and the Antitrust Guidelines, for the purpose of answering the first research question. The answer to the first question is that both regimes create safe harbours, both recognize similar hardcore restraints or per se illegal restraints, as price fixing, output restraints and market allocation. As well both weigh the pro-competitive and anti-competitive effects of the arrangements. In some cases, the ECJ have even used the rule of reason analysis. Both identify, that vertical restraints are less harmful than horizontal. TTBER and its Guidelines and the Antitrust Guidelines are similar, though they are not identical. The EU is more concerned about distinguishing the parties as competitors or non-competitors. The US puts emphasis on assessing horizontal or vertical nature of restraint and on the effects of licensing terms. As well, the EU worries more about the potential restrictive effects of vertical, i.e. intra-technology restrictions. The TTBER regulates excluded restrictions, which can be withdrawn from the licensing agreements. However, this might not be the most feasible solution, as the terms in the contract are negotiated based on the entirety of contract. Acceptance of "less restrictive" alternative during the negotiations may cause for example higher royalties or some other onerous terms.

It can be concluded that there exists divergences between the EU and the US technology transfer approach. It is obvious, that the EU has been mainly favoring the "interventionist" approach and the US has preferred the economic freedom and minimal intervention. The answer to the second research question, what should be the balance of limitation of exploitation of intellectual property rights in order that the innovation would spur, is extremely complicated to answer. However, from the purely statistical perspective, the author should agree that the US has accomplished the task of "blandishing" high-tech companies, which main business activity is innovation or research and development, much more efficiently than the EU. However, the relationship between intellectual property law and competition law in Europe is much more complicated due to the fractioned Community with all its Member States and national legislation. Therefore, the author finds that, no matter that it is hard to delineate the proper intervention balance, probably it should not be answered at all, mainly because the libertarian US antitrust regime might not benefit in the code-based EU and *vice versa*. To summarize, the answer to the second research questions is that it is extremely difficult to strike a proper balance between over- and under-regulation, the long-standing debate should be resumed. The importance of this issue is well-known, though it should not be forgotten, that both jurisdictions have evolved their competition and IPR regimes for decades and even centuries on their evolutionary traditions, which are the basis of relative reasoning.

The author suggests to execute further comprehensive analysis of the case law of both system regarding terms in the licensing arrangements. This analysis can be based on qualitative, but also quantitative research as to determine which licensing arrangements arise more disputes in each jurisdiction. This, subsequently, will draw a clear picture for the companies in order to acknowledge which licensing terms can be beneficial and which should be avoided in respective jurisdictions.

Rescmee

Euroopa Liidu üldine konkurentsivõimekus on markantselt vähenenud viimaste kümnendite jooksul. Mis puutub innovatsiooni EL jääb Ühendriikidest maha. Tehnoloogia ja uuenduste sektori mahajäämise põhjus võib seisneda konkrentsiõiguse ja intellektuaalse omandi õiguse vahekorrast. Nende õiguste põhiline eesmärk on leida tasakaal innovatsiooni kaitse üle- ja alareguleerimise vahel. Ühendriikide võimuasutused on pigem leidnud, et intellektuaalne omand vajab olulisemat kaitset ning konkurentsiõigus ei tohiks liigselt sekkuda ettevõtlusse. Vastupidiselt, Euroopa Liit pigem "kontrollib" konkurentsiõigust.

Magistritöö eesmärgiks on analüüsida ja võrrelda Euroopa Liidu tehnosiirde regulatsiooni ja selle juurde kuuluvaid juhiseid Ameerika Ühendriikide konkurentsiõiguse juhistega intellektuaalse omandi litsentseerimisel. Töö hüpotees on, et tehnosiirde puhul Euroopa Liidu konkurentsiõigus on ulatuslikult piiranud intellektuaalse omandi kasutamist ja käsutamist võrreldes Ameerika Ühendriikidega. Autor vastab magistritöös kahele uurimisküsimusele: mis on nende kahe jurisidiktsiooni tehnosiirde erinevused ja sarnasused ning mis reguleerimise tasakaal peaks kehtima intellektuaalse omandi õiguste kasutamisel, nii et innovatsioon õitseks. Autor viis läbi võrdleva, analüütilise ja kvalitatiivse uuringu. Andmed olid kogutud raamatukogust ja avalikest andmebaasidest.

Kokkuvõttes, mõlemad tehnosiirde regulatsioonid on sarnased, kuid mitte identsed. Mõlemal režiimil on oma grupierandid, mõlemad tunnistavad sarnaseid raskekujulisi piiranguid, näiteks hinnakokkulepped, tootmismahu piiramine ja turu jagamine. Samuti mõlemad tasakaalustavad lepete konkurentsi soodustavaid ja takistavaid mõjusid ning põhistavad, et vertikaalsed piirangud kahjustavad vähem konkurentsi kui horisontaalsed. Samas, aga EL jaoks on võtmetähtsusega eristada konkurente ja mittekonkurente, USAs seevastu horisontaalse ja vertikaalse piirangute mõju litsentseerimise sätetele. Samuti, EL murekohaks on potentsiaalsed piiravad mõjud intra-tehnoloogiale. Lähtuvalt ülaltoodust, EL ja USA vahel eksisteerivad erinevused põhinevad enamjaolt vastavatele õigussüsteemidele: kodifitseeritud kontinentaal-euroopa õigussüsteem ja angloameerika common-law õigussüsteem. On selge, et EL pooldab pigem "sekkuja" lähenemist ja USA eelistab majandusliku vabadust ning minimaalset sekkumist. Vastata teisele uurimisküsimusele, mis on intellektuaalse omandi õiguste kasutamise piiramisel õige tasakaal, et innovatsioon õitseks, on äärmiselt keeruline. Kuigi, statistilisest vaatest, autor peab nõustuma, et USA on saanud paremini hakkama kui EL innovatsiooni ja uurimistegevusega tegelevate ettevõtete turule meelitamisega. Teiselt poolt, on EL süsteem, aga ka vahekord konkurentsiõiguse ja intellektuaalse omandi õiguse vahel, oluliselt keerukam seoses Ühenduse killustumisega liikmesriikide kaupa: siseriikliku ja EL õiguse läbipõimumisega. Seetõttu, autor leiab, et vaatamata õige tasakaalu sekkumise ja sekkumata jätmise vahel leidmise keerukusele, tuleb teine uurimisküsimus jätta vastamata, just seetõttu, et liberaalse USA konkurentsrežiim ei pruugi olla sobilik kodifitseerimisel põhinevas Euroopas ja vastupidi.

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