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〈특집: Current Developments in International Economic Law〉

Patents on Standards*
- Highwaymen in Ambush or Driving Force for Innovation and Competition?-

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Abstract

The article first analyses the interplay between standard-setting and patents. Especially *de iure* product-standards have a major impact on the global economy and they can generate a number of very positive effects. On the other hand, the vulnerability of markets that depend on a standard can impose a great danger. Due to the network effect and other factors, the disadvantages of switching away from a standard to another can be so high that markets and market players adhere to a standard even if this entails severe disadvantages. This effect can give much power to a market player controlling the standard, for example by holding a patent that covers a technology which forms a part of the standard. All safety measures against abusive behavior of such patent holders require that the patent and its relevance to the standard are known in advance. A patent holder may, however, conceal a standard-relevant patent, wait until the standard is implemented, and then demand high royalties to the standard users. This scenario can be called a "patent ambush".

The article then analyzes one of the most famous patent ambush-cases, the "Rambus" case, and shows how differently this case has been handled in the US and Europe respectively. Core problems in the handling of patent ambushes become evident in the Rambus case: relevant patents and their holders are not necessarily identifiable. The right to proscribe the use of a patented technology

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and the right to grant a license only in return of a royalty payment are core elements of the protection a patent confers. To restrain those powers in patent ambush cases means interfering heavily with the patent law system and its coherence. The protection and the rewards an intellectual property confers are very important incentives that help to foster a dynamic and innovative economy capable of generating public welfare. Therefore, interfering with rights conferred by standard-relevant patents is potentially very dangerous.

Against this background the article discusses several possible solutions to the patent ambush-problem, i.e. contract law, patent law, and competition law. As this exercise shows, patent law may be the most appropriate area of law to deal with patent ambushes but it has not yet been developed an effective and widely accepted instrument. As a result, the application of competition law is, for the time being, still necessary to assure the prevention of harmful patent ambush practices.

Keywords: antitrust law, Art. 102 of the Treaty on the Functioning of the European Union (TFEU), *de facto*-standard, *de iure*-standards, dominance, exclusionary conduct, FRAND (Fair Reasonable and Non-discriminatory), JEDEC (Joint Electronic Device Engineering Council), lock-in, network effect, patent ambushes, patent law, patent thickits, patent trolls, patents, Rambus. royalty stacking, Sec. 2 Sherman Act, Sec. 5 FTC Act, standard, standard setting organization (SSO), standard-relevant patent, standards estoppel, standard-setting, third party intended beneficiaries

I. Introduction－Standard－Setting

The issue I want to talk about today relates to the **interplay of standard-setting and patents**. I assume we all have an idea of what "patents" are and how they are protected by patent laws. But let me say some introducing words about the standard-setting process.

A standard can be－for today's purpose－be **defined** as an explicit set of requirements for an item, material, component, system or service.[1] Although there are various **types of standards**,[2] such as product standards, business method-standards

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[1] Cf. DIN EN 45020:2006－Normung und damit zusammenhängende Tätigkeiten－Allgemeine Begriffe (ISO/IEC Guide 2:2004).

or safety standards, we understand our issue best by focussing on standards defining technologies that are used within a certain type of products.

Standards can be further **differentiated** by looking at the **entity that sets the standard**. If standards are adopted by a private standard setting organization (SSO) or by a governmental body, we call them *de iure*-standards.[3] Within private standard setting organizations, standards are usually set by specialized working groups that are comprised of representatives of important market players as well as independent experts. Standards may, however, also derive from a design that is implemented by a single undertaking or a group of undertakings; if this attempt is successful and gets the market to adopt the design, a "*de facto*" -standard has been put in place.[4]

Especially, *de iure* product-standards have a **major impact on the global economy**. Some figures shall evidence this: 84% of the products that are exported by German undertakings are based on standards; 1.5 billion USD per year are spent on standard setting activities; there exist some 500.000 *de iure*-standards worldwide; and, to give a last example, standard setting is said to contribute 1% to the gross national product of Germany.[5]

Although standard setting is, as seen, of high practical relevance, it is – in a certain way – a paradoxical phenomenon: Competitors, usually trying to outpace one another by differentiating their products and trying to keep secret their respective technical solutions, come together to define a common frame that makes their products uniform to a certain extent, thereby sharing important

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2) *American Bar Association, Section of Antitrust Law*, Handbook on the Antitrust Aspects of Standards Setting, Chicago 2004, p.6 et seqq.; Ashton, Peter, Some Economic Effects of Standards – Comment, 19 Applied Economics 1515-1519 (1987), 1515 et seqq.

3) Walther, Michael/Baumgartner, Ulrich, Standardisierungs–Kooperationen und Kartellrecht, Wirtschaft und Wettbewerb 2008, 158-167, 158 et seqq.

4) Spark, Kevi, Format War, Antitrust Casualties: The Sherman Act and the Blu-Ray – HD DVD Format War, *83 Southern California Law Review* 173-228 (2009).

5) Cf. DIN, Deutsches Institut für Normun (Hrsg.), Gesamtwirtschaftlicher Nutzen der Normung: Wissenschaftlicher Endbericht–Zusammenfassung der Ergebnisse, Berlin, Wien, Zürich 2000, p.5.

business data. Moreover, legislation and antitrust agencies are willing to accept, in principle, the direct collaboration of competitors as long as they join forces to set up a standard – although this collaboration could easily be interpreted as an anticompetitive cartel. The reason why **competitors and antitrust agencies accept and even foster standard setting** is because standard setting **generates a number of positive economic effects**.[6] **For producers**, standards reduce transaction and production costs and they facilitate the development of auxiliary equipment and other complementary products; standards also facilitate the entry of new players in the market because they make sure that their products, as long as they comply with the standard, meet basic product requirements in that market. **As for consumers**, standards can help them to compare different products based upon the same standard; and standards guarantee that complying products are safe and convenient. **As for national economies**, the standard setting process helps to identify superior solutions and to establish them within the market. In particular, *de iure*-standards avoid economically inefficient "standards wars"[7] between market players and their respective solutions (we have recently experienced such a standards war in the DVD-sector between the Blue Ray and the HD-DVD technology)[8].

These **advantages** of standard setting do, however, **have their downsides**: One grave danger – and the one this paper is mainly dealing with – is the **vulnerability of markets that depend on a standard**. Once the standard is implemented and the market has tipped towards it, the market and its players might not easily give up the standard or switch to a different standard. This can especially be due to the so called network effect:[9] The more producers and consumers use the standard, the more value generated by the standard to each respective user – this is because the common technological basis facilitates the interaction (in the broadest sense)

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6) For an overview, see Blind, Knut, The Economics of Standards, *Cheltenham 2004*, p.14 f.

7) Grindley, Peter, Standards, *Strategy and Policy: Cases and Stories*, 3. Aufl., Oxford 1995, p.74 et seqq.

8) Hill, Charles/Jones, Gareth, Strategic Management Theory: An Integrated Approach, *Cincinnati 2009*, p.240 et seqq.

9) For more details on network effects, see Evans, David/Schmalensee, Richard, A Guide to the Antitrust Economics of Networks, *10 Antitrust* 36-40 (1996), 36 et seq.

between the users. Due to the network effect and other factors, the disadvantages of switching away from a standard can be so high that markets and market players adhere to a standard even if this entails severe disadvantages. This effect can give much power to a market player controlling the standard. Such control can, as we will see now, be conferred for example by a patent that covers a technology that forms a part of the standard.

II. Patent Ambushes and Their Difficult Legal Handling

1. The Patent Ambush-phenomenon

A **patent on a standard** or a part of the standard can **confer on the patent holder a dangerous power**. As the patent gives him the right to prevent others from using his patented technology[10] and, in consequence, to use the standard, the patent holder can either **block the standard** altogether or **extort high license fees** from standard users. Standard setting organizations and their members may be able to prevent this outcome by simply not integrating the protected technology into the standard. They may also at least minimize the negative consequences by obliging the patent holder to grant licenses on conditions specified before the standard is set. All these **safety measures require**, however, that the **patent and its relevance to the standard are known in advance**. A patent holder who wants to exploit a controlling position over a standard therefore has an interest to keep the patent secret until the standard is implemented. Wrapping up these considerations, we can identify a paradigmatic scenario: A patent holder **conceals a standard-relevant patent**, waits until the standard is implemented, and then **demands high royalties** to the standard users. For the rest of this presentation, we want to focus on this scenario and call it a "**patent ambush**".[11]

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10) Benkard/Scharen, Patentgesetz/Gebrauchsmustergesetz, 10. Aufl., München 2006, § 9 PatG n. 4 w.f.r.

11) Cf. For this terminology e.g. Hillel, Jonathan, Standards x Patents / Antitrust = : The Inadequacy of Antitrust to Address Patent Ambush, *17 Duke Law & Technology*

2. The Rambus Case and its Outcome

The patent ambush is far from being only an academic problem. In one of the most famous patent ambush-cases, **Rambus Inc.**, a developer and licensor of computer memory technologies,[12] took part in the setting of a standard for computer memory technology (DRAM). This standard setting was run by the business-wide standard-setting organization JEDEC (Joint Electronic Device Engineering Council).[13] As Rambus realised that it held patents on some technologies that were to become part of the standard it concealed those patents and even filed new patents that covered other parts of the standard. After the standard had been set and implemented, Rambus demanded royalty rates from the standard users that were roughly thrice as high as the royalty rates negotiated before the standard had been set.[14]

Looking at the patent ambush-situation and the Rambus-case, one may at first sight think: Where is the problem? If a patent holder's conduct is abusive, just bar it from imposing its patents and everything will be solved. Things are, however, not that easy. This can already be seen from the **outcome of the Rambus-case** both in Europe and the US: **In the US**, the FTC opened proceedings against Rambus and ordered the undertaking to grant any interested party a worldwide, nonexclusive license for its patents on a royalty basis that lay significantly below the royalty level demanded by Rambus.[15] The FTC did however not declare the patents unenforceable or order a royalty-free license. Yet, the **US Court of Appeals** was not even convinced by this limited intervention and **set aside the FTC's orders** (we will examine the reasons afterwards).[16] The Supreme Court of the US did not take the appeal against this decision[17] and the

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Review 1-56 (2010).

12) For further information on this company, see http://www.Rambus.com.

13) JEDEC has now changed its full name into "Solid State Technology Association", cf. http://www.jedec.org/about-jedec/jedec-history.

14) FTC, Rambus 2006, 37 et seqq.

15) FTC, Rambus 2006; Final Order of the Federal Trade Commission of 02/02/2007, In the Matter of Rambus Inc., Docket No. 9302.

16) Rambus Inc. v. FTC, 522 f. 3d 456 (D.C. Cir. 2008).

17) FTC v. Rambus Inc, 129 U.S. 1318 (2009).

agency then **closed the case**. **In Europe**, things turned out less favourably for Rambus. After the EU Commission had opened up proceedings against the company, Rambus acceded to a so called **consent order** which obliged the undertaking to **grant a license for its patents that is in part royalty-free**.

3. Core Problems in the Handling of Patent Ambushes

One may discern **three core reasons** why the **legal handling** of patent ambush-cases appears to be so **problematic**. **First,** it is difficult to prevent patent ambushes or to block them at an early stage – **relevant patents** and their holders are **not necessarily identifiable** when the standard is set; the holder of a relevant patent may not even take part in the standard setting process.

Second, the patents used for ambushes usually are obtained in a flawless manner and are not subject to any legal misgivings. Furthermore, the **right to proscribe the use** of a patented technology and the right to grant a **license only in return of a royalty payment** are **core elements of the protection** a patent confers. To restrain those powers in patent ambush cases means interfering heavily with the patent law system and its coherence.

And **third**, the question of where to draw the limits between patent rights and patent protection has never been a purely legal one but also an economic and social one. **The protection and the rewards an intellectual property confers are very important incentives that help to foster a dynamic and innovative economy** capable of generating public welfare.[18] Market players are ready to invest in research and development and to share – *via* the publication of patents – their inventions with others because they know that these inventions are – for a certain period of time – protected against free copying and because they can expect to draw profits from the licensing or from the exclusive usage of their inventions. This "incentive-mechanism" is the very bedrock of any patent law system.[19] Interfering with rights conferred by standard-relevant patents is revealed to be

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18) Kraβer, Rudolf, Patentrecht, 6. Aufl., München 200, § 3 IV w.f.r.

19) See for this, with a particular focus on the TRIPS-agreement, Dreier, Thomas TRIPS und die Durchsetzung von Rechten des geistigen Eigentums, GRUR Int. 1996, 205-218.

potentially very dangerous – technologies that are to be standardized tend to be advantageous and valuable technologies. If a market player invented such a technology and did not from the first block its integration into the standard, should we punish him by limiting his patent rights? Aren't we, by doing so, calling patent law's incentive system into question?

III. Possible Solutions

This having been said, we might understand why the patent ambush-problem is currently intensely discussed on both sides of the Atlantic – and I am eager to learn about the Korean state of discussion. Things are very much in flux and no legal handling can be said to have been definitively established. But I would still like to give you an overview of a few main approaches which have crystallized so far.

1. US

a) Intervention Critics

In the US, as already mentioned, **mainly the courts**, flanked by some scholars,[20] are rather **reluctant to intervene** in patent ambush cases. They mainly state that it is for the SSOs to define, whether and under which conditions standard-relevant patents should be disclosed. This is because only SSOs know how much disclosure is necessary to protect standard users and consumers and how little disclosure is recommendable to keep the participation in standard setting attractive to patent holders. Consequently, if SSOs do not have a patent disclosure policy or if this policy does not provide for clear disclosure obligations, no disclosure of relevant patents should be held to be mandatory.[21]

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20) Stadheim, Theresa, Rambus, N-Data, and the FTC: Creating Efficient Incentives in Patent Holders and Optimizing Consumer Welfare in Standards-Setting Organizations, *19 Albany Law Journal of Science and Technology* 483-517 (2009) 493 et seqq. (2009).

21) Rambus Inc. v. FTC, 522 f. 3d 456 (D.C. Cir. 2008), 18; Mintzer, Erica/Breed,

Furthermore, successful patent ambushes and the power of patent holders resulting from them are – from this point of view – not really something to be concerned about. As the resulting market position of the patent holder is very attractive, it will spur competitors to come up with alternative technologies and standards.[22] Sooner or later, competitors will successfully challenge the hitherto dominating patent holder and destroy its position of power. The patent ambush will have led to more intense competition and the market power it conferred will have destroyed itself.[23]

b) Intervention Proponents

The **majority of US scholars** do, on the contrary, **advocate a legal intervention** in patent ambush cases.[24] The legal instruments which are proposed for such an intervention are, however, numerous.

Some authors rely heavily on **contract law**.[25] They regard the written policies of standard setting organizations, which contain – amongst other issues – rules of conduct for the participants of standard setting procedures, similar to contracts between the SSO and the standard setting-participants.[26] Therefore, if the SSO policy constitutes an obligation to disclose relevant patents and/or to grant licenses on a royalty free- or FRAND (Fair Reasonable and Non-discriminatory) basis, the

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Logan, How to Keep the Fox Out of the Henhouse: Monopolization in the Context of Standard-Setting Organizations, *19 Intellectual Property and Technology Law Journal* 5-11 (2007), 11.

22) J. Hillel, 17 Duke L. & Tech. Rev. 1 (2010).

23) Obviously this reasoning is deeply influenced by the Chicago School-paradigma of self-destroying monopolies; see Hovenkamp, Herbert, Antitrust Policy after Chicago, *84 Michigan Law Review* 213-284 (1985), 226 et seqq. (1985).

24) Hovenkamp, Herbert, Innovation and the Domain of Competition Policy, *60 Alabama Law Review* 103-131 (2008), 10; Tsilas, Nicos, Toward Greater Clarity and Consistency in Patent Disclosure Policies in a Post-Rambus World, *17 Harvard Journal of Law and Technology* 475-531 (2004), 494 et seqq. (2004); Cotterr, Thomas, Patent Holdup, Patent Remedies, and Antitrust Responses, *34 Journal of Corporation Law* 1151-1207 (2009), 1188 et seqq. (2009), all w.f.r.

25) M. Lemley, 90 Cal. L. Rev. 1889, 1909 et seq. (2002); Th. Cotterr, 34 J. Corp. L. 1151, 1198 et seq. (2009).

26) M. Lemley, 90 Cal. L. Rev. 1889, 1910, 1914 (2002).

SSO would – as a contracting party – be in the position to claim and impose this conduct vis-à-vis a patent holding participant. Other participants of the standard setting-process are, according to this theory, not themselves parties of the contract. Yet, they are the so-called "third party intended beneficiaries" who are also entitled to invoke the contractual obligations.[27)]

Proposals that want to make **patent law** itself effective against patent ambushes mainly rely on the "Estoppel"-instrument.[28)] In its traditional form, an estoppel, the so-called equitable estoppel, bars the holder of a right from exerting that right if (1) the rightholder made a misleading representation concerning that right vis-à-vis a party that is in direct contact with the rightholder; if (2) the other party relied on that misrepresentation; and if (3) the other party would be materially harmed by the exertion of the right in question.[29)]

To make the Estoppel instrument effective in standard-related patent ambush-cases, the two leading proponents of an Estoppel approach, US-Professors Merges and Kuhn, propose modifying the traditional equitable estoppel into a **standards estoppel**.[30)] They hold this modification to be necessary mainly with regard to two patent ambush aspects that the traditional equitable estoppel can hardly cover: First, the equitable estoppel requires a "misrepresentation" that is an act of communication, albeit by not answering to a relevant question. But in the circumstances where the holder of a relevant patent does not himself take part in the decisive periods of the standard setting process, no such act of communication may occur. And second, the required "direct contact" between the patent holder and the standard will probably not be established when the standard user did not take part in the standard setting process but only used the standard after its adoption by the SSO. Merges' and Kuhn's "standards estoppel" would not require an explicit misrepresentation or a direct contact between a patent holder and a standard user, thereby covering the aforementioned situations.

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27) M. Lemley, 90 Cal. L. Rev. 1889, 1915 (2002).

28) M. Lemley, 90 Cal. L. Rev. 1889, 1918 (2002); Merges, Robert/Kuhn, Jeffrey, An Estoppel Doctrine for Patented Standards, *97 California Law Review* 1-50 (2009), 1.

29) See e.g. Rambus Inc. v. Infineon, 326 f. Supp. 2d 721 (E.D. Va. 2004), 733 w.f.r.

30) See for the following, R. Merges/J. Kuhn, 97 Cal. L. Rev. 1 (2009).

The **antitrust approach**, followed mainly by the FTC and a large part of the doctrine,[31] seems to become the **most important stance** in patent ambush cases. In *Rambus*, the FTC constructed this approach by the combined application of two core prescriptions of US antitrust law – **Sec. 2 of the Sherman Act and Sec. 5 of the FTC Act**.

The **exclusionary conduct**, which is the core requirement to establish a violation of US antitrust law, is seen to be lying in the deceptive concealment of a standard-relevant patent.[32] Concealing the patent is not competition on the merits and is therefore abusive, because it aims to get the patented technology integrated into the standard not because of its technological superiority but because of the erroneous belief that the technology was patent-free.

The **monopoly power** which constitutes the next requirement of Sec. 2 of the Sherman Act/Sec. 5 of the FTC Act is in patent ambush cases conferred by the implementation of the standard.[33] Once the market is locked into the standard due to the market-wide application of the standard, a market player who controls the standard eventually controls the market and can impose supracompetitive prices by exerting its monopoly power.

The necessary **link of causation** between the exclusionary conduct and the monopoly power is established by the influence the deceptive conduct has on the participants of the standard setting procedure:[34] *Because* the patent holder conceals his relevant patent, the technology becomes attractive to the standardization committee because no IP-rights seem to exist on it. And *because* the SSO chooses the technology for the standard, adopts the standard, and thereby makes the market implement the standard, the lock-in occurs which enables the patent holder to wield monopoly power.

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31) Th. Cotter, 34 J. Corp. L. 1151 (2009); Areeda, Phillip/Hovenkamp, Herbert, Antitrust Law, An Analysis of Antitrust Principles and Their Application, 3rd Ed., New York 2008, § 712d, all w.f.r.

32) P. Areeda/H. Hovenkamp, *Antitrust Law*, 2008, § 712d; Lemley, Mark, Intellectual Property Rights and Standard Setting-Organizations, *90 California Law Review* 1889-1973 (2002), 1931.

33) M. Lemley, 90 Cal. L. Rev. 1889, 1930 (2002).

34) Th. Cotter, 34 J. Corp. L. 1151, 1196 et seqq. (2009) w.f.r

2. EU

a) General Overview

We now turn to the EU perspective. To begin with, it can be said that scholarly literature, antitrust agencies, and the courts within the EU look at patent ambushes **more critically than the US-jurisdiction does**. This may be partly due to the fundamental fact that European legislators generally tend to be more sceptical as to whether markets and powerful market players generate benefits to the society if they remain free, to a large extent, from governmental and legal control.

But there are also more specific reasons why intervention against patent ambushes is favoured in Europe. Let's look back at the two main grounds on which US courts deny such intervention: **First**, it is said that SSOs can best and should decide whether and how relevant patents have to be disclosed. But evaluations of existing SSO-policies show that they deal with this task rather poorly – many **SSO-policies do not address IP disclosure** at all, and those who do are often very imprecise on that point.[35] And this situation might not only be due to a lack of awareness of patent ambush-risks but also due to the very nature of standard setting organizations. These organizations are highly dependent on the undertakings that finance the SSOs, man their working groups and implement their standards. But at the same time those powerful market players often own big patent portfolios – would they really accept and support a standard setting organization whose rules oblige them to inform about the content of their portfolios or limit their freedom to set royalty rates at the level they prefer?[36] **Second**, reference is made – in a typical "Chicago School"-reasoning – to the self-destruction of monopolies by the competition they attract. In the very long run this may be true

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35) He, Huaiwen, A self-defeating framework: how far could ITU patent policy go?, *31 European Intellectual Property Review* 343-346 (2009), 344 et seqq., with a considerable amount of empirical data.

36) Drexl, Josef/Früh, Alfred/Mackenrodt, Mark-Oliver/Picht, Peter/Pulyer, Boris/Ullrich, Hanns, Comments of the Max Planck Institute for Intellectual Property, Competition and Tax Law on the Draft Commission Block Exemption Regulation on Research and Development Agreements and the Draft Guidelines on Horizontal Cooperation Agreements, *International Review of Intellectual Property and Competition Law* 2010, 948-965, 960, 963;H. He, 31 E.I.P.R. 343, 344 et seqq.(2009).

even for monopolies that are based on the control over a standard. **Standards-based monopolies** are however **especially hard to challenge** because of the inertia of markets that are locked into standards and depend on the network effects that those standards created. Under these conditions, to make a whole market switch simultaneously towards another technology or standard, can take considerable time and effort that the period, in which the holder of the standard-relevant patent enjoys monopoly power, risks to severely harm market players and the public wealth.

This generally critical perception unfolds mainly two legal approaches, the patent law approach and the competition law approach.

b) Patent Law

Proponents of the patent law approach either want to **limit the scope of patents** where they come into conflict with standards;[37] or they want to impose on the patent holder a **duty to license** on a royalty free- or FRAND-basis.[38]

We don't have the time to analyse these different propositions in detail. Yet, what can and must be said is that at least some of them seem to be **promising** — but **none of them seems operative at the moment** or in the near future. To a large part this is due to the structure of the European patent law landscape — as patent law is not (yet) harmonized within the European Union, every member state grants its own national patents, has its own national patent law, and asserts it through its own national courts. As long as neither the national laws of the member states nor the European law establish specific patent law-rules,[39] it cannot be said that patent law provides effective instruments against patent ambushes.

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37) Ullrich, Hanns, Patente und technische Normen: Konflikt und Komplementarität in patent- und wettbewerbsrechtlicher Sicht, in: Leistner, Matthias (Hrsg.), Europäische Perspektiven des Geistigen Eigentums, *Tübingen 2010*, S. 14-95, 14, 85 et seqq.

38) See in particular, Koelman, Kamiel, An exceptio standardis: do we need an IP exemption for standards?, *International Review of Intellectual Property and Competition Law 2006*, 823-843, 823.

39) But see also C. Osterrieth, Patentrecht, München 2010, n. 83 et seqq. on the project of a "European Patent".

c) Competition Law

In comparison with the practical problems that limit the effectiveness of patent law instruments, the European antitrust law appears to be **more operational**. **Art. 102 of the Treaty on the Functioning of the European Union (TFEU)** in particular prohibits unilateral acts of dominant undertakings that distort competition in the Common market. This provision applies Union-wide and is enforced by central institutions, namely the European Courts and the European Commission. Not least this "operability" places the European Competition Law in the centre of the fight against patent ambushes. This is however, as we will now see, not to mean that Competition Law Rules can be applied to patent ambush cases without any difficulties.

Let us, at first, have a look at the **core requirements of Art. 102** TFEU. To constitute a violation of this provision, it is necessary that (1) the respective undertaking has a dominant position within the internal market or within a substantial part of it, that (2) the dominant undertaking abuses his position, and that (3) this abuse may affect trade between Member States.[40)]

From this analysis ensues the question of whether a market player that engages in a patent ambush fulfils these requirements: A "**dominant position**" has been defined as a position of economic strength enjoyed by an undertaking, which enables it to prevent effective competition being maintained on a relevant market, by affording the undertaking the power to behave to an appreciable extent independently of its competitors, its customers, and ultimately of consumers.[41)] A **company holding a standard-relevant patent can**, as we have heard, **control a market that is locked into the standard**. Consequently, it can price its licenses at a supracompetitive level. At first glance, the requirement of a dominant position is therefore easily fulfilled. Yet, according to the traditional interpretation of Art. 102 TFEU, the **dominant position needs to exist at the moment when the abusive**

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40) For an overview, see Schulze/Zuleeg/Kadelbach, Europarecht, 2. Auflage, Baden-Baden 2010, § 16 w.f.r.

41) EuGH, Rs. 27/76 United Brands/Kommission, Slg. 1978, 207, n. 65; Rs. 85/76 Hoffmann-La Roche/Kommission, Slg. 1979, 461, n. 38.

conduct takes place. In patent ambush cases, however, the deception on the existence of a relevant patent takes place *before* the standard is even adopted. Can we nevertheless say that, in patent ambush cases, the possibly abusive conduct is shown by a dominant market player? Several solutions have been proposed to solve this problem; the most sweeping one would be to skip the Dominance-requirement altogether; this would, however, only be possible on a *de lege ferenda* basis; for now, it seems to be the most practical way to focus on the behaviour of the patent holder *after* the implementation of the standard[42] – demanding supracompetitive royalties *via* making use of the market power he has already achieved. Even though this behaviour may in part be judged as anticompetitive just because of the patent holder's conduct before the adoption of the standard, there is nevertheless an element of the entire behaviour that takes place after the implementation of the standard. This "second element" of behaviour should be enough to satisfy the traditional interpretation of the "dominant position"-requirement.

With regards to the **abuse**-requirement, there are two main aspects that can make a patent ambush abusive in the sense of Art. 102 TFEU. First, it is abusive to foreclose competition in an anticompetitive way which ultimately harms the consumer. A technology that, due to a patent ambush, seems to be IP-free can appear to be superior to a patented technology because using the unpatented technology for the standard will not lead to royalty obligations and will not confer a position of control on a patent holder. The **seemingly IP-free technology may** therefore **be chosen** for the standard and **may foreclose competing technologies** which, after the implementation of the standard, do have little chance to succeed on the market.[43] This outcome is however not due to the merits of the victorious technology; it is due to the deceptive conduct of its owner. As deceptive conduct is not competition on the merits, it constitutes – together with the following imposition of supra-competitive royalties – an abuse in the sense of Art. 102 TFEU.

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42) Cf. H. Ullrich, in: M. Leistner (Hrsg.), Europäische Perspektiven des Geistigen Eigentums, 2010, S. 14, 48 et seqq. w.f.r.

43) With this tendency Ullrich, Hanns, Patente, Wettbewerb und technische Normen: Rechts- und ordnungspolitische Fragestellungen, *Gewerblicher Rechtsschutz und Urheberrecht 2007*, 817-830, 827.

Furthermore, it is abusive to **demand excessive prices** that could not have been demanded under effective competition. This form of abuse may at least be present if the royalty rates demanded by the patent holder are very high.[44)]

An **affection of the trade between Member States**, that is an influence on the Common, not only on a national market,[45)] will usually be realised by the capture of a standard by a patent ambusher. As standards typically aim at the harmonization of a whole national, European or even worldwide market, they influence – if they are successful – the way business is run in the affected markets. And so do the conditions – e.g. royalty payments to a patent holder – on which the standards can be used.

As for the **sanctions**-side, it is highly controversial whether the patent holder should be obliged to grant a royalty-free license or a license that includes royalty-payments on a FRAND basis.[46)] As the sanctioning of one patent ambush-abuse should also aim at preventing further patent ambushes, it may be **best not to grant FRAND-royalties for the patent holder**. This is because otherwise patent holders could engage in patent ambushing without running high risks – even if they had to face an intervention of competition agencies or courts, they could nevertheless hope to reap considerable profits from the FRAND-licenses.

IV. Summary and Perspective

Although patent ambushes are, for sure, an important problem and although it seemspositive that EU-antitrust law might be made fit to come up with a solution,

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44) Ohly, Ansgar, „Patenttrolle“ oder: Der patentrechtliche Unterlassungsanspruch unter Verhältnismäßigkeitsvorbehalt? Aktuelle Entwicklungen im US-Patentrecht und ihre Bedeutung für das deutsche und europäische Patentsystem, Gewerblicher Rechtsschutz und Urheberrecht Internationaler Teil 2008, 787–798, 794; Grabitz/Hilf, EUV/EGV, München 2010, Art. 82 EGV n. 293.

45) Calliess/Ruffert/Weiβ, EUV/EGV, München 2007, Art. 82 EGV n. 69 et seqq.

46) J. Drexl/A. Früh/M.-O. Mackenrodt/P. Picht/B. Pulyer/H. Ullrich, IIC 2010, 948, 965; A. Ohly, GRUR Int 2008, 787, 794.

the ambushes are just one part of an overarching issue: How and where to limit patent protection in order to avoid a perversion of patents into instruments hindering economic growth and innovation. Patents on business methods, patent thickets, royalty stacking, and patent trolls – all these phenomena relate back to the same problem. Maybe we can draw from the examination of patent ambushes and from the discussion of the approaches earlier said the results that help us to face the overarching issue of the appropriate limitations of patent protection.

I finish my presentation at this point. Thank you for your patience and I am eager to hear about the Korean perception of the problem.

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