Restrictions of Competition in Licensing Agreements: The World-Wide Convergence of Competition Laws and Policies in the Field of Intellectual Property

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Abstract

Competition law aims at promoting the competitive process by preventing anti-competitive practices, while IP law provides exclusive rights to authors and inventors. Although tensions between the two fields of law exist, they share the common goal of improving incentives for innovation. It is a difficult task for competition policymakers to determine the relationship between competition and exclusivity. In practice, the most important challenge concerns restrictions on competition in licensing agreements. This article aims to examine the existing approaches at the intersection of competition law and IP from a comparative perspective, focussing on the situation in the US, the EU and Korea. While differences exist, for example, as regards the abuse of market dominance, considerable convergence can be seen in the competition law treatment of licensing agreements. This development is welcome, because harmonisation in this field is particularly conducive to the international transfer of technology.

Keywords: Competition Law, IP Law, Comparative Law, IP Licensing, Convergence, Harmonisation, Safe Harbour, Market Share, Market Definition, New Economy, Transfer of Technology

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1. INTRODUCTION

Competition law aims at safeguarding the competitive process in the market by preventing anti-competitive agreements and the abuse of market dominance, as well as by controlling mergers[1], while intellectual property (IP) law provides exclusive rights to inventors and authors, thereby ensuring incentives for innovation, which include the discovery, development, and commercialisation of new products.[2] Often, this exclusivity is considered to be innately monopolistic.[3] In recent times, however, the view has increasingly gained ground that intellectual property rights (IPRs) do not necessarily confer market power, let alone a dominant position or a monopoly.[4] The Chicago School scholars were the first to argue that the presumption of an inherent tension between IP law and competition law is a mistake because of the confusion of property rights with monopoly.[5] Today, the view is widespread that competition policy and IP protection stand in a complementary relationship, rather than in strict opposition.[6] This more reconcilliatory approach underlines the common goals of both fields of law without denying the tension in specific cases.

It is only from a short run perspective that there is a contradiction between the exclusion of (static) competition by IPRs and the goal of competition law to secure and intensify competition. As soon as a dynamic stance is taken, the similarities between the two fields of law become clearer: Not only IP law, but also competition law, strive to foster innovation and technological progress.[7] Only the methods to achieve this goal are different: IP law excludes competition by imitation in order to promote competition by substitution. Competition law, by contrast, strengthens the competitive process because experience shows that innovation is yielded most frequently in an economic environment of optimal competitive intensity.[8] As

[1] In the United States, the term antitrust law is used to indicate the body of law prohibiting anti-competitive practices. Outside of the United States, competition law is more commonly used in many jurisdictions. In this article, we will continue to use competition law, except when referring to US law.
[2] Carrier 2009, p. 19.
[3] Cf. Hovenkamp 2011, p. 260.
[4] For the EU, see European Court of Justice, Joint Cases C-241/91 P and C-242/91 P, *RTE and ITP v. Commission* (‘*Magill*’), ECR 1995, I-743, para. 46: "So far as a dominant position is concerned, it is to be remembered at the outset that mere ownership of an intellectual property right cannot confer such a position." For US law, *see* the US Supreme Court, *Illinois Tool Works v. Independent Ink*, 547 U.S. 28 (2006), reversing the presumption resulting from older case-law that a patent confers market power. See also the US Licensing Guidelines, at 2.2.
[5] See the ground-breaking study of Bowman 1973; for a more recent analysis, see Landes and Posner 2003, p. 374. However, there are some criticisms of this property view. See e.g., Gilbert 2008, p. 524 et seq.
[6] For an overview on the changing concepts in the relationship between IP and competition law, see Abbott 2014.
[7] Dynamic efficiency usually means the gains from innovation and the emergence of new technologies. See Crane 2015, p. 10.
[8] Lowe and Peeperkorn 2005, p. 266. For the optimal intensity of competition, see Aghion et al. 2005.

regards the relationship between static and dynamic efficiency, it seems preferable to give precedence to the latter form.[9]

Many competition regimes admit the importance of rules at the intersection of competition law and IP, but it is not an easy task to provide an appropriate framework or guidance in the balancing test.[10] They often declare that IP law and competition law share the ultimate goal of improving welfare, which underlines the symbiotic relationship between these branches. Nevertheless, tensions between them remain, and competition authorities and courts have faced difficult cases covering all subfields of competition law, i.e. restrictive agreements, the abuse of dominance and merger control. Therefore, the task of achieving an appropriate balance between fostering incentives and maintaining the competitive process in IP-related contexts is crucial.[11] For this reason, competition policymakers in different jurisdictions have started designing legal frameworks by providing various hard and soft laws to offer guidance.

This article aims to examine the existing approaches to the intersection of competition law and IP from a comparative perspective, choosing the example of licensing agreements and taking into account US, EU and Korean law. The article continues with three sections. Section 2 discusses the general features of licensing guidelines in the three jurisdictions mentioned. Section 3 then demonstrates the process of legal transplantation and convergence focusing on the market share threshold method. This section also discusses related problems, including market definition and the relationship to market dominance scrutiny. Section 4 finally summarises and concludes this article.

2. The Establishment of Guidelines: A Comparative Perspective

2.1 The United States: From the Nine No-No's to the Licensing Guidelines

The expansion of the scope of antitrust law through US case law, which is based on diverse economic theories,[12] has influenced the US's overall approach to IP and other competition regimes.[13] In particular, patent misuse, which is one of the key examples, is blended with competition law theories, as the US courts have held that many business practices that represent

[9] Sidak and Teece 2011, p. 93.
[10] Myers 2007, p. 3.
[11] See e.g., Goyder and Albors-Llorens 2009, p. 261.
[12] Leslie 2011, p. 44. The author argues that the evolution of economic theories on how to balance the concerns of competition law and IP law has helped courts to begin issuing more nuanced opinions on this issue.
[13] Leslie 2011, p. 41.

patent misuse also may infringe antitrust law.[14] However, at least since the adoption of the Licensing Guidelines and the *Illinois Tool Works* decision,[15] the US regime has started with the idea that the mere existence of an IP right does not necessarily mean a monopoly, although some IPRs may create market power, particularly when there are no strong substitutable technologies for the IP. Therefore, antitrust law and IP law are considered to be complementary. Both laws enhance market competition by encouraging competitors to enter the market rigorously,[16] which is related to its contestability.[17] Hence, the inclusion of potential competitors in the market is also important.[18]

The US adopted antitrust law as early as 1890[19] and was the first country to give detailed antitrust guidance on IP rights, the so-called 'Nine No-No's' in the 1970s,[20] which summarised the government agencies' views at that time about potential violations of antitrust law. The now withdrawn Nine No-No's provided a list of prohibitions on patent licensing, such as package licensing, tying, compulsory grantback, vertical restraints, etc.[21] The prohibitions of the Nine No-No's were criticised by numerous commentators because of their inflexibility.[22] Critics condemned the Nine No-No's on the basis that they were inconsistent with US case law and were not economically sound.[23] Furthermore, the black list of the Nine No-No's could generate a typical strait-jacket effect, which was inconsistent with the case-law tradition.[24]

The Nine No-No's were revoked in 1981. In 1995, the US antitrust authorities adopted the Antitrust Guidelines for the Licensing of Intellectual Property (hereinafter "US Licensing Guidelines" or simply "Guidelines").[25] The US Licensing Guidelines are considered to be more

[14] Leslie 2011, p. 42.
[15] See *supra* note 4.
[16] See e.g., U.S. Department of Justice and Federal Trade Commission 2007, p. 2. The degree of competition and innovation is deeply related to market entry, which involves alternatives. See also Geroski 1999, p. 19.
[17] Heinemann 2008, p. 78 et seq. Heinemann argues that the contestable market theory can justify IP protection and the limits by competition law enforcement, which balances the pros and cons of each law.
[18] Teece 2011, p. 221.
[19] Sometimes, US antitrust law is given credit as the first competition law of the modern world. In fact, Canada adopted a competition law in 1889 (i.e. one year earlier than the Sherman Act in the US), although this law never achieved a status comparable to the Sherman Act, see Gerber 2010, p. 259.
[20] Wilson 1970; Carrier 2009, p. 77.
[21] See e.g., ABA 2007, p. 77; Gavil et al. 2008, p. 1195. The Nine No-No's covered: (i) tying of unpatented to patented products, (ii) mandatory grantbacks, (iii) post-sale resale restrictions, (iv) tie-outs (restricting a licensee's ability to deal in products outside the scope of the patent), (v) exclusive licensing, (vi) mandatory package licensing, (vii) compulsory payment of royalties not reasonably related to sales of the patented product, (viii) restrictions on sales of unpatented products made by a patented process, and (ix) utilising vertical price-fixing involving the licensing of patented products.
[22] Myers 2007, p. 79.
[23] Carrier 2009, p. 77; Leslie 2011, pp. 42-43; Sprigman 2012, p. 351.
[24] Choi 2011, p. 122
[25] US Antitrust Guidelines for the Licensing of Intellectual Property.

balanced than other previously designed US policies. The Guidelines are not legally binding, but only reflect the US agencies' approach to IP issues. However, the Guidelines are highly significant, because they provide a clear explanation of the relationship between antitrust and IP. The Guidelines have been regarded as the starting point for discussions on this hybrid area of law.[26] Furthermore, they have exerted a tremendous influence on competition policy in other jurisdictions, thus transplanting US legal techniques into other regimes.

Section 2 of the US Guidelines embodies three general principles for articulating the relationship between antitrust and IP as follows: (i) the enforcement agencies regard IP as being essentially comparable to other types of property; (ii) the agencies do not presume that IP creates market power; and (iii) the agencies recognise that IP licensing allows undertakings to combine complementary factors of production and is generally pro-competitive. Based on this outline, it provides a safety zone under Section 4.3, thereby ensuring some degree of certainty and encouraging the transfer of technology.[27] It declares that the antitrust authorities would not prohibit a restraint in an IP licensing agreement where (i) the restraint is not facially anti-competitive, such as, e.g., a per se violation,[28] and (ii) the total market share of the licensor and its licensees is not more than 20 per cent in each relevant market.

If market share data are not available or do not sufficiently mirror the competitive situation, the safety zone criteria for non-product markets are as follows. First, in a technology market,[29] the US enforcement agencies do not challenge a restraint in an IP licensing agreement if (i) the restraint is not *prima facie* anti-competitive and (ii) there are four or more independently controlled technologies that can substitute for the licensed technology ("4-plus-test"). Second, in an innovation market,[30] the federal agencies also do not challenge a restraint in an IP agreement that is not facially anti-competitive and (ii) at least four independently controlled entities hold the essential and specialised assets or characteristics and the incentive to engage

[26] Leslie 2011, p. 45.
[27] However, some argue that the self-assessment framework in the context of a safe harbour generates problems of legal uncertainty, because neither market definition nor the evaluation of efficiencies is an exact science. See Kuik 2007, p. 170.
[28] This type of restraint includes hard-core restrictions, such as price fixing and output restriction.
[29] Sec. 3.2.2 of the US Guidelines explains that "[t]echnology markets consist of the intellectual property that is licensed … and its close substitutes—that is, the technologies or goods that are close enough substitutes significantly to constrain the exercise of market power with respect to the intellectual property that is licensed."
[30] Sec. 3.2.3 of the US Guidelines clarifies that "[a]n innovation market consists of the research and development directed to particular new or improved goods or processes, and the close substitutes for that research and development."

in R&D which can be a close substitute for the R&D activities. This innovation market can be understood as competitive.[31]

In addition, the Guidelines articulate that, although some horizontal agreements can receive the benefit of the safety zone, hard-core practices, such as price-fixing, output restrictions, market allocations, and group boycotts, which are treated as per se illegal, cannot fall within the safety zone.[32] In summary, the US formulation of safety zone criteria follows a three-prong test: (i) 20 per cent market share threshold, (ii) four or more alternative technologies or entities,[33] and (iii) a scrutiny of per se illegal restraints.[34] Market share thresholds are at the heart of the analysis, with no tolerance for hard-core practices.

2.2 The European Union: The Development of Block Exemption Regulations

Similar, but not identical to the US regime, the importance of IP is often highlighted in the commercial areas in the EU facing complex issues, including market integration.[35] Accordingly, the EU Commission (hereinafter the Commission) adopted its first Technology Transfer Block Exemption Regulation (TTBER) in 1996,[36] which repealed the old block exemption regulations for patent and know-how licences.[37] The 1996 TTBER was replaced by Regulation 772/2004,[38] which is regarded as a new stage of TTBER development as a result of its flexible and economic approach,[39] and finally, Regulation 316/2014 has taken over and has repealed

[31] Glader 2006, p. 225.
[32] Sec. 5.1 of the US Guidelines.
[33] For the '4-plus-test', see Heinemann 2011b, p. 203.
[34] See e.g., ABA 2007, p. 491.
[35] IP rights traditionally have been granted at the Member State level, creating tensions between free trade and the competition rules of the EU. Not only the existence of national IP laws in each Member State, but also their differences, raise concerns, because the diversity of laws can be detrimental to the objective of an EU internal market. See e.g., Coates et al. 2014, p. 1145; Jones and Sufrin 2014, p. 847; Rose and Bailey 2013, pp. 674-675; Whish and Bailey 2012, p. 768. For further discussion about the problem of the internal market and IP in the EU, see Caggiano 2012, p. 3 et seq.; Cornish et al. 2010, p. 818 et seq.; Heinemann 2011a, p. 303 et seq. See also the fundamental Cases 56 & 58/64 *Consten and Grundig v Commission* [1966] ECR 299.
[36] Commission Regulation (EC) No 240/96 of 31 January 1996 on the application of Article 85(3) of the Treaty [now Article 101(3) TFEU] to certain categories of technology transfer agreements, OJ L 31/2.
[37] Commission Regulations (EEC) No 2349/84 of 23 July 1984 and 556/89 of 30 November 1989. In particular, the emergence of complex cases of patent licences in the 1970s seemed to bring about the thought of adopting regulations for technology transfer agreements. See e.g., Greaves 1994, p. 9; Korah 1996, pp. 2-3; Ritter and Braun 2004, pp. 791-792.
[38] Commission Regulation (EC) No 772/2004 of 27 April 2004 on the application of Article 81(3) of the Treaty to categories of technology transfer agreements, OJ L123/11.
[39] Anderman 2008, p. 110. The legal framework of the TTBER demonstrates newly developed features: (i) a more economic goal to EU competition policy, (ii) the use of economic analysis, (iii) the offer of safe harbour based legal certainty, and (iv) the procedural change in enforcement. See also Anderman and Schmidt 2011, pp. 203-204.

the older text.[40] There were major developments in the TTBERs, which were the abandonment of white lists and the considerable shortening of black lists.[41] This development was apparently inspired by the repeal of the Nine No-No's in the US and the adoption of market share thresholds subject to exceptions for hard-core restrictions.

The development of the different block exemption regulations is characterised by the transition from a rather 'formalist and rigid' approach creating strait-jacket problems to a generally positive view of licensing, because it facilitates the distribution of knowledge and skills and maximises the beneficial outcomes of innovation through licensing and technology exchange.[42] The automatic exemption of certain technology transfer agreements thus reduces the private and public administrative costs and burdens of a case-by-case scrutiny under Article 101(1) and (3) of the Treaty on the Functioning of the European Union (TFEU).[43] In addition to the 2014 TTBER, the Commission also provides TT-Guidelines[44] which clarify the implementation of the law in detail.

The TTBER has a two-stage-exemption safe harbour. Article 3 TTBER states that, where the combined market share of competing undertakings does not exceed 20 per cent or where that of non-competing undertakings is less than 30 per cent, the agreeing parties can receive exemption benefits. However, the benefit of the block exemption regulation disappears if undertakings include a hard-core restriction, even if their market share satisfies the conditions in Article 3. The lists of hard-core restrictions are different for competitors and for firms standing in a vertical relationship: For the former, the list includes price-fixing, output restrictions, market allocations, and restrictions on the licensee's ability to exploit its technology rights or on carrying out R&D. In vertical relationships, the black list contains resale price maintenance (with an exception for maximum sale prices and non-binding price recommendations), the exclusion of certain passive sales, and certain restrictions of sales to end-users in selective distribution systems.[45]

[40] Commission Regulations (EU) No 316/2014 of 21 March 2014 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of technology transfer agreements, OJ L93/17. For further detail about TTBER development, see also Goyder and Albors-Llorens 2009, pp. 263-281; Anderman 2006, pp. 76-89.
[41] For further details, see Korah 1996, p. 158 et seq.
[42] See Drexl 2008, p. 29; Fine 2006, p. 50; Lowe and Peeperkorn 2005, p. 278; Jones and Sufrin 2014, p. 867.
[43] Armillotta 2010, pp. 96-97.
[44] Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements, OJ 2014, C 89/3.
[45] Art. 4 TTBER.

Unlike the US Guidelines, the EU's TTBER is legally binding, thereby ensuring effective competition and providing a sufficient level of legal certainty for undertakings,[46] although the Commission may withdraw the benefits of the exemption in certain individual cases or declare the regulation inapplicable in certain economic sectors where parallel licensing agreements cover more than 50 per cent of a relevant market.[47] Overall, this scheme is based on the simplification of the legal framework and on the adoption of an effects-based, rather than a form-based approach.[48] Its inspiration by the US Licensing Guidelines is palpable: Market-share based criteria, in conjunction with the exclusion of hard-core restrictions, is supposed to give simple and clear guidance to practitioners and undertakings, thereby reducing legal uncertainty in the competition law evaluation of IP practices.

2.3 The Republic of Korea: The One-Size-Fits-All Guidelines

The Korean competition authority, the Korea Fair Trade Commission (the KFTC), adopted its guidelines on IP, the Review Guidelines on Unfair Exercise of Intellectual Property Rights (hereinafter the Korean IP Guidelines), which have been revised four times since 2000.[49] The Korean IP Guidelines, which are pursuant to the purposes of the Korean competition law, the Monopoly Regulation and Fair Trade Act (MRFTA),[50] stipulate that it aims to improve the consistency and predictability of the law's enforcement and to enhance fair trade practices through the criteria for the exercise of the IP rights provided by the Guidelines.[51] In particular, the Guidelines declare its applicability to foreign undertakings, confirming extraterritorial application.

Similar to the approaches in the US and the EU, Article II.1 of the Guidelines states that the MRFTA and the system of IP rights ultimately pursue a common objective, because a distorted market structure may inhibit the development of innovative technology. Article II.2 further clarifies that an exercise of IP rights under Article 59 MRFTA (which provides exemptions for lawful exercises) is compatible with competition law, as long as it stays within the scope of the

[46] See also Choi 2011, p. 133.
[47] Arts. 6 and 7 TTBER.
[48] Armillotta 2010, p. 103.
[49] Amended on 17 December 2014, KFTC, established rule no. 205, available in English at http://eng.ftc.go.kr/bbs.do?command=getList&type_cd=62&pageId=0401. Accessed 12 March 2015. For further detail, see also Choi 2011, pp. 124-127.
[50] Law no. 13071, amended on 20 January 2015.
[51] For general information, see also Cheng 2012, p. 504 et seq; Choi 2011, p. 125.

IPR and does not go against the original purpose of the right in question. At the same time, the Guidelines provide certain criteria for the scrutiny of whether an exercise of IP rights runs afoul of the prohibition of the abuse of market dominance and of restrictive agreements. Therefore, the Guidelines cover both unilateral and coordinated practices which are somewhat different from those of other competition regimes.

In particular, the Korean IP Guidelines provide the criteria for the relevant market definition by stating that other KFTC guidelines on the abuse of market dominance and merger control can also be applicable *mutatis mutandis*. In addition, similar to those of other regimes, they state that technology markets and innovation markets have to be distinguished. The Guidelines also prescribe specific criteria for the scrutiny of a number of practices, including the acquisition of patent rights, grantbacks, the exercise of patent rights by filing suits, grant of licence, refusal to license, patent pools, technology standards, the exercise of patent rights by non-practicing entities, and so on.[52]

The whole format of the Korean IP Guidelines appears similar to those of the US and the EU or a mixture of them. The Korean Guidelines proscribe certain business practices regarding the exercise of IP rights. The Guidelines are not legally binding and simply offer informal guidance to undertakings by providing examples and criteria,[53] which are different from the Nine No-No's in the US and the pre-1996 regulations in the EU. Despite the lack of binding effect, the Guidelines are important as screening devices for allocating the enforcement agency's resources and for informing a category of acts that possibly violate the law.[54] In addition to the Guidelines, the Korean competition regime provides a 'comfort letter' type authorisation method for agreements, which can reduce possible over-enforcement.

Unlike the safe harbour provisions in the guidelines of the US and the EU, the Korean IP Guidelines do not provide market share thresholds. One of the main reasons is that the MRFTA already provides a market dominance presumption standard which is based on market shares.[55] In addition, the KFTC's other guidelines, including those on unfair business practices and agreements, contain the safety zone criteria of market share thresholds, which are 10 and 20

[52] See also Choi 2011, p. 126.
[53] The Supreme Court of Korea held that the market share threshold in the Guidelines is not legally binding, and the Commission can withdraw the relevant provision in individual cases, e.g., Supreme Court of Korea, Judgment 2009Du9543, 25 November 2010.
[54] See e.g., Ginsburg and Fraser 2011, p. 49.
[55] Art. 4 MRFTA: Market share of a single undertaking is 50% or more; alternatively, the combined market share of three or fewer undertakings is 75% or more (with an exception for firms with a market share below 10%).

per cent respectively.[56] Therefore, it is possible that undertakings may rely on the criteria of market-share-based standards, although the Korean IP Guidelines do not include a market-share-threshold exemption.

3. The Standard of Designing Guidelines: Transplantation of Legal Techniques

3.1 The Necessity of Rules for the Grey Area

Competition law and IP law face certain conflicts in implementation and often work as a spear and a shield in courtrooms because of the intrinsic tensions between them, at least in the short run.[57] Therefore, as discussed above, the issue of the intersection between competition law and IP is one of the most difficult and heavily debated areas of the law.[58] In particular, the debate about the *ex ante* and *ex post* approaches is at the heart of competition policy in the field of IP. In theory, holding a monopoly position, possibly for a short term, can provide investment incentives for inventions, thereby generating worthier long-run social gains.[59] Therefore, the *ex ante* approach, which is based on incentives, contrasts with the *ex post* approach by placing less emphasis on market power and is crucial for the competition law scrutiny of IP cases.[60]

Considering both the *ex ante* and *ex post* approaches, it is important for policymakers to decide whether IP and competition law intrinsically conflict with each other or simply have different methods to achieve the same objective.[61] But also, if the latter view is taken (which we here advise), it is important to provide clearer guidance for the exercise of IP rights, especially through the adoption of IP guidelines as shown previously.[62]

In this context, the concept of market power seems particularly important. The issue of market-share based guidance involving IPRs had been discussed by quite a number of

[56] Art. V.1.Ga.(4) of the Guidelines for the Review of Unfair Trade Practices, amended on 12 August 2012, established rule no. 72 of the KFTC; Art. V.2.Ga.(2) of the Guidelines for the Concerted Practice Review, amended 20 August 2012, established rule no. 165 of the KFTC, English version is available at http://eng.ftc.go.kr/bbs.do?command=getList&type_cd=62&pageId=0401. Accessed 16 March 2015.
[57] In particular, IP law ensures higher prices for recoupment by avoiding competition by imitation; on the contrary, competition law aims to promote lower prices by preventing anti-competitive business practices. See Gilbert and Weinschel 2008, p. 2009.
[58] Myers 2007, p. 3.
[59] Cotter 2015, p. 132.
[60] See e.g., Sullivan and Grimes 2006, p. 843.
[61] Jones and Sufrin 2014, p. 851. Some argue that the conflict between the two laws is exaggerated because of the problem of uncertainty involving the optimal amount and scope of IP protection. Hovenkamp 2005, p. 225.
[62] In particular, the development of the EU's block exemption regulations is one of the important features of the modernisation of competition rules, which is based on the more economic approach. See e.g., Mendelsohn and Rose 2002, pp. 39-41.

commentators even before the emergence of IP guidelines. For example, Jorde and Teece suggested early that competition law needs to recognise a safe harbour which is based on market power assessments, especially for horizontal agreements among undertakings with less than 20 per cent market share. They further argued that a market power threshold indicates the legal treatment of certain agreements by ensuring an objective test, providing a self-assessment of the legality of undertakings' plans.[63]

In fact, the market share thresholds which numerous competition regimes have adopted also appear appropriate in the IP context, although there are some ongoing debates about which type of market structure is the most conducive to innovation.[64] The number of cases involving the interface of IP and competition law is increasing worldwide, including in the developing world.[65] A convergence in the regulatory frameworks of IP guidelines will help multinational enterprises to avoid possible violations of competition law in other jurisdictions. Nevertheless, the concept of market power itself is often regarded as a difficult one, and a conventional price test for assessing market power often fails, especially in the IP world.[66] Therefore, it is crucial to give direction for the definition of markets and the assessment of market power in IP-related contexts.

3.2 Market Definition and Market Power in the New Economy

Because most competition regimes rely on market share thresholds to assess potential anti-competitive harm, market definition is essential.[67] However, as Kaplow asserts, it is often difficult to rationalise market definition in a coherent and useful way.[68] Indeed, a substitution analysis for the purpose of market definition is becoming more difficult in the ICT sector because empirical data for cross-elasticity is unreliable or even unavailable, thus making it difficult to apply the SSNIP test (small but significant and non-transitory increase in price). Moreover, this test is rather useful for a static market analysis, focusing on short-term price

[63] Jorde and Teece 1992, p. 56. However, Sidak and Teece argue that the market share criterion itself is not a clear proxy for an overall appraisal. See also Sidak and Teece 2011, pp. 61-64.
[64] Niels et al. 2011, p. 172.
[65] Most cases concern the abuse of market dominance, such as *Microsoft*, *Intel*, and *Qualcomm*, but cases on restrictive agreements, such as, e.g., reverse payments, also appear in numerous jurisdictions, e.g., Supreme Court of Korea, Judgment 2012Du24498, 27 February 2014.
[66] See e.g., Cass and Hylton 2013, p. 187.
[67] Nevo 2015, p. 10.
[68] Kaplow 2015, p. 345. Multi-sided platforms are one of the best examples of this problem, because it is often difficult to measure substitutability with respect to the different market sides. See e.g., Evans and Schmalensee 2015, p. 422.

competition, rather than in a dynamic context.[69] In addition, unlike other types of product markets, it is often difficult for lawyers and economists to decide whether and to what extent substitution between products made by different technologies is plausible.[70] There are some explanations for this difficulty. Unlike mature industries focusing on prices, the aspect of innovation is decisive for the high-technology sector. Accordingly, the concept of SSNIP is of limited relevance in dynamic industries.[71]

Therefore, in sectors characterised by rapid technological changes, more general reflections have to be made, taking into account improvements in quality and advantages in cost saving.[72] One of the important features in high-technology or new economy[73] industries is that the borderline between products and services is often unclear.[74] Nevertheless, measuring market power on the basis of market definition is still the most effective technical framework, as it establishes the economic context, gives an idea of market structure and performance, and provides a first impression of market dynamics.[75] Problems of market definition encountered in IP industries may be alleviated by IP guidelines which, at the same time, may consider other aspects like R&D, the level of complexity, customers' bargaining power, and market entry.[76] In this sense, competition regimes around the world have tried to establish guidance for undertakings and lawyers, and we can observe a significant level of convergence regarding this issue.

This is especially true for the situation in the EU and the US, as both jurisdictions have moved to an economic approach to scrutinise IP arrangements.[77] For example, similar to the US Guidelines, the EU's TT-Guidelines articulate the methodology for market definition. Paragraph 21 of the TT-Guidelines states that the relevant product market consists of the contract products and those which are interchangeable or substitutable for the products, considering their characteristics, prices, and intended use. Paragraph 22 of the Guidelines, then,

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[69] Nevo 2015, p. 87.
[70] Pleatsikas and Teece 2001, p. 108.
[71] Pleatsikas and Teece 2001, p. 111. However, it may be useful to transform the SSNIP into a SSNDQ (small but significant non-transitory decrease in quality) test for the purpose of the "free" Internet markets: This new test allows a determination of substitutability when prices are not available or non-existent, but variations in quality will be important for demand, see Gebicka and Heinemann 2014, p. 156 et seq.
[72] Gavil et al. 2008, p. 1173.
[73] The new economy refers to the newly developed industries, including computer software, Internet-based business, and communication services. The new-economy industries can be characterised by falling average costs over outputs, high rates of innovation, easy entry and exit, and considerable economies of scale and scope. See Posner 2001, p. 925; Landes and Posner 2003, p. 390.
[74] Gavil et al. 2008, pp. 1155-1156.
[75] See e.g., Gotts 2013, p. 162.
[76] Gotts 2013, p. 180.
[77] Anderman 2012, p. 466; Lowe and Peeperkorn 2005, p. 281.

clarifies the relevant technology markets as follows. The technology markets comprise the licensed technology rights and other technologies which are considered by the licensees as interchangeable or substitutable, again based on their characteristics, royalties, and intended use. The SSNIP test may be useful in this context, i.e. the response of licensees to a small but permanent increase in relative prices, i.e. the royalties.[78] As stated above, this set of provisions can also be found in Korea, which indicates a large degree of convergence.

There is no doubt that the US Guidelines have influenced IP guidance in other competition regimes, especially regarding the complexity of market definition and the distinction between technology and innovation markets.[79] This standard of analysis, despite the existing problem of vague criteria in technology markets, has spread out around the world and has influenced the design of IP guidelines universally. The methodology of market definition and market share thresholds, with exceptions for hard-core restrictions, demonstrates an important convergence in competition law techniques.

Moreover, it is not an easy task to determine the market share of the parties to an IP licensing arrangement, because it is difficult to define the relevant market in the new economy.[80] In particular, innovative goods can leap forward and change to another market easily, thereby replacing old ones. Therefore, we can often observe sudden and unpredictable high market shares in technology and innovation markets. Some argue that a quick look assessment based on market share falls short, because IP-related markets have a dynamic nature. Therefore, a high market share may be a poor indicator in the arena of rapid change and may insufficiently suggest market power in some cases.[81] Over-enforcement may be the consequence: If IP holders cannot satisfy the conditions of the block exemption, they may be hesitant to license out their technology. A disincentive to license would be the consequence.[82]

3.3 Flexibilities and Solutions

These concerns deserve further analysis. Before looking deeper into the problem of market definition and the weight of market shares in the IP context, a more general discussion seems necessary. As already mentioned, the old world of the Nine No-No's in the US and the white

[78] See also Jones and Sufrin 2014, p. 881.
[79] See e.g., Heinemann 2012, p. 57.
[80] Jones and Sufrin 2014, p. 867.
[81] Teece 2011, p. 222.
[82] Anderman 2008, pp. 117-118.

lists in the early block exemption regulations in the EU was criticised because of the lack of economic underpinning and the straight-jacket effect. A more positive appreciation of restrictive clauses in licensing agreements was called for. At the same time, market share thresholds were rejected, because – in the view of the critics – it is difficult for firms to determine their market share. However, this position does not seem consistent. If a more economic perspective is taken, going beyond the type of the licensing clause and taking into account the whole economic context, the position of firms in the market is a decisive factor. For example, in the assessment of an exclusive licence, it is important to know if the parties are competitors or if they stand in a vertical relationship to each other. In both cases, the strength of the parties in the affected markets is likewise important.

As market shares are the most helpful proxy in gaining a first impression of market power, it seems indispensable to accompany the more lenient treatment of restrictive licensing clauses with the caveat of market share thresholds. To be clear in this regard: Market share thresholds should not determine the outcome of the analysis. They should rather work as a safe harbour: Below the threshold, firms can be sure that their licensing agreement is compatible with competition law (as long as hardcore restrictions are avoided). Above the threshold, a more careful analysis is necessary. The result of the deeper evaluation may still be in favour of the agreement as it stands. However, a closer look is required to get to this result. To summarise, it is not possible to call for a more economic view, and at the same time, to reject instruments of analysis whose aim is precisely to draw closer to the economic reality of markets.

This leads to the difficulties inherent in market share criteria. It is certainly one of the most demanding exercises of competition law to define relevant markets. However, on the one hand, market definition does not start from scratch. As it is at the heart of competition law, a plethora of case law, nationally and internationally, is available in order to help with this task. As has been pointed out, guidelines apply the framework to IP-related contexts. On the other hand, additional instruments have been introduced which short-circuit the need for market definition. The 4-plus-test (recognised by the US and the EU Licensing Guidelines[83]) takes a view that is more technological than economic: If there are at least four substitutable technologies in the hands of other companies, a competition law violation is unlikely to occur (outside of the world of hardcore restrictions). As a result, market definition is not necessary in practice if the existence of at least four technological substitutes can be shown.

[83] See *supra* at note 33.

But even if a closer assessment of markets is necessary, legal rules and guidance should help as much as possible. The European TTBER, for example, contains special rules for the calculation of market shares. According to Art. 8 lit. a TTBER, the market share shall be calculated on the basis of market sales value data. If this is not available, estimates are allowed, for example, on the basis of sales volumes. As regards technology markets, Art. 8 lit. d TTBER makes clear that market shares in technology markets shall be calculated on the basis of the presence of the licensed technology in product markets. As it is difficult to determine the market shares for the current period, Art. 8 lit. b TTBER declares the preceding calendar year to be relevant. The European block exemption regulation also gives an answer to the phenomenon of volatile market shares in dynamic markets: Pursuant to Art. 8 lit. e TTBER, the exemption applies for two additional years after the market share thresholds have been exceeded.[84]

These flexibilities remove uncertainties to a great extent. But even if the safe harbour does not apply, market shares, as such, do not render restrictive clauses illegal. In each case, an individual assessment has to be made. The central insight in this context is: Competition law does not content itself with a static analysis, but takes into account the dynamics of markets. There is space for the justification of restrictive agreements as long as the necessity of the restriction for the process of innovation is shown. However, the innovation argument must not serve as a mere pretext hiding the anticompetitive goal of certain restrictions.

4. Conclusions

In the globalised world, competitiveness and innovation play a crucial role in economic growth.[85] The emergence and development of the new economy is driven by innovation, and innovation often takes the form of IP.[86] Therefore, cases involving the interface of IP and competition law are arising more and more frequently. At the same time, technological complexity has increased the need for interaction among competitors, which raises competition law issues.[87] The importance of dynamic competition, rather than static competition, has to be emphasised, and this on a global basis.[88] Against this backdrop, a number of competition law regimes have provided guidance through the issuance of IP guidelines. Indeed, proper guidance

[84] All this is explained in more depth in the European TT-Guidelines, N. 79 et seq.
[85] Bohannan and Hovenkamp 2012, p. 1; Carrier 2009, p. 1.
[86] Gavil et al. 2008, p. 1153.
[87] See e.g., Sullivan and Grimes 2006, p. 841.
[88] Teece 2011, p. 208.

is essential, especially when competition law evolves through statutory provisions rather than case law.

While there is some divergence in monopoly cases among competition regimes,[89] we can observe a considerable convergence in the IP licensing framework. Some general principles seem to be widely accepted today, including the following: (i) for the purpose of competition law, IP is comparable to other forms of property; (ii) IPRs in themselves do not automatically create market power; and (iii) IP licensing is generally favourable to competition.[90] In addition, this general framework is implemented by specific rules based on the distinction of product, technology, and innovation markets, the difference between horizontal and vertical agreements, market share thresholds, exceptions for hardcore restrictions, as well as other safe harbours and presumptions (e.g., the 4-plus-test).

There are inevitable trade-offs between IP and competition law,[91] but there is no genuine contradiction between these two fields of law. It may be true that 'perfect competition is incompatible with IP',[92] but this adage is restricted to the world of static equilibrium theory. In the "real world", the positive and negative aspects of exclusivity have to be explored with the aim of providing the optimal incentives to innovate.[93] IP guidelines have to strike the balance between the under-enforcement and over-enforcement of competition law. On the one hand, IP guidelines provide a green light to agreements which are favourable for competition and innovation; on the other hand, they provide yellow and red lights to undertakings that are reaching the level of anti-competitive concern.

Today, competition regimes around the world admit the benefits of various types of efficiency-enhancing co-operation between undertakings and specify such business practices in their guidelines.[94] Regularly, undertakings are under a duty of self-assessment. In particular, multinational enterprises have improved their efforts to comply with competition laws in the major competition jurisdictions.[95] The adoption of guidelines has facilitated this endeavour.[96]

[89] See e.g., Czapracka 2009, p. 1 et seq.
[90] Sec. 2.0 of the US Guidelines; Carrier 2009, p. 81.
[91] Carrier 2009, p. 3.
[92] See e.g., Sidak and Teece 2011, p. 57.
[93] See e.g., Bohannan and Hovenkamp 2012, p. 9. The choice and balance of monopoly and competition is crucial for competition policymakers; IP guidelines determine the level of market power, and respectively, exclusivity, which maximises the incentives to innovate.
[94] See e.g., Kuik 2007, p. 143.
[95] See e.g., Jerez 2015, p. 352 et seq.
[96] See e.g., Ginsburg and Fraser 2011, p. 42.

Recent developments at the intersection of competition law and IP have accelerated the convergence between competition law systems, not only between jurisdictions with a long competition law tradition, but also with respect to developing competition regimes, such as that in Korea. Although differences remain, the process of convergence will continue. This not only affects substantive rules, but also legal techniques, such as, for example, the establishment of safe harbours. The efforts to adopt guidelines around the world are improving the coherence of competition policy on the global level and facilitating an understanding of the complementary character of competition law and IP protection. The pace of innovation and the worldwide transfer of technology will benefit considerably from this development.

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