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Haris Tsilikas

Antitrust Enforcement and Standard Essential Patents

Moving beyond the FRAND Commitment

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MIPLC Munich Intellectual Property Law Center
Augsburg München Washington DC

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Foreword

The present book is the result of the master thesis written in the summer of 2015 for the Munich Intellectual Property Law Center (MIPLC) LLM in IP and Competition. The subject of the thesis is the much debated issue of standard-essential patents, their enforcement and the implications for EU competition law. It is an attempt to deal with a problem not much discussed in the literature, namely the enforcement of SEPs for which the patent holder has not submitted a FRAND commitment to a standardisation body. In particular, the issue of transferability of SEPs and the emergence of new upstream business models by non-practicing entities (NPEs) may present a challenge to established standardisation patterns. I would like to express my deep gratitude to my thesis supervisor, Professor Dr. Josef Drexl for his valuable advice and support. I would also like to express my gratitude to my family and friends for supporting (and tolerating) me during this intensive year!

Munich, 8 May 2017 *Haris Tsilikas*

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Abstract

The present thesis discusses the implications of the enforcement of standard-essential patents (SEPs) for competition law. Formal cooperative standards-setting is an efficient and inclusive form of standardisation. As opposed to alternative forms of achieving interoperability between independent devices in network markets, such as *de facto* standardisation, formal standards-setting has the potential to result in near-optimal investment in research and development and at the same time in rapid implementation of innovative standards.

At the core of formal standardisation is an intricate balance of interests and incentives. On the one hand, contributors to the process are rewarded by the licensing of their patents that read on the technical specifications of standards and are essential to their implementation (SEPs); on the other hand, contributed technology is available to implementers of standards on fair, reasonable and non-discriminatory (FRAND) terms that allow for profitable investment in the production of standard-compliant products.

Although the standards-setting process yields significant benefits for competition and consumers, it is not itself without anticompetitive risks. Such risks may emerge at both prior- and post-adoption levels. Of particular concern for the antitrust agencies in major jurisdictions is the abuse of the market power conferred to holders of SEPs, for which there are no substitutes. Opportunistic SEP holders, it is feared, might take advantage of the industry lock-in a particular standard and extract excessive royalty rates reflecting not the economic value of the patent but rather its 'hold-up' value.

Enforcement of SEPs and in particular requests for injunctive relief is vital for the realisation of the hold-up scenario. Absent a credible threat of exclusion from the downstream market for standard-compliant products, implementers would not give in demands for excessive royalty rates. Thus the availability of injunctive relief to holders of SEPs raises the most troubling questions for competition policy and the enforcement of competition laws.

From patent litigation outcomes and antitrust enforcement of the recent years a common pattern has emerged in all major jurisdictions witnessing SEP disputes; injunctive relief should be unavailable to SEP holders in

cases where the alleged infringer is willing to agree on a licence on FRAND terms. The above convergence notwithstanding, the role of competition law in addressing the anticompetitive effects of opportunistic SEP assertion varies from jurisdiction to jurisdiction, depending on the operation of alternative legal frameworks, such as patent law and contract law.

However, antitrust analysis of abusive assertion of SEPs is characterised so far by a formalistic approach, focusing too narrowly on the voluntary FRAND commitment, rather than on the anticompetitive effects of non-FRAND licensing terms. This over-reliance on FRAND commitments leaves open a potentially harmful to competition loophole.

Two practical scenarios illustrate the shortcomings of relying too much on the FRAND commitment. While patent assertion entities (PAEs) and a particular sub-group among them, namely privateers, have recently took hold of numerous SEPs, they are at the same time not bound by any voluntary commitment to offer FRAND licensing terms. Those commitments bound previous owners of transferred SEPs, but not their current holders, PAEs and privateers.

Although patent law and contract law could provide valuable remedies against anticompetitive abuses in the enforcement of SEPs, antitrust authorities are in a unique position to decisively deter such conduct, in that they can impose positive financial harm on wrongdoers in the form of fines. However, for competition law to play an even more meaningful role in the future, antitrust analysis should move beyond the voluntary FRAND commitment and adopt a more encompassing effects-based approach.

Part I. Introduction

Technical standards form an integral part of any modern, network-based industry. Standards allow for individual devices to interoperate seamlessly with each other, they build consumer confidence that networks will work properly and they are thus a major driver of growth of network markets and of the economy in general. There are three paths to standardisation: legal standardisation set by state regulation; *de facto* standardisation, which is the outcome of fierce competition between competing standards in what could be called a 'standardisation race'; and formal coordinated standards-setting.

The most efficient form of standardisation is the privately-coordinated standards-setting process. Formal coordinated standardisation is conducted under the auspices of standards-setting organizations ('SSOs'), that is private voluntary institutions incorporating the most meritorious technical solutions into agreed upon standards.[1] Contributors to the standard setting process are typically allowed to apply for and exploit patents reading on their particular technical contributions. The licensing revenue from standard-essential patents (SEPs) is a vital economic incentive for participation in the process.

However, the obvious importance of access to SEPs for the implementation of standards by downstream businesses might also leave scope to SEP-holders for opportunistic behaviour which may in turn have dire consequences for implementers, competitors and consumers. SEPs are by some estimates litigated five times more than their non-SEPs equivalents.[2] Some of this litigation has reached the headlines mainly in the context of

1 Industry participants delegate on technical matters through their technical experts representing them at SSOs working groups. See Gupta, *The Patent Policy Debate In The High-Tech World*, Journal of Competition Law and Economics 9(4) 847 (2013).

2 Bekkers et al, *Selected Quantitative Studies of Patents in Standards*, (Tokyo Hitotsubashi University, Institute of Innovation Research, PIE/CIS Working Paper 626, 2014, at 68). Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2457064.

the 'smartphone wars', though litigation in other industries is no less frequent.[3]

The litigation practices of several stakeholders, including aggressive pursuit of injunctions and sales bans, has posed competition authorities a series of complex issues involving the role of antitrust enforcement in the context of standards-setting. Through a long process of trial-and-error a common pattern has emerged in the enforcement activities of antitrust authorities in two of the world's most important jurisdictions, the US and the EU. Competition law had so far a residual role in the context of formal coordinated standardisation; in most cases it fills in the gaps where other legal institutional frameworks, such as patent law and contract law, fail to produce pro-competitive outcomes.

More specifically, the US antitrust agencies benefit from a flexible legal system which has built-in checks and balances on alleged anticompetitive enforcement of SEPs. Long-standing equity traditions of providing for injunctions as a discretionary remedy under specific conditions, reminded by the Supreme Court in its critical *eBay* 2006 ruling,[4] have for the most part diffused the threat of anticompetitive effects by means of abusive SEP litigation.[5] The EU Commission, on the other hand, faced with inconsistent rulings by national courts, and in particular with German case law allowing for more or less automatic granting of injunctive relief in cases of SEPs infringement, played a much more active role.

However, it will be argued that antitrust enforcement against abusive assertion and litigation of SEPs has so far demonstrated a too narrow a focus on the voluntary FRAND commitment. This formalism might leave open an important loophole in cases where SEP holders have not made a FRAND commitment themselves. Two scenarios, illustrating the potentially harmful effects of this over-reliance on the FRAND commitment, are the ownership and subsequent enforcement of SEPs by patent assertion entities (PAEs) and privateers. An effects-based approach provides a more

3 Ibid, at 71.

4 *EBay Inc. v. MercExchange, L.L.C.,* 126 S. Ct. 1837 (2006).

5 In the context of smartphone SEPs litigation, for instance, there is to date not a single ruling granting injunctive relief in case of infringement. See Gupta and Snyder, *Smart Phone Litigation and Standard Essential Patents*, (Hoover Institution Working Group on Intellectual Property, Innovation, and Prosperity, Stanford University, Working Paper Series No. 14006, 2014). Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2492331.

encompassing framework for assessing abuses related to SEPs assertion, thus increasing legal certainty and guaranteeing the effective operation of the formal standard setting process.

The structure of the present thesis will be the following: part II includes a review of the standard setting process, the conditions for its competitive performance and the most significant threats to such performance prior- and post-standard-adoption; in part III the role of antitrust enforcement in the US will be discussed; in part IV the focus will move on the role of EU competition law against abuses in the enforcement of SEPs; in part V two scenarios of SEP ownership and enforcement will be examined, namely PAEs and privateers, as well as their implications for antitrust analysis; finally, part VI will summarize the conclusions of the analyses of the previous parts.

Part II. Standards-Setting and Competition Policy

A. The Standards-Setting Process

i. Economic Benefits of Formal Standardisation

The mainstream view of formal, cooperative standardisation recognises its significant pro-competitive potential and its promised benefits to consumers. Amongst them, enhanced interoperability, allowing for wide technology adoption and dissemination, growth of network-based markets and boost in consumer confidence that products will work together as described.[6]

Policy makers in major jurisdictions share the belief that cooperative standards-setting, by enhancing interoperability, is contributing to the emergence of dynamic, competitive and efficient network markets. The European Commission has repeatedly stressed the important benefits of achieving interoperability between individual devices, such as enhanced competition between the manufacturers of consumer products, lower prices, increased output and choice, realisation of positive network externalities for consumers.[7]

Recognising the essentially pro-competitive nature of the standards-setting process, the European Commission provided in its 'Horizontal Guidelines' a safe-harbour framework for the operation of SSOs.[8] According to the Commission standardisation agreements will generally fall outside the ambit of Article 101(1) TFEU against restrictive agreements provided that four conditions are met: *unrestricted participation* to the standards-setting process, *transparency* of the standard adoption, *no obligation to comply*

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6 Layne-Farrar and Padilla, *Assessing the Link between Standard Setting and Market Power,* p.9 (2010). Available at http://ssrn.com/abstract=1567026..

7 See European Commission, *Guidelines on the applicability of Article 101 TFEU to Horizontal Cooperation Agreements*, [2001] OJ C3/2, at 258, 300; Commission Decision, *Google/Motorola Mobility* (Case COMP/M.6381)[2012], para 46; Commission Decision, Case Number AT.39939 – *Samsung* (29/04/2014), para 22.

8 Horizontal Guidelines, *supra* n. 7, para 263.

imposed to participants, access to the standard on *fair, reasonable and non-discriminatory terms*.[9]

The antitrust authorities in the US have also underscored the important contribution of cooperative standards-setting in achieving interoperability with all its benefits for consumers, businesses and the economy as a whole. The Department of Justice in its 'Joint Statement' with the US Patent and Trademark Office (USPTO) acknowledged the important contribution of standardisation in interoperability between independent devices and, subsequently, in the growth of modern, high-tech network markets, such as the markets for mobile computing devices, on which consumers have come to rely.[10]

However, policy makers' focus on interoperability, incontestable as its benefits for economic efficiency and consumer welfare might be, might still miss some important and more nuanced aspects of formal standardisation. A proper evaluation of the benefits accrued by cooperative standard setting cannot but start from the premise that it is not the *only* way of achieving interoperability in network markets. *De facto standardization*, i.e. the uncoordinated emergence of a technical solution as dominant in the market, can also claim interoperability benefits and it is indeed a frequently observed market phenomenon.[11]

That said, the considerable costs that come with *de facto* standardisation are well established in microeconomics literature. Rivals in *de facto* standardisation engage in what could be essentially viewed as a winner-takes-all 'standardisation race'.[12] Although competition prior the emergence of a standard is fierce, once the industry is locked-in, the winner of

9 Ibid, para 280.

10 US DOJ and USPTO, *Policy Statement on Remedies for Standard-Essential Patents subject to Voluntary F/RAND Commitments* ('Joint Statement'), 8 January 2013, p.3, available at http://www.uspto.gov/about/offices/ogc/Final_DOJ-PTO_Policy_Statement_on_FRAND_SEPs_1-8-13.pdf..

11 For a comparative analysis of the superior efficiency of formal standardisation vis-à-vis *de facto* standardisation, see Drexl, *Standard-Setting Organizations and Processes: Challenges and Opportunities for Competition and Innovation*, Concurrences (forthcoming 2015).

12 Formal standardisation could also be viewed as a winner-takes-all race, since technologies that fail to be included in the standard can be expected to face rapidly declining demand. However it will be shown that market function, SSOs' bylaws, contract law and ultimately competition law constrain the market power of the SEP holder to a significant extent.

the race may expect to enjoy unconstrained market power over the downstream market for standardised consumer products. Moreover the winner is not decided on technical merit, as is typically the case with cooperative standards-setting.[13] Rather, the firm that is prepared to spend the most in coalition-building and attracting consumers will ultimately prevail.[14]

De facto standardisation races can be associated with considerable economic inefficiencies. The supra-competitive profits expected to be enjoyed by the winner induce over-investment in R&D. Insufficient aggregation of information results in inefficient and wasteful duplication of R&D efforts.[15] Most importantly, though, *de facto* standardisation, all its significant costs notwithstanding, still fails to guarantee that the best standard will prevail in the end.[16] Taking into account that the winner's market power raises a significant barrier to future entry, *de facto* standardisation may well result in the industry being locked-in in an inefficient standard for decades.[17]

Formal standardization provides a more efficient alternative model for network markets. Being a *coordinated* and *inclusive* process, formal standardisation has the potential to bring about near-optimal levels of investment in R&D, without the wasteful over-investment of *de facto* standardisation races, and the best technologies to the market, as opposed again to *de facto* standardisation in which the best technical solutions do not necessarily prevail as standards.

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13 Cabral, *Introduction to Industrial Organization* 315 (MIT Press, 2000).

14 A critical feature of de facto standardisation is the rivals' struggle to achieve the 'critical mass' of consumers that will decide the winning standard through the so-called 'snowball effect'. Once the critical mass is reached, subsequent consumers will opt for the leading technology, even if it was not their preferred one. It thus could be argued that the prevailing standard is not decided by the market as a whole, but rather by the choice of the initial fraction of consumers that forms the 'critical mass'. See Cabral, *supra* n. 13, at 313.

15 The economic literature on patent races could offer important insights on the inefficiencies of standardisation races. Among the many important contributions to the field, see Dasgupta and Stiglitz, *Industrial Structure and the Nature of Innovative Activity*, The Economic Journal 266-293(1980).

16 Cabral, *supra* n. 13, at 325.

17 A good illustration of industry lock-in an inefficient standard is the QWERTY typewriters' keyboard layout. See ibid, at 316-318.

ii. Formal Standardisation and its Superior Efficiency

Cooperative standards-setting, by means of self-regulated coordination and inclusive participation, allows for a *predictable and rewarding structure of returns* to R&D and relatively *low barriers to entry* in both the upstream market for contributed technologies and the downstream market for standard-compliant products. Critical in the proper function of formal standards-setting is providing appropriate incentives for all stakeholders to invest in and commit themselves to the process, otherwise private actors would be unwilling to bear the costs of participation which for some SSOs can be particularly high.[18] This is a delicate balance, one that is foremost dependent on expectations.

One the one side, technology contributors expect a significant revenue stream from licensing their essential IPRs. Cooperative standardisation essentially allows for technologies that are included in standards demand from the whole downstream industry for production of standard-compliant products. The significant licensing revenues flowing from inclusion in the standard induce firms to invest in R&D and to contribute their best available technologies to the standards-setting process.

Strategic considerations provide further incentives for contribution to the process. Inclusion in standards allows contributing firms to influence the course of standardisation, to make full use of their existing R&D capabilities and as a consequence achieve higher efficiency and productivity in their future innovative endeavours. Moreover holding a valuable SEP portfolio gives vertically integrated contributors leverage in their cross-licensing negotiations vis-à-vis their downstream rivals.

One the other side, standard implementers expect significant benefits from formal standardisation as well. Enhanced interoperability and consumer confidence that products will communicate seamlessly with one another, boost growth in network markets. Rapid network growth increases the utility of participation in the network for each individual consumer through direct network effects.[19] Internalisation of network externalities by consumers increases, in turn, demand and consumers' willingness to pay for network consumer goods. Downstream implementers can also rely

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18 At ETSI for instance participation costs might reach the annual fee of €150,000. See ETSI Fees structure, available at http://www.etsi.org/membership/fees; See also, Layne-Farrar and Padilla, *supra* n.6, at 10.

19 Cabral, *supra* n.13, at 311.

on the formal standardisation in that it promises uninhibited access to the developed standards and reasonable licensing costs that allow for sufficient margin of profit for their investments.

Critical for the proper function of the standards-setting process and a balancing of interests and incentives is the predictability of the rewards and costs associated with licensing of SEPs. FRAND licensing terms have emerged from the market practice of the last few decades as the compromise point between technology contributors and standard implementers. FRAND stands for licensing on *fair, reasonable and non-discriminatory* terms. As abstract as they might appear to be, FRAND terms should be understood as the range of contractual arrangements that allow for a sufficient and predictable monetary reward for contributors so as to incentivise participation in the cooperative standard setting process, whilst at the same time allowing implementers sufficient margin of profit for their investments in the production of standard-compliant products.

The importance of FRAND licensing terms in accommodating the interests of both contributors and implementers is reflected in the bylaws of most SSOs which require declaration and unrestricted licensing of SEPs on FRAND terms. SSOs bylaws and the subsequent FRAND commitment by SEPs-holders, which will be further discussed in the following chapter, indeed infuse the collaborative standard setting process with predictability and reliability, resulting in wide standard adoption, unrestricted market entry and more investment in innovative technologies.

Although the risks from opportunistic behaviour in the standard setting context will be discussed in greater detail below,[20] it is pertinent to stress out at this point that FRAND licensing is a *necessary* condition for the competitive operation of cooperative standards-setting. Behaviour that disturbs the predictability of rewards and costs can critically disrupt the process as a whole.

Licensing outside the FRAND range would significantly interfere with the current balance of incentives for investment in R&D and standard implementation. Below-FRAND licensing would diminish incentives to contribute to the standards-setting process resulting either in under-investment in innovation or in the diversion of investment and R&D effort towards inefficient *de facto* standardisation races. Above-FRAND licensing would reduce investment in standard implementation potentially leading to lower

20 *Infra,* p. 16-17.

output, fewer standard-implementing products and higher prices for consumers. In both cases efficient firms might be forced to leave the market and significant barriers to entry in both upstream and downstream markets would be raised, thus reducing competitive pressures for follow-on innovation, shielding at the same time incumbents from potential competition.

It is for competition policy to assure that network markets remain open and competitive. Conduct that is likely to result in non-FRAND licensing terms can be safely assumed to result in the disruption of the cooperative standards-setting process, anticompetitive foreclosure and significant harm to efficiency and consumer welfare. It is thus a central argument of the present thesis that FRAND licensing of SEPs is an obligation stemming from competition law itself.[21]

Although the FRAND commitment, whether is deemed contractual or declaratory in nature, is an additional and crucial safeguard, stakeholders that are willing to enter into an agreement on FRAND terms should be able to directly rely on competition law against attempts at non-FRAND licensing. As it will be shown in the following chapters, relying too much on the voluntary FRAND commitment might lead some to the potentially pernicious conclusion that holders of IPRs that are contributed and declared essential in an SSO and who have not made such a commitment themselves (for instance when such SEPs are acquired by third parties following inclusion in a standard) are free to pursue onerous, non-FRAND terms.[22]

iii. Anticompetitive Risks Prior-Adoption of a Standard

The standardisation process itself is not without risks, for it is, after all, a form of coordination involving discussions even among horizontal competitors. Formal standardisation could, under certain circumstances, raise barriers to entry and enable stakeholders to exercise control over the standard thereby excluding actual or potential competitors.[23]

The European Commission in its 'Horizontal Guidelines' identified collusion between competitors to raise prices, reduce output and restrict the

21 *Infra*, p. 55-57.
22 *Infra*, p. 52.
23 Jones, *Standard-Essential Patents: FRAND Commitments, Injunctions and the Smartphone Wars*, European Competition Journal 10(1) 4 (2014).

inclusion of innovative technologies as a particular concern when assessing standardisation agreements under Article 101 TFEU.[24] It further stressed out the exclusionary effects of standardisation for technologies that fail to be included in a standard and which subsequently face insurmountable barriers to entry.[25] However, as was already mentioned above, the European Commission, along with other antitrust authorities in other major jurisdictions, views formal standardisation as an ultimately procompetitive process thus providing a safe harbour to SSOs that meet the requirements of transparency and unrestricted accessibility.

Concerns over the transparency of the standard adoption process were largely muted until the very recent change of the IPRs policy of one of the most important SSOs, the Institute of Electrical and Electronics Engineers (IEEE), which is responsible for the development, among others, of the vital and extremely popular 802.11 Wi-Fi standard.[26] The new IEEE policy on SEPs envisages a far stricter framework for seeking injunctive relief, a topic further discussed below, but also a 'specific' framework for calculating FRAND royalty rates.

Although IEEE's new IPR policy received a positive business review letter from the Antitrust Division of the US Department of Justice,[27] the provisions on the calculation of royalties proved particularly controversial. Commentators have criticised the new IEEE policy as a result of monopsonistic collusion.[28] The backlash from some important industry participants was even stronger. Qualcomm, InterDigital, Nokia and Ericsson have already submitted negative letter of assurances, declaring that they will not license their SEPs under the new IEEE IPR policy.[29] Whether the new IEEE policy will eventually have the devaluating impact on royalties

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24 See, Horizontal Guidelines, *supra* n.7, para.264.

25 Ibid, para.260.

26 See The Institute of Electrical and Electronics Engineers, *IEEE Constitution and Bylaws* (June 2015). Available at https://www.ieee.org/documents/ieee_constitution_and_bylaws.pdf..

27 Business Review Letter from Hon. Renata B. Hesse, Acting Assistant Attorney Gen., U.S. Department of Justice, to Michael A. Lindsay, Esq., Dorsey & Whitney, L.L.P. (February 2, 2015). Available at http://www.justice.gov/sites/default/files/opa/press-releases/attachments/2015/02/02/ieee_business_review_ letter.pdf.

28 See Sidak, *The Antitrust Division's Devaluation of Standard-Essential Patents*, The Georgetown Law Journal Online 104 48 (2015).

29 Richard Lloyd*, Ericsson and Nokia the latest to confirm that they will not license under the new IEEE patent policy* (April 10, 2015). Available at http://www.iam-

and innovation that its critics currently contend remains to be seen, however its impact on the IPR policies of other major SSOs might be of more immediate concern.

B. Theories of Post-Adoption Harm

The recent controversy over the new IEEE policy aside, policy makers and antitrust enforcement agencies have hitherto been mainly concerned over the behaviour of participants to the standards-setting process after the adoption of a standard.

The most influential theory of harm in the context of standards-setting is the 'patent hold-up' theory, developed by Lemley and Shapiro.[30] The mechanism for patent hold-up is relatively straightforward: the downstream product manufacturer, unaware of infringing a patented technology, undertakes a significant investment in building the productive capacity necessary to produce the technology-incorporating product; the initial investment costs are sunk; the owner of the patent asserts his rights; and finally the infringer, in view of the prohibitive switching costs and under the threat of injunction, succumbs to the demands of the patentee who charges exorbitant royalties. According to the hold-up theory, the excessive royalty rate, in such circumstances, bears no relationship with the value of the patented technology itself, but rather reflects the switching costs the infringer would have to incur in order to design around the patent, i.e. the so-called 'hold-up value'.

The danger of patent hold-up is greater in industries with vast numbers of overlapping and fragmented IPRs or, in Shapiro's formulation, 'patent

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media.com/blog/Detail.aspx?g=d07d0bde-ebd6-495a-aa72-4eecb9dac67d; Richard Lloyd, *InterDigital reveals that, like Qualcomm, it is reworking relationship with IEEE after introduction of new patent policy* (March 24, 2015). Available at http://www.iam-media.com/Blog/Detail.aspx?g=8c9676dd-6bbd-4d6c-b3e5-9a5ddeb36581; Susan Decker and Ian King, *Qualcomm Says It Won't Follow New Wi-Fi Rules on Patents* (February 11, 2015). Available at http://www.bloomberg.com/news/articles/2015-02-11/qualcomm-says-new-wi-fi-standard-rules-unfair-may-not-take-part.

30 Lemley and Shapiro, *Patent Holdup and Royalty Stacking*, Texas Law Review 85 1991 (2007).

thickets'.[31] Patent thickets, in imposing downstream producers onerous obligations to search for and license patented technologies from various patentees, create a significant restraint on the commercialisation of innovation. Although the anticompetitive effects of patent thickets were heavily disputed,[32] Shapiro's formulation provides a valuable insight on the restraints to innovation and its swift commercialisation in markets characterised by fragmented ownership in IPRs.

Closely associated with hold-up and patent thickets, is the issue of royalty stacking. Royalty stacking may arise in conditions of fragmented IPRs ownership in cases where patent owners impose aggregate royalty rates that are prohibitively high for the licensee to operate at a profit.

Although the patent hold-up hypothesis was initially developed outside the standards-setting context, its relevance for analysing opportunistic behaviour after the adoption of a standard became immediately clear. Prior to the adoption of the standard, alternative technologies compete freely for inclusion in the standard. However, once the optimal technical solutions are chosen and the standard is to be implemented such competition ceases.[33] Standard implementers that have failed to license a particular SEP may find themselves facing unreasonable royalty offers or even exclusion from the market by means of injunction.

In such a case, switching to another alternative technology is even more difficult than in the original scenario envisaged by Lemley and Shapiro, for if the asserted patent is truly essential the end product cannot be standard-compliant without a licence. The scope for abuse becomes even clearer if one considers that for many standards, implementers have to license hundreds if not thousands of SEPs. In such circumstances, even a weak patent, which is one of thousands of patents reading on a given product, might under certain circumstances command high royalty rates.[34]

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31 Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, Innovation Policy And The Economy 1 119 (2001).

32 For instance, it has been argued that patent thickets result in extensive cross-licensing without blocking follow-on innovation. See Cohen, Nelson and Walsh, *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (Or Not),* (NBER, Working Paper No. 7552, Feb. 2000), available at http://www.nber.org/papers/w7552..

33 Farrell, Hayes, Shapiro and Sullivan, *Standard Setting, Patents, and Hold-Up*, Antitrust Law Journal 74 603 (2007).

34 Kattan, *FRAND Wars and Section 2*, Antitrust 27(3) 31 (2013).

However, for the hold-up hypothesis to realise the most fundamental requirement is that the implementer faces a credible threat of injunction. Only in face of exclusion from the market for the standard-compliant goods will the implementer be forced to agree upon whatever terms imposed by the SEP-holder.

Thus the issue of the remedies an SEP holder may pursue in infringement actions and more specifically the conditions under which an injunction for a SEP is warranted is at the core of the current hold-up controversy. One could say, with a certain degree of schematisation, that scholarly literature and public policy polarised between two extremes ending up somewhere in between. On the one hand, several commentators argued that participation in the standards-setting process and in particular the FRAND commitment, which will be examined in detail below, curtail to a significant extent the exclusive rights the SEP-holder would normally enjoy.[35] On the other hand, those that supported that removing injunctions would tilt the bargaining table completely in favour of implementers, leading to under-compensated innovators and reduced incentives to participate in the standards-setting process.[36]

The emerged consensus though distancing from a radical refusal of injunctive relief for SEP-holders in all cases, emphasised the need to limit SEPs holders' exclusive rights to enjoin infringers in cases where the standard implementer is willing to enter into an agreement on FRAND terms.[37] Thus the concept of the 'willing licensee' is the benchmark which typically demarcates the boundaries of the holders' rights to enjoin infringers without jeopardising the credibility and performance of the standards-setting process, in breach of competition law.

The patent hold-up debate in the context of standards-setting has probably been the most passionate debate in competition law for the last decade. Although it is largely couched in theoretical terms and scarce empirical research is available, it has exerted powerful influence on policy makers

35 Chappatte, *FRAND Commitments—The Case for Antitrust Intervention*, European Competition Journal 5 320, 331 (2009); Jones, *supra* n.23, at 24; Lemley and Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, Berkeley Technology Law Journal 28 1144 (2013).

36 For a more detailed review of the criticism against the patent hold-up theory, see *infra* p. 17-19.

37 Kieff and Layne-Farrar, *Incentive Effects from Different Approaches to Holdup Mitigation Surrounding Patent Remedies and Standard-Setting Organizations*, Journal of Competition Law and Economics 9(4) 1108 (2013)..

both in the EU and the US. The following part focuses on regulatory approaches to the hold-up problem.

C. Responses to Hold-Up – SSOs Self-Regulation and the Voluntary FRAND Commitment

One could distinguish two levels of safeguards against hold-up at a precautionary level, i.e. before the SEP-holder actually enforces its rights seeking injunctive relief. As a first step, SSOs regulate the behaviour of contributors by imposing certain limitations on their post-adoption behaviour. At a second level public policy makers formulate a framework that provides strong disincentives for anticompetitive behaviour. This includes soft law, such as guidelines, public statements and declarations, but also enforcement action that deters future opportunistic conduct, for instance through merger control. The antitrust authorities' activities will be examined in the following parts of the present thesis. In this part the focus will be on how SSOs regulate the process with view to avoid risks of hold-up.

As mentioned above, SSOs are mechanisms of industry coordination for the development of optimal technical solutions which are implemented industry-wide after the standards are formally adopted. Critical in SSOs' function is to safeguard the predictability of the structure of returns for all stakeholders involved and the reliability of the process as a whole. This is a daunting task; SSOs' membership typically involves participants with diametrically opposite views of the standards-setting process and their aspirations and expectations from the adoption of the standard are no less diverging.

The European Commission in its analysis of standards-setting in its Horizontal Guidelines, has identified three main categories of participants: pure-upstream operators, which do not practice the patents themselves and maximisation of royalties is their main concern;[38] pure-downstream companies which license technology developed upstream and have obviously an incentive to lower royalty rates as much as possible; finally, there is the

38 The upstream group of SSOs members is usually referred to as Non-Practicing-Entities (NPEs), a term which may conceal the actual heterogeneity of this group; indeed a university and a patent-assertion entity (patent troll), although both 'upstream', could hardly be considered institutions with identical incentives.

third group of vertically integrated companies which both license out their own technologies and produce standard-compliant end products.[39] This category has mixed incentives and is holding the bulk of SEPs for all major standards.[40]

The analysis on cooperative standardisation in the previous part already pointed out that SSOs have through the years developed the necessary flexibility to accommodate such widely diverging business models, incentives and objectives.[41] This flexibility is best reflected in SSOs bylaws and regulations. Most SSOs impose commitments with respect to essential IPRs, which without being overly restrictive ensure the widest possible participation and consequently the widest possible adoption of standards.

The two most important obligations that SSOs impose to holders of essential IPRs are *disclosure* of potentially relevant patents and patent applications prior to adoption and the *FRAND commitment*. The disclosure requirement is mainly intended to ensure effective access to implementers that are willing to license SEPs on FRAND terms and to address deceptive conduct before the adoption which may end up in a 'patent ambush'. Though some cases of patent ambush have been pursued by antitrust authorities, it is less frequent a phenomenon.[42]

The FRAND commitment on the other hand intends to allay fears of opportunism, and reassure that licences will not be withheld in the first place. The FRAND commitment stands for fair, reasonable and non-discriminatory terms that the contributor pledges to offer to anyone wishing to implement the standard on FRAND licensing terms. Although a precise definition of FRAND terms is still elusive, the FRAND commitment has a remarkable record of facilitating the diverging interests identified above and has proved a workable framework for the vast majority of the interactions conducted for the purposes of standard implementation.[43]

By imposing FRAND commitments, the SSOs try to ensure that on the one hand contributors are appropriately rewarded for their contributed technologies while, on the other hand, opportunistic private profit-max-

39 See Horizontal Guidelines, *supra* n. 7, para.267.
40 See Bekkers et al., *supra* n. 2, at 27.
41 Epstein, Kieff, and Spulber, *The FTC, IP, and SSOs: Government Hold-Up Replacing Private Coordination*, Journal of Competition Law and Economics 8(1) 22 (2012).
42 Commission Decision, *Rambus* (Case-COMP/38.636)[2010] OJ C30/17.
43 See Epstein, Kieff and Spulber, *supra* n. 41, at 21-22.

imising, at the expense of other participants, implementers and consumers, by holders of SEPs, will not inhibit the success of the developed standards and will neither lead to higher prices or lower output.[44]

The essence of the FRAND commitment is that SEPs holders voluntarily waive some of the exclusive rights bestowed upon them by patent law, in order to maintain effective access to the developed standards on FRAND terms. This voluntary curtailing of exclusive rights does not only entail a limitation of the right to enjoin 'willing licensees' as discussed above, but also limitations on the pricing policy of the SEP-holder, as well as limitations on his exclusive or sole licensing prerogatives.

In respect of the right to injunction, most SSOs so far do not impose an explicit obligation to their members to refrain from seeking, obtaining or enforcing injunctions. However, as already discussed above, IEEE recently amended its bylaws to preclude the seeking and enforcement of injunctions "*unless the implementer fails to participate in, or to comply with the outcome of, an adjudication, including an affirming first-level appellate review*".[45] It should be noted however, that the new IEEE policy envisages a commitment not to pursue injunctions that goes far beyond anything seen so far imposed on SEP-holders either by antitrust authorities or courts, as the analysis in the following parts III and IV will demonstrate.

D. Hold-Up or Hold-Out?

As already mentioned above, the possibility of patent hold-up in the context of cooperative standards-setting was and still is disputed. Criticism is concentrated on the plausibility of hold-up in the first place, but also on the policy implications of a restrictive approach towards the availability of injunctive relief for innovation and the performance of collaborative standardisation.

Several commentators have emphasised the competitive constraints faced by most SEPs-holders in their licensing policies. *Layne-Farrar* and *Padilla* cite the competition from other standards as a constraint to market

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44 Ratliff and Rubinfeld, *The Use and Threat of Injunctions in the RAND Context*, Journal of Competition Law and Economics 9(1) 5 (2013).

45 See IEEE-SA Standards Board Bylaws, Art. 6(2), available at http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6..

power of SEPs holders.[46] Another factor curbing market power is the countervailing power of the implementers, especially if they have their own SEPs portfolio. In that case incentives to cross-license are stronger than incentives to engage in opportunistic conduct.[47]

Other commentators rely on the repeat-play nature of the standard setting process, which disciplines unscrupulous SEP-holders and mitigates to a significant extent the danger of hold up.[48] Access to court review of the offered terms and whether they comply with the FRAND commitment might also safeguard against unreasonable and excessive licensing terms.[49]

However, the most convincing argument, from a policy perspective, against imposing an overly restrictive rule against seeking injunctive relief is that, by removing the threat of injunctions for SEPs, the bargaining power of SEPs-holders and implementers would be decisively skewed in favour of the latter thus resulting in 'reverse hold-up' or hold-out.[50] Thus SEPs holders' licensing revenue would be unduly squeezed and consequently the incentives to innovation and participation in the standards-setting process would be impaired.

Insofar as effective protection is provided for by patent law against unwilling potential licensees, the danger of hold-out might not be as urgent as some commentators and stakeholders seem to contend, it is nonetheless a legitimate concern. A sweeping policy against injunctive relief would indeed put bad-faith implementers at an advantage *vis-à-vis* SEPs owners and other standard implementers, an advantage unjustified from a public policy perspective. This might be the reason why the hold-out theory has influenced antitrust authorities in the EU and the US and enforcement ac-

46 See Layne-Farrar and Padilla, *supra* n. 6, at 12-13.

47 Camesasca, Langus, Neven and Treacy, *Injunctions for Standard-Essential Patents: Justice Is Not Blind*, Journal of Competition Law and Economics 9(2) 287 (2013).

48 See Kieff and Farrar, *supra* n. 37, at 1098.

49 Carlton and Shampine*, Identifying Benchmarks for Applying Non-Discrimination in FRAND*, Competition Policy International 8(1) 5 (2014).

50 See Gupta, *supra* n. 1, at 844; Geradin, *The European Commission Policy towards the Licensing of Standard-Essential Patents: Where Do We Stand?*, Journal of Competition Law and Economics 9(4) 1129 (2013); Sidak, *The Meaning of FRAND, Part II: Injunctions*, Journal of Competition Law and Economics 11(1) 7 (2015); see also FTC's Commissioner Wright comments, in ibid, at 32 and accompanying note; Kieff and Farrar, *supra* n. 37, at 1113.

tion has so far targeted cases in which the putative licensee was, in the view of antitrust enforcers, clearly willing to take a licence on FRAND terms.

Part III. Standards-Setting and Antitrust Enforcement in the US

In the US the scope of antitrust enforcement by the country's two antitrust authorities, the Antitrust Division of the Department of Justice (DOJ) and the Federal Trade Commission (FTC), has been defined by the institutional performance of US courts. Litigation in the US, with the possible exception of cases adjudicated by the International Trade Commission (ITC), has produced a working balance of interests between SEPs owners and standard implementers. This is particularly due to US courts' willingness to avail themselves of a variety of legal bases to deny injunctive relief in cases where such remedy would significantly affect the competitive performance of the markets for standard implementing products.

Specifically, by recognising the contractual nature of the FRAND commitment US courts have made the FRAND obligation directly enforceable by means of contract law. Moreover, the recognition of the equitable nature of injunctive relief by Supreme Court's *eBay* ruling, has provided lower courts with a very flexible framework which has produced pro-competitive litigation outcomes.

In this context antitrust authorities have only rarely intervened to protect 'willing licensees' from the threat of injunctions. That said, decisive antitrust enforcement, in those residual cases where the seeking of injunctions was liable to impede effective competition in the downstream markets, has added a further layer of protection and, even more importantly, a significant deterrence to opportunistic behaviour.

A. The Nature of the FRAND Commitment

In the US, the contractual nature of the FRAND commitment is widely understood as vital to its effectiveness and practicality, without which unimpeded access to standards cannot be maintained.[51] It is exactly in view of the overarching aim to secure effective access that the FRAND contractual commitment circumscribes the SEPs-holders' statutory patent rights.[52]

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51 See Sidak, *supra* n. 50, at 9.
52 Ibid, at 13-14.

In *Realtek V. LSI,* the District Court for the Northern District of California interpreted the FRAND commitment as a *binding contract* between the SSO and the SEP-holder, standard implementers being third-party beneficiaries.[53] The court further ruled that the SEP-holder has a contractual obligation to make an *explicit offer* on FRAND terms to the standard implementer. This view was also endorsed by the FTC in its *Google/MMI* Consent Order which imposed Motorola (by then a wholly owned subsidiary of Google) the obligation to offer first FRAND terms to potential licensees before even seeking injunctions.

Of course, since apart from IEEE no other SSO has imposed an outright restriction in seeking injunctions, SEPs-holders that file for injunction are not violating their contractual obligations *as such*. In *Apple V. Motorola,* the Federal Circuit indeed dismissed a *per se* rule against injunctions for SEPs.[54] However, the SEP-holder's obligation to offer first FRAND terms has important implications for his right to seek injunctions which cannot be understated.

The 9th Circuit in its *Microsoft V. Motorola* ruling upheld the temporary restraint order issued by the District Court for the Western District of Washington against Motorola, which prohibited the enforcement of any injunctions Motorola might receive in its litigation in Germany until a final decision could be reached on whether Motorola's offer was indeed on FRAND terms.[55] The *Realtek* court applied the same reasoning, explicitly citing *Microsoft*, in accepting Realtek's injunction request against the enforcement by LSI of its ITC exclusion order under Section 337 of the 1930 Tariff Act.

The ability of standard implementers to sue and enjoin SEP-holders that fail to honour the FRAND commitment is a valuable constraint on opportunistic behaviour. Its importance is more evident if one considers the position of German courts on the same subject. It will be shown below that German case law in seeing in FRAND commitment nothing more than a mere declaration on the part of the SEP-holder, and in relying instead on a quite unique interpretation of competition law, has whittled away much of the intended effectiveness and enforceability of the FRAND commitment.

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53 *Realtek Semiconductor Corp. v. LSI Corp.*, 946 F. Supp. 2d 998, 1005 (N.D. Cal. 2013); see also *Microsoft Corp. v. Motorola, Inc.,* 696 F.3d 872, 878 (9th Cir. 2012).

54 *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1331 (Fed. Cir. 2014).

55 *Microsoft Corp. v. Motorola Inc.*, 864 F. Supp. 2d 1023, 1038 (W.D.Wash. 2012).

B. Injunctive Relief Post-eBay

Apart from breach of contract action, standard implementers that are faced with injunctions can also rely upon patent law itself to avoid being enjoined by SEPs-owners. Under Section 283 of the US Patent Act courts adjudicating on patent infringement cases *may* issue injunctions prohibiting infringers from making, selling or offering for sale infringing products "*in accordance with the principles of equity*".[56] The wording of the provision makes it clear that injunctive relief is an equitable remedy at the discretion of the courts. However, prior-*eBay*, US courts failed to consistently apply traditional equity principles in adjudicating patent infringement cases and injunctions were more or less issued as a matter of course.[57] The Supreme Court changed this situation in 2006 and its decision in *eBay*.

The dispute concerned one of MercExchange's business method patents. The District Court for the Eastern District of Virginia denied MercExchange injunctive relief in its infringement action against eBay relying on the fact that MercExchange was not practicing the patent itself but rather exploited the patent through extensive licensing. On appeal, the Federal Circuit dismissed the district court's interpretation of the Patent Act and instead indicated that injunctions should generally be granted in cases of infringement, except in rare circumstances and in order to protect the public interest. The Supreme Court dismissed the views of both courts, though such dismissal was addressed first and foremost at the Federal Circuit and its friendly stance towards injunctions for patent infringement.

The traditional four-factor test for awarding injunctive relief in equity should equally be applied to patent infringement cases.[58] According to the Supreme Court for an injunction to be granted, the patentee must establish:

> *"(1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.*"[59]

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56 35 U.S.C.§ 283.

57 Sidak, *Patent Holdup and Oligopsonistic Collusion in Standard-Setting Organizations*, Journal of Competition Law and Economics 5(1) 140 (2009).

58 *Weinberger v. Romero-Barcelo*, 456 U. S. 305, 311–313 (1982); *Amoco Production Co. v. Gambell*, 480 U. S. 531, 542 (1987).

59 See *eBay V. MercExchange, supra* n. 4.

The Court went on to stress out that the four-factor test implied no *per se* rule against granting injunctions to patentees that do not normally practice the patents themselves. At the same time no different test should apply in injunctions for patent infringement than that applied to permanent injunctions in general.

Of particular relevance to the standards-setting context were the remarks of Justice Kennedy in his concurring opinion (Justices Stevens, Souter and Breyer also concurred). Justice Kennedy emphasised the danger of injunctions been used by NPEs to extract unreasonable royalties. Moreover Justice Kennedy addressed the issue of complex products incorporating multiple components. In his view, in cases where the infringement concerns only a minor component of the end product, injunction is not warranted and damages are more than enough to compensate the patent owner.

In *Apple V. Motorola* the Federal Circuit applied the *eBay* four-factor test to dismiss Motorola's request for injunction.[60] As already pointed out above, the court rejected what it viewed as a *per se* rule against injunctions for SEPs in Posner's ruling for the same case at the District Court for the Northern District of Illinois. Moreover, building on Justice Kennedy's remarks in *eBay*, the Federal Circuit held that for products with many non-infringing components, plaintiffs will have difficulty in meeting the public interest factor.

However, more crucial was the court's reasoning on the implications of the FRAND commitment and the irreparable harm requirement. The Federal Circuit held that, unless the standard implementer is demonstrably unwilling to take a licence on FRAND terms, SEPs-holders' FRAND commitment will be a strong indication that monetary damages are sufficient remedy and that the bar for meeting the first eBay factor is very high indeed. In the particular case, Motorola's extensive licensing of its FRAND-encumbered SEPs were damning for its request for injunction.

Although the four-factor test applies to all patent cases, the impact of *eBay* on requests for injunctions for SEPs is decisive. Apart from difficulty in meeting the first two requirements of irreparable harm and insufficient compensation by damages, already stressed by the Federal Circuit in *Apple V. Motorola*, meeting the third and fourth requirements is no easy task either. The potentially harmful impact an injunction might have on a

60 See *Apple V. Motorola, supra* n. 54 at 70-73.

standard implementer – in particular in fast-moving markets and where exclusion from a standard is tantamount to exclusion from the market, as in mobile telecommunications – should be taken into account by courts when reviewing the third factor (balance of hardships). Moreover, the integrity of the standards-setting process and the effective access to standards by all businesses wishing to take a licence on FRAND terms are important public policy considerations that might weigh against granting injunctions in the context of standards-setting and against willing implementers.

It comes as no surprise that, to date, SEPs-holders have failed to get any injunctions for their patents and there is not a single case of injunction for a SEP been granted by US courts.[61] It is for that reason that antitrust authorities in the US have shown particular constraint and have intervened only in the very exceptional cases where opportunistic conduct could not be dealt with under contract or patent law.

C. Exclusion Orders and the International Trade Commission

Although the US courts adjudicating SEPs' infringement cases have demonstrated remarkable flexibility thus resulting in pro-competitive litigation outcomes, an important qualification to this rule has emerged in the last few years; the International Trade Commission (ITC) and its power to exclude infringing products from importation to the US market. Under Article 337 Tariff Act, the ITC may grant exclusion orders against infringing imports, *'unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such articles should not be excluded from entry*'.[62]

One might have expected the Commission to avail itself of such a broad public policy proviso in its examination of infringement cases involving SEPs. In particular, the examination of the effects of an exclusion order on the competitive conditions of the US economy and upon consumers, would allow for a flexible and economically informed application of

61 See Gupta and Snyder, *supra* n. 5.
62 Tariff Act s. 337, 19 U.S.C. § 1337 (1930).

patent law and the remedies provided for by the Tariff Act in the standard setting framework.

However, the ITC in one of the most heavily commented and criticised cases involving SEPs, that between Samsung and Apple, failed to do so.[63] On the contrary, viewing itself as essentially unconstrained by the Supreme Court's *eBay* ruling and its implications for injunctive relief, the ITC in *Samsung* granted what essentially amounts to an injunction on SEPs reading on ETSI's 3G standard.[64]

The ITC disregarded the standards-setting context of the case, and in particular the commitment by Samsung to ETSI to license its 3G patents on FRAND terms in its analysis of the public policy clause of Section 337 (d)(1) Tariff Act. Instead, it reviewed the FRAND argument raised by Apple in the proceedings as an affirmative defence to the infringement and refused to undertake any further analysis of its implications for the competitive conditions on the market or the US consumers.[65] On the contrary, it considered the effects of the exclusion as negligible in view of the wide range of available competing devices.[66]

The ITC's unfortunate disregard of the anticompetitive effects of an exclusion order against a standard implementer willing to agree to a licence on FRAND terms had the potential to undermine the standards-setting process by offering a forum of choice for opportunistic SEPs' holders.[67] However, such danger was largely muted owing to a veto against the enforcement of the exclusion order by the US Trade Representative, acting

63 See *In the Matter of Certain Electronic Devices, Including Wireless Communication Devices, portable Music and Data Processing Devices, and Tablet Computers*, Inv. No. 337-TA-794 (4 June 2013). Available at http://www.usitc.gov/secretary/fed_reg_notices/337/337-794_notice06042013sgl.pdf..

64 The facts of the case are virtually identical to those in the European litigation between the two parties, which will be further discussed below. It should be noted though that Samsung's demand of a royalty rate of 2.4% of the end product price was found unreasonable in all European forums apart from Germany and that the European Commission initiated a formal investigation resulting in Samsung offering binding commitments not to follow the disputed course of action in the future.

65 *Supra* n. 63, at 112 and accompanying note 22.

66 Ibid.

67 Florian Mueller, *Obama Administration vetoes ITC import ban of older iPhones and iPads over Samsung patent* (August 3, 2013). Available at http://www.foss-patents.com/2013/08/obama-administration-vetoes-itc-import.html..

on behalf of President Obama.[68] The Presidential veto challenged the ITC ruling on grounds of its effects on cooperative standardisation, citing the possibility of a patent hold-up as a particular concern.[69] The US Trade Representative further addressed a firm warning that future ITC rulings failing to examine thoroughly the context of voluntary cooperative standards-setting and the FRAND commitment would face a similar fate.[70]

D. Antitrust Enforcement by the DOJ and the FTC

Antitrust authorities have made clear that they will pursue cases of aggressive litigation of SEPs, in particular against the seeking of injunctions against willing licensees. What is remarkable in the authorities' enforcement activities, is that they have so far refrained from initiating proceedings on the basis of the most fundamental provisions of US antitrust law, i.e. Sections 1 and 2 Sherman Act. Instead, FTC has for the most part relied upon Section 5 FTC Act, against unfair methods of competition or unfair practices to the detriment of consumers and DOJ has initiated investigation on SEPs enforcement only once against Samsung which eventually did not lead to prosecution.

The FTC in its merger review in *Bosch/SPX* merger, imposed strict commitments on Bosch to refrain from "*initiating, or threatening to initiate, any Action demanding injunctive relief*" for SPX's SEPs portfolio, unless against a clearly unwilling implementer.[71] In its public statement, the FTC issued a clear warning that in cases of seeking of injunctions against a 'willing licensee' the Commission "*can and will challenge this conduct as an unfair method of competition under Section 5 of the FTC Act*".[72]

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68 See Veto Letter of US Trade Representative Froman to Chairman Williamson of the ITC (3 August 2013). Available at https://ustr.gov/sites/default/files/08032013%20Letter_1.PDF..

69 Ibid, at 2.

70 Ibid, at 3.

71 See FTC Consent Order, *In the Matter of Robert Bosch GmbH* (23 April 2013), at 13-14, available at https://www.ftc.gov/sites/default/files/documents/cases/2013/04/130424robertboschdo.pdf..

72 See Statement of the FTC, *In the Matter of Robert Bosch GmbH*, at 2, 3, available at https://www.ftc.gov/sites/default/files/documents/cases/2013/04/121126-boschcommissionstatement.pdf..

Section 5 FTC Act allows the Commission to bring either stand-alone or combined with Sherman Act violations action against businesses which, through methods of unfair competition/unfair practices, harm consumers. The FTC indeed applied its declared approach in its investigation against Google/Motorola which resulted in a Consent Decree imposing restrictive terms to Google in its litigation of Motorola's SEPs portfolio.

In particular, the FTC argued that opportunistic behaviour by SEP-holders might harm competition in the market for standard implementing products, reduce incentives for production of such products and potentially exclude important consumer goods to the direct detriment of consumers.[73] The Consent Decree allowed Google to file for injunctions if the potential licensee: (i) is outside the jurisdiction of US courts, (ii) refuses, in writing or sworn testimony a licence on FRAND terms, (iii) refuses to enter a licence agreement in terms set by court or arbitration and (iv) fails to provide a written response to a FRAND offer within thirty days.[74]

The FTC Consent Decrees in *Bosch* and *Google/Motorola*, although binding *inter partes* and not forming formal precedent against other SEPs-holders, are a clear indication of what SEPs-owners should expect in case they pursue injunctions against willing licensees, in breach of their FRAND commitment. However, it was also made clear that standard implementers cannot benefit from FTC's enforcement activities unless they are truly willing to enter into a FRAND license agreement.[75] The FTC Consent Decrees provide some guidance in this respect, though the FTC has refrained from providing an overall analytical framework for determining under which conditions the potential licensee would be deemed as 'willing'.

The DOJ on its part, although it has not yet pursued any case of injunctions for SEPs under the Sherman Act, in its Joint Statement with the USPTO has emphasised the real risk of hold-up in cases of exclusion or-

73 See FTC *Letter to Commenters* (23 July 2013). Available at https://www.ftc.gov/sites/default/files/documents/cases/2013/07/130724googlemotorolaletter.pdf..

74 See FTC Consent Decree, *In the Matter of Motorola Mobility and Google* (23 July 2013), at 8. Available at https://www.ftc.gov/sites/default/files/documents/cases/2013/07/130724googlemotorolado.pdf..

75 See FTC *Letter to Commenters, supra* n. 73.

ders against 'willing licensees'.[76] The two agencies expressed the view that a FRAND commitment affects the appropriate remedies in case of SEP infringement and injunctions or exclusion orders in this context are "*inconsistent with the public interest"*.[77] In a position similar to the one expressed by the FTC in its *Google/Motorola* Consent Decree, the Joint Statement admits that injunctions and exclusion orders for FRAND-encumbered SEPs might be appropriate "*in some circumstances*", in general though the public interest is disserved in cases of injunctions against 'willing licensees'.[78]

Conclusively, the antitrust authorities in the US seem willing to step in whenever there is a real danger that a standard implementer has fallen victim of opportunistic behaviour that might result in hold-up. Both the FTC and the DOJ share the view that generally, injunctions against potential licensees, willing to enter into a FRAND licence agreement, are anticompetitive. Remarkably, none of the two agencies has so far provided an analysis of anticompetitive harm based on the Sherman Act. Instead, the FTC, which has for the most part been responsible for antitrust intervention on injunctions for SEPs, makes full use of the flexibility provided by Article 5 FTC Act in order to pursue cases of opportunistic behaviour from SEPs-holders.

76 The Joint Statement is mainly addressed at the US International Trade Commission in the context of section 337 of the 1930 Tariff Act; the two agencies nonetheless expressly stated that similar principles apply to the context of injunctions under the Patent Act. See USPTO-DOJ Joint Statement, *supra* n. 10, at 1.

77 Ibid, at 6.

78 Ibid, at 9.

Part IV. Standards-Setting and EU Competition Law

Compared to antitrust enforcement in the US, the European Commission faces an entirely different background in its application of Articles 101 and 102 TFEU on requests for injunctive relief for FRAND-encumbered SEPs. Although most European courts that have witnessed litigation on SEPs tend to be quite unwilling to grant injunctions, in Germany the application of the *Orange Book* standard by courts in the context of FRAND-committed SEPs has resulted in injunctions been granted in several occasions. As a result, apart from the typical hold-up problem discussed above, the Commission is also prompted to action to ensure a harmonised implementation of competition law throughout the EU.

A. Case-Law in Member States – The Orange Book Standard

Despite the harmonisation of substantive patent law by the European Patent Convention of which all EU Member States are contracting parties, and of remedies by the EU Enforcement Directive, patent law and its application in particular, largely remain a national matter. For that reason, litigation of SEPs has produced divergent outcomes throughout the EU. However, in most cases national courts, with the important exception of Germany, appear unwilling to automatically grant injunctions for SEPs.[79]

In the UK, as in the US, injunction is an equitable remedy at the discretion of the courts. In *IPCom V. Nokia* the Chancery Division of the High Court refused injunction to IPCom, a patent-assertion entity, for its 3G-related SEPs based on the fact that Nokia was willing to take a licence on FRAND terms and IPCom had failed to honour its FRAND commitment. Under these circumstances Roth J felt no obligation to grant injunction and IPCom was awarded damages as a sufficient compensation.[80]

In the Netherlands, in one of the two cases that formed the background to the Commission's proceedings against Samsung, the District Court of The Hague, in its *Samsung V. Apple* judgment, rejected Samsung's request

79 See Jones, *supra* n. 23, at 9 and 10.
80 *IPCom v Nokia* [2012] EWHC 1446 (Ch).

for preliminary injunction for some of its 3G SEPs.[81] The facts of this case are quite telling of the dangers of abuse of the standards-setting process. Samsung filed for an injunction against Apple's flagship products, namely the 4S iPhones and iPads. In its one and only proposal to Apple of a licence on a royalty rate of 2.4 percent of the final product price, Samsung saw a reasonable offer in compliance with its FRAND commitment. It is not surprising that the Dutch court failed to see the same. It dismissed Samsung request for preliminary injunction given that Samsung's offer was far from FRAND and Apple had acted as a willing licensee. [82] Samsung's requests for preliminary injunctions were rejected in France and Italy as well.

However, German courts have departed from the position of courts in other EU member states. Germany is the biggest market for mobile telecommunications devices in the EU and at the same time an especially attractive forum for patent owners in view of its strong pro-patentee legal tradition and its civil procedure for patent infringement cases.[83] In Germany patent infringement cases are adjudicated before specialist panels of Higher District Courts while, on the other hand, validity is litigated before the Federal Patent Court.[84] This leads to a significant time lag between decisions for infringement and validity, providing strong incentives for defendants to settle patent infringement disputes.

Moreover, German courts do not recognise the contractual nature of the FRAND commitment. In *IPCom V. Deutsche Telekom and Vodafone*, the District Court of Düsseldorf held that the FRAND commitment is no more than a declaration of an obligation to conclude a contract that already exists under German Competition Law.[85]

The defining feature of German case-law on FRAND-encumbered SEPs is its adherence to Bundesgerichtshof's *Orange Book Standard*.[86] In the *Orange Book Standard* case the Federal Court of Justice ruled that in SEPs infringement cases the defendant could escape injunction by means

81 DC Hague, Mar 14 2012.

82 See Florian Mueller, *Samsung loses Dutch case against Apple over 3G patents as court gives meaning to FRAND* (October 14, 2011). Available at http://www.foss-patents.com/2011/10/samsung-loses-dutch-case-against-apple.html..

83 See Jones, *supra* n. 23, at 10.

84 Ibid, at 11.

85 Landgericht Düsseldorf Apr. 24, 2012, *IPCom v. Deutsche Telekom & Vodafone*, Case Number 4b O 274/10. Available at http://openjur.de/u/454915.html..

86 BGH, 6 May 2009, KZR 39/06, GRUR 2009 694.

of the 'FRAND defence' under competition law. The *Orange Book* case concerned a *de facto* standard on DVDs. The standard was not developed through the familiar cooperative process under a SSO, *and the SEPs reading on the standard were not FRAND-committed*.

The requirements for a successful pleading of the 'FRAND defence' under *Orange Book* are so high that is no surprise that it is almost always rejected. The first condition is the defendant to make an *unconditional offer* to conclude a licence agreement that the patent owner cannot refuse without breaching competition law. What is essentially asked of the defendant is to renounce all his defences (non-infringement, non-essentiality, invalidity) and make a royalty payment offer marginally lower than the exploitative prices that would be a breach of competition law.[87] The second requirement is the defendant to have behaved as if a licensee, that is to pay a 'reasonable' licensee fee to the SEP-holder or otherwise put a sufficient amount in escrow.

Regardless of whether *Orange Book* is good case-law for *de facto* standards, it is remarkable how willingly the lower German courts extended its application to cases involving standards developed by means of industry coordination under SSOs to which the owners of SEPs provide FRAND commitments.

Though a more detailed analysis of German case-law is outside the scope of this paper, the *Motorola V. Apple* case before the District Court of Mannheim (confirmed by the Karlsruhe Higher Court) deserves notice. This is the second case that prompted the European Commission into action. The facts are identical with the Motorola v. Apple litigation in the US at the same time. However, the Mannheim court applying the *Orange Book* standard granted Motorola injunction for its SEPs on the ETSI 3G wireless standard. The court not only failed to take into account Motorola's exorbitant royalty offer but also Apple's conduct in the negotiations and its multiple licence offers. As a result, Motorola enforced its injunction, at least for some days, and Apple withdrew several of its products from its online store.[88] It is against this background that the Commission's enforcement activity should better be understood.

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87 See Jones, *supra* n. 23, at 11 and 12.

88 Florian Mueller, *Apple TEMPORARILY removed products from German online store due to Motorola injunction based on FRAND patent* (February 3, 2012). Available at http://www.fosspatents.com/2012/02/apple-removed-products-from-german.html..

B. Enforcement Action by the Commission

The Commission sent a first clear sign of its intention to intervene, in case of injunctions by SEPs-holders against 'willing licensees', in its *Google/Motorola* merger review decision.[89] It is no secret that Google's primary purpose for acquiring Motorola was to access the latter's very significant SEPs portfolio in mobile telecommunication standards. This was not left unnoticed by the Commission.

In its decision, clearing the merger, the Commission warned that under certain circumstances it would intervene against SEP-holders that would be tempted to breach their FRAND commitment and pursue injunctions against willing licensees. According to the Commission, the *threat, seeking and enforcement* of injunctions against a willing licensee may significantly impede competition, by imposing onerous licensing terms or even, if enforced, actual exclusion from the market to the detriment of consumers.

This clear warning was not taken into consideration by Samsung which aggressively pursued injunctions in major EU jurisdictions as discussed above. The Commission responded by initiating formal investigation against Samsung in February 2012. Although Samsung announced the withdrawal of all its requests for injunctions later this year, the Commission issued a Statement of Objections reaffirming its views that the mere seeking of injunctions against a willing licensee constitutes an abuse of dominance under Article 102. Finally, the Commission accepted Samsung's commitments to refrain from seeking injunctions for mobile SEPs for five years and it issued an Article 9 of the Regulation 1/2003 Settlement Decision.[90]

In *Samsung* the Commission restated that, although seeking an injunction is a legitimate remedy, it could be an abuse of dominance under Article 102 TFEU, where SEPs are concerned and the potential licensee is willing to take a licence on FRAND terms. However, the Commission refrained from further elaborating on what a 'willing licensee' might actually be.

The next major Commission enforcement action was initiated in April 2012 against Motorola. In the previous part the facts that urged Commis-

89 Commission Decision, *Google/Motorola Mobility* (Case COMP/M.6381)[2012].
90 Commission Decision, *Samsung* (Case Number AT.39939)[2014].

sion into action were discussed and in particular its enforcement of an injunction granted by the Mannheim District Court. In April 2014, the Commission finally issued its decision finding that Motorola had breached Article 102 TFEU by abusing its dominant position.[91]

In *Motorola* the Commission emphasised on Apple's conduct during the litigation before the German courts. According to the Commission, Apple's repeated offers to Motorola to enter into a licence on FRAND terms and on royalty rates set in the latter's discretion, subject to judicial review, were more than enough to establish that Apple was indeed a 'willing licensee'. The Commission further briefly identified the anticompetitive and exclusionary effects of Motorola's aggressive seeking and enforcement of injunctions. These included the temporary ban on Apple's online sales in Germany, the inclusion of disadvantageous licensing terms, and in particular the termination clause in case of validity challenge and the negative effects on the standard-setting process.

Of importance are the Commission's views on the anticompetitive effects of a non-challenge clause as well as on the applicability of *Orange Book* in cases involving FRAND-encumbered SEPs. In the view of the Commission "*it is in the public interest that potentially invalid patents can be challenged in court and that companies, and ultimately consumers, are not obliged to pay for patents that are not infringed*".[92] This is an implicit but clear rejection of the 'unconditional offer' requirement of the *Orange Book*, but the Commission went even further to expressly dismiss the application of the BGH's decision by lower German courts. According to the Commission, the "*German Federal Court of Justice's ruling did not specifically relate to SEPs and is therefore not directly applicable to the cases on which the Commission decided*", but even if deemed applicable the obligation not to challenge validity or infringement remains anticompetitive all the same.[93]

In its *Motorola* decision, the Commission provided some further hints on what businesses could do in order to be characterised as 'willing'. Although an evaluation of willingness should be assessed on a case-by-case

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91 Commission Decision, *Motorola* (Case Number AT.39985)[2014].

92 See EU Commission, *Antitrust decisions on standard essential patents (SEPs) – Motorola Mobility and Samsung Electronics – Frequently asked questions* (29 April 2014). Available at http://europa.eu/rapid/press-release_MEMO-14-322_en.htm..

93 Ibid.

basis, the Commission noticed that in most circumstances potential licensees that declare themselves bound by a court or arbitration determination of FRAND terms, should be considered willing and enjoy the protection of a 'safe harbour' against injunctions. The Commission refrained from further elaboration of the concept of 'willing licensee' most probably in view of the preliminary reference of the Düsseldorf District Court to the ECJ on the *Huawei V. ZTE* case.

C. Huawei V. ZTE

The recent landmark *Huawei V. ZTE* case was the first case in which the European Court of Justice (ECJ) adjudicated the issue of SEPs enforcement.[94] The case concerns an alleged infringement by ZTE's base stations of Huawei's LTE SEPs. Huawei brought an action for infringement and injunctive relief before the District Court of Düsseldorf (Landgericht Düsseldorf). In its request for preliminary reference the LG Düsseldorf essentially asked the ECJ which standard applies for finding a breach of Article 102 TFEU in cases of injunction for a FRAND-committed SEP: the one introduced by BGH in *Orange Book* or the one proposed by the Commission in its Statement of Objection to Samsung.[95]

Although the Court's ruling is remarkably brief, its practical implications cannot be overstated. In *Huawei,* the ECJ essentially set out a comprehensive set of rules regulating the overall negotiating behaviour that the parties to a dispute should follow in order to comply with competition rules, and in particular with Article 102 TFEU. The ECJ distinguished the

94 Case C170/13, *Huawei V. ZTE* [2015].

95 Of particular interest is the analysis of the Attorney General Wathelet in his Opinion in respect of the diverging legal standards by the Commission and the German courts. The AG identified the legal tests introduced by *Orange Book* and the Commission's Statement of Objections as 'two extremes', the former leading to over-protection and the latter to under-protection of SEPs-holders. According to the AG the Orange Book standard cannot be transposed to the facts of the present case. The significant factual differences between cooperative standards-setting and de facto standardisation argue against the application of the Orange Book. On the other, hand the AG expressed criticism at the Commission's vague and ill-defined concept of 'willing licensee'. See Case C170/13, *Huawei V. ZTE* [2014], Opinion of the AG Wathelet, para. 48, 50, 51, 83-86 and 88.

case from previous IP-related cases.[96] The Court stressed the market power conferred upon holders of SEPs, without licence of which implementation of standards is impossible.[97] Moreover, the ECJ identified the FRAND commitment by holders of SEPs as another exceptional circumstance that could limit the right to injunctive relief.[98]

In such circumstances, otherwise legitimate requests for injunctions could breach Article 102 TFEU, unless certain steps are followed by the parties to the dispute and in particular by owners of SEPs. According to the ECJ, the SEP-holder must, as a first step, notify in writing the implementer of his alleged infringement and must further identify the specific SEPs that have been infringed and the way they has been infringed.[99] As a second step, "*…it is for the proprietor of the SEP to present to that alleged infringer a specific, written offer for a licence on FRAND terms, in accordance with the undertaking given to the standardisation body, specifying, in particular, the amount of the royalty and the way in which that royalty is to be calculated*".[100]

By fulfilling the above preconditions the SEP-holder discharges his duties from his FRAND commitment and the burden shifts to the licensee. According to the ECJ, it is for the licensee "*diligently to respond to that offer, in accordance with recognised commercial practices in the field and in good faith, a point which must be established on the basis of objective factors and which implies, in particular, that there are no delaying tactics*"[101]. In the event that the licensee finds the terms proposed by the SEP owner as too onerous, he should submit a formal, written counter-offer on terms he views as FRAND.[102]

The *Huawei* ruling represents an unambiguous departure from the line of reasoning applied by national German courts following the *Orange Book*. Although the Court was careful not to openly criticise the application of the *Orange Book* by lower courts, it nonetheless clearly distinguished the case on the basis of the coordinated standards-setting context, and in particular on the FRAND commitment and the legitimate expecta-

96 *Supra* n. 95, *Huawei V. ZTE*, at para. 48.
97 Ibid, at para. 49.
98 Ibid, at para. 51-53.
99 Ibid, at para. 59-64.
100 Ibid, para. 63.
101 Ibid, para. 65.
102 Ibid, para. 66.

tions it creates to standard implementers that access to standard-contributed technologies would be on FRAND terms. The practical application of the negotiations framework envisaged in *Huawei* remains to be seen. However, the ECJ, in setting strict rules in the assertion of SEPs, raises the bar for granting injunctions against willing licensees and provides some valuable guidance to both SEP owners and to standard implementers in their licensing negotiations.

Part V. Patent Assertion Entities and Privateers: Moving Beyond the FRAND Commitment

As the analysis in the previous part has pointed out, the divergences notwithstanding, a consensus has emerged in the EU and the US, that injunctions against implementers willing to agree upon FRAND terms could, under certain circumstances, have significant anticompetitive effects. What is notable however is that in both the EU and the US, the analysis of cases involving anticompetitive requests for injunctions focuses more on the form of the behaviour of the SEP-owner and in particular on the voluntary FRAND commitment, than on the actual or potential effects of anticompetitive behaviour on the standards-setting process, the downstream markets for standard compliant products and, in the last analysis, to consumer welfare.

Yet over-reliance on the voluntary FRAND commitment might leave open a crucial loophole which Patent Assertion Entities (PAEs) and privateers are all too ready to take advantage of. Instead antirust analysis should view FRAND licensing terms as a necessary precondition for the competitive performance of the cooperative standard setting process and, as such, an obligation imposed on all stakeholders involved by Competition Law itself.

A. Patent Assertion Entities and Privateering: Costs and Efficiencies

i. The PAE and Privateer or Hybrid-PAE Business Model

PAEs could be defined as entities asserting patents against alleged infringers as a business model, i.e. mainly with a view to obtain licensing fees rather than to facilitate technology transfer and the recoupment of their own investments in research and development.[103] PAEs' assertion ac-

103 DOJ and FTC Workshop on PAE Activities (10 December 2012, transcript at 8). Available at https://www.ftc.gov/sites/default/files/documents/public_events/Patent%20Assertion%20Entity%20Activities%20Workshop%20/pae_transcript.pdf.

tivities, taking advantage of shortcomings of the patent system, such as doubtful patent quality and the uncertainties and costs of patent litigation, have increased exponentially in the last decade in all major jurisdictions.[104]

In the US for instance, PAE assertions accounted for 62% of filed patent lawsuits in 2012, a four-fold increase since 2005.[105] The ITC in particular, has proved a preferred forum for PAEs following *eBay*; in 2011, one-fourth of requests for exclusion orders based on s. 337 Tariffs Act were filed by PAEs.[106] Unsurprisingly, the costs for practicing entities (PEs) of such a dramatic rise in patent assertions might be heavy. Excluding costs such as diversion of resources from productive activities, delays in the marketing of new products and subsequent loss of market share, the US operating companies have suffered, in 2011 alone, direct costs of $29 billion from patent assertions by PAEs.[107]

In their effort to maximise licensing income PAEs employ a variety of business strategies against their targets. Some PAEs assemble vast patent portfolios, functioning as 'mass aggregators'; others file a small number of lawsuits against many targets, thus minimising litigation costs; many PAEs exploit low-quality patents in 'nuisance suits' aiming at a fast and rewarding settlement.[108] At the core of PAEs business model is the en-

104 Mintzer and Munck, *The Joint US Department of Justice and Federal Trade Commission Workshop on Patent Assertion Entities – "Follow the Money"*, Antitrust Law Journal 79(2) 424 (2014).

105 See *supra* n. 103, Comments of Google, BlackBerry, Earthlink and Redhat. Another study found that, in 2010, practicing entities in the US were sued by PAEs for patent infringement more than 2,600 times, over five times more often than in 2004; see Bessen, Meurer and Ford,*The Private and Social Costs of Patent Trolls* (Boston Univ. School of Law, Law and Economics Research Paper 11-45, 2011) at 1.

106 Chien and Lemley, *Patent Holdup, the ITC and the Public Interest*, Cornell Law Review 98(1) 18 (2012).

107 Washington Legal Foundation, *Trolling, Licensing & Litigating: A 21st Century Patent Paradigm?,* (Spring 2013, transcript at 4). Available at http://www.wlf.org/publishing/publication_detail.asp?id=2363..

108 Morton and Shapiro, *Strategic Patent Acquisitions*, Antitrust Law Journal 79(2) 470 (2014).

forcement of their patents in court by means of injunctions and awards of damages.[109]

Injunctive relief, in particular, is an invaluable legal weapon for PAEs, in that it increases PAEs' bargaining power *vis-à-vis* their targets to a significant extent.[110] Confronted with the threat of imminent exclusion from the market, risk-averse business executives might be willing to pay much higher royalties than they would otherwise, regardless of the merits of the individual case against them.[111] Timing is also vital. A PAE would typically wait until a target has completed its investment for the production of an allegedly infringing product, and then sue for infringement. In such a case the PAE can hope to a lucrative settlement capturing the hold-up value of its patent.[112]

Crucially, in their assertion efforts, PAEs face only a fraction, if any, of the market constraints faced by practicing entities. In particular, not producing anything themselves, PAEs are immune to the most powerful threat most PEs face when considering the enforcement of their rights against their rivals, namely that of a countersuit against their own products. Moreover, reputational concerns that might constrain the conduct of many PEs are less relevant for PAEs.[113]

Litigation costs are also highly asymmetrical as far as PAEs are concerned;[114] while for PEs litigation represents a significant and costly diversion from their normal operations, for PAEs, in contrast, litigation costs are nothing more than a normal investment within the contours of their everyday activities. This lack of effective constraints to PAE behaviour has profound implications for innovation industries in general, but, it will be argued bellow, even more so for the performance of cooperative standardisation.

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109 Ewing, *Indirect Exploitation of Intellectual Property Rights by Corporations and Investors: IP Privateering and Modern Letters of Marque and Reprisal*, Hastings Science and Technology Law Journal 4(1) 32 (2012).

110 Taylor, *Legislative Responses to Patent Assertion Entities,* Texas Intellectual Property Law Journal 23 314 (2015).

111 Mintzer and Munck, *supra* n. 104, at 427; See also Morton and Shapiro, *supra* n. 108, at 473.

112 Mintzer and Munck, *supra* n. 104, at 431.

113 Taylor, *supra* n. 110, at 321; Mintzer and Munck, *supra* n. 104, at 426.

114 Taylor, *supra* n. 110, at 321.

A particularly problematic, from an antitrust perspective, form of PAE activity is privateering.[115] Privateering is a form of cooperation between a practicing entity with a PAE, involving transfer and assertion of the former's patents by the latter; in such an instance the PAE engaged in privateering aims at the direct benefits of patent assertion in the form of licensing revenues and awards for damages, while the sponsor's motives are the more strategic and consequential benefits of patent assertion against rivals without fear of retaliation or reputational damage.[116] Although hard to detect for reasons discussed below, privateering is considered a rapidly growing phenomenon.[117]

Privateers essentially function as agents of practicing entities aiming to achieve their corporate goals; the sponsor sets the objectives of the operation, assembles the necessary resources, might even supply a list of targets and leaves the rest to the privateer.[118] Sponsors' goals range from the most obvious of raising the costs of rivals, to more subtle strategic objectives, such as change in the rate of technology adoption by the industry, a change of business relationships as a driver for larger licensing arrangements or even a wider institutional change in the patent system through case law.[119]

For the sponsor to achieve its strategic objectives, privateering arrangements must remain well camouflaged.[120] Otherwise the PE would be subject to the same constraints that precluded the enforcement of its rights in the first place, such as countersuits by rivals, reputational costs, and antitrust scrutiny. The degree of secrecy of a privateering arrangement ranges from extremely high to moderately low; in some occasions the

115 Privateers are also referred to as 'hybrid PAEs'; see Morton and Shapiro, *supra* n. 108, at 464.

116 Ewing, *supra* n. 109, at 5.

117 Popofsky and Laufert, *Antitrust Attacks on Patent Assertion Entities*, Antitrust Law Journal 79(2) 455 and accompanying note 48 (2014); For a comprehensive list of recent patent assignments deemed to involve privateering arrangements, see Florian Mueller, *Privateering: let's name and shame companies that feed patent trolls* (May 12, 2015). Available at http://www.fosspatents.com/2015/05/privateering-lets-name-and-shame.html..

118 Ewing, *supra* n. 109, at 24.

119 Ibid, at 103.

120 Ibid, at 29.

sponsor might even hint at its involvement in privateering as a signal for changing the behaviour of competitors.[121]

The need for secrecy determines the contractual terms of the assignment of patents. In most cases the targets would not be explicitly mentioned; rather the terms of the contract would create the pertinent incentives to induce the PAE to attack rivals, such as the PE retaining the right to direct the transfer elsewhere unless particular milestones are met.[122] The transfer of around 2,000 patents from Nokia and Microsoft to MOSAID provides a good illustration of the kind of contractual terms included in a privateering arrangement. MOSAID, a PAE, would assert and if necessary litigate the patents transferred by Nokia and Microsoft; the sponsors though would receive back two-thirds of the collected royalties and damages awards.[123] Crucially, if MOSAID failed to reach certain revenue milestones it would lose the right to further transfer the patents or even cede ownership altogether.[124] Such terms provide strong incentives for aggressive assertion and litigation.

ii. Implications of PAE Activities for Social Welfare and Efficiency

Downstream PEs might suffer important costs in face of PAEs' and privateers' assertion activities; but, one might argue, these costs are not necessarily a waste from a social welfare perspective. Downstream producers pay more, but if these costs are translated to income for innovators, incentives to innovate would be enhanced and the net balance between social losses and benefits would be neutral, if not positive due to innovation spill-overs.

Indeed many view PAEs as efficient 'machines' of patent licensing and litigation that could provide individual inventors with a valuable option for exploitation of their rights which would otherwise be misappropriated by large firms with impunity.[125] Moreover by assembling bundles of com-

121 Ibid, at 50.
122 Popofsky and Laufert, *supra* n. 117, at 455.
123 Harris*, Patent Assertion Entities & Privateers: Economic Harms to Innovation & Competition,* Antitrust Bulletin 59(2) 319 (2014).
124 Carrier, *Patent Assertion Entities: Six Actions the Antitrust Agencies Can Take*, CPI Antitrust Chronicle 1(2) 8 (2013).
125 See Workshop on PAEs, *supra* n. 103, at 1 and 3; see alsoTaylor, *supra* n. 110, at 315.

plementary patents, PAEs reduce transaction costs; costs of technology transfer, such as search, negotiation and licensing costs could be reduced by the efficient management of patents by PAEs.[126] Thus, PAEs could, the argument goes, facilitate the development of a vibrant market for technology, allowing companies to monetise patents that are not essential to their operation and buy or license in technology they need more.[127]

However such benefits are uncertain. To begin with, the argument that PAEs reward individual inventors, thus enhancing incentives to innovate, seems weak in view of empirical evidence. According to a recent study, a meagre 2% of the losses imposed on practicing entities by PAE litigation efforts flows back to 'outside' innovators.[128] Although one might argue that, at first sight, PAEs merely redistribute rents along the production chain,[129] it is also true that these rents are transferred from companies that produce innovative products to those that do not innovate or produce anything themselves.[130] Thus, valuable resources are diverted away from research and production towards rent-seeking activities.[131]

Moreover, PAEs, facing relatively few constraints in their aggressive patent assertions, transform patent litigation by reducing its direct and indirect costs.[132] There is a particular concern with the settlement of disputes and the rewards that confer to PAEs which, under the threat of injunction, might be in excess of a patent's real value and contribution.[133] Such excessive costs could be viewed as a tax on innovating businesses and consumers.[134] In view of the above considerations, the conclusion that PAEs represent 'a negative trend in patent law' seems not unjustified.[135]

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126 Mintzer and Munck, *supra* n. 104, at 429.

127 See Workshop on PAEs, *supra* n. 103, Comment of Jason Albert, Assistant General Counsel of IP Policy and Strategy of Microsoft (Microsoft Comments), at 5; see also Bessen, Meurer and Ford, *supra* n. 105 at 3.

128 Bessen, Meurer and Ford, *supra* n. 105, at 20.

129 Wright and Ginsburg, *Patent Assertion Entities and Antitrust: A Competition Cure for a Litigation Disease?*, Antitrust Law Journal 7(2) 516 (2015).

130 See Washington Legal Foundation, *supra* n. 107, at 4.

131 Ibid.

132 Colleen Chien, *Turn The Tables On Patent Trolls,* Forbes (August 9, 2011). Available at http://www.forbes.com/sites/ciocentral/2011/08/09/turn-the-tables-on-patent-trolls/..

133 Harris, *supra* n. 123, at 310.

134 Mintzer and Munck, *supra* n. 104, at 430.

135 Merges, *The Trouble with Trolls: Innovation, Rent-Seeking, and Patent Law Reform*, Berkeley Technology Law Journal 24 1587 (2010).

B. PAEs and Privateers in the Context of Cooperative Standards-Setting

PAEs and their activities present significant challenges for innovation and the function of the patent system in general, however in the more particular context of cooperative standards-setting such problems might be even more pronounced. It has already been discussed above in part II that the formal cooperative standardisation largely depends on the predictability of the structure of returns and the reliability of the process as a whole; absent a rewarding and predictable structure of returns the delicate balancing of interests and incentives achieved in formal standardisation could break down.[136] It was also pointed out that specific market constraints, such as fear of retaliation and reputational harm, are an important safeguard against post-adoption opportunism.

PAEs fit problematically in this context. Forces that traditionally constrained the behaviour of all stakeholders to the standard setting process exert little, if any, influence on the behaviour of PAEs. Risk and cost asymmetries in patent litigation, for instance, run in favour of PAEs and privateers.[137]

Ownership of SEPs has traditionally been seen as the best safeguard for many standard implementers against infringement suits; following the 'mutual destruction' paradigm,[138] opportunistic SEP-holders that implement the standards themselves would think twice before attacking a competitor for fear of retaliation. However, PAEs do not produce standard-compliant products and are thus immune to countersuits. This PAE immunity to retaliatory countersuits is in practice a primary motivation for privateering arrangements as already discussed above.

Similarly, asymmetric litigation costs provide a further incentive for aggressive assertion of SEPs. Practicing companies devote significant resources to develop and produce innovative products; litigation with all its uncertainty puts their investment at risk.[139] PAEs on the other hand are much more efficient users of legal procedures.[140]

Fear of reputational damage has also exerted significant pressures to SEP-holders and the aggressive enforcement of their rights. The standardi-

136 Supra p. 6-9.
137 Harris, *supra* n. 123, at 299.
138 Ewing, *supra* n. 109, at 6.
139 Harris, *supra* n. 123, at 299.
140 Ibid.

sation process is a repeat game; participants that assert their patents aggressively, demanding unreasonable royalty rates, might find it more difficult to have their future technology contributions included in standards.[141] PAEs in contrast do not conduct R&D themselves, nor are they members to SSOs, and thus do not contribute anything to the standards-setting process; fear of failing to achieve inclusion of their technologies in future standards is irrelevant to PAEs.[142]

On the contrary, it can be argued that reputation plays quite differently when it comes to PAEs. PAEs' revenue depends on the willingness of businesses they identify as targets for patent assertion to come to terms with their demands for royalties and damages. The would-be licensee would not succumb to a PAE's demands if the threat of litigation and injunction could not be viewed as credible enough; threatened by a PAE that has a reputation for aggressively seeking high royalties or obtaining injunctive relief, a practicing entity will take such threats much more seriously.[143]

A reputation for toughness could not only mean more rewarding settlement agreements, but also that these settlements will be struck earlier, at a lower cost for the PAE and with little fear of invalidation in infringement litigation.[144]For these reasons, a PAE might even prefer in the long run to spend money in litigation in order to establish a reputation for following through its threats.[145]

PAEs can influence the standards-setting process in another critical respect; by reducing the transparency of ownership of SEPs. It is common practice for many PAEs to create 'shell companies' to hold and assert parts of their patent portfolios, thus making it increasingly difficult to determine the actual ownership of a patent.[146] For instance, Acacia's subsidiaries control over 250 patent portfolios[147] and Intellectual Ventures has formed

141 *Supra* p. 18.
142 Gotts and Sher, *Particular Antitrust Concerns with Patent Acquisitions*, Competition Law International 8 25 (2012).
143 Morton and Shapiro, *supra* n. 108, at 478.
144 Harris, *supra* n. 123, at 299-300.
145 See among others, Milgrom and Roberts, *Predation, Reputation and Entry Deterrence*, Journal of Economic Theory 27 280 (1982).
146 Morton and Shapiro, *supra* n. 108, at 476.
147 Acacia Research Group LLC, *Patent Portfolios*. Available at http://acaciatechnologies.com/patentportfolio.htm..

at least 1,276 shell companies.[148] Empirical evidence suggests that in one-third of cases brought by PAEs in the U.S., the plaintiff was different from the owner of record as of the day the litigation was initiated.[149] Opaque ownership of SEPs could not only raise transaction costs for SEPs licensing, but it could also make it for licensees and antitrust authorities much more costly to monitor the licensor's compliance with FRAND obligations.[150]

The most important issue with PAE ownership of SEPs is the fate of the FRAND commitment made by the original patentee and the licensing obligations of the subsequent holder. In the case of a transfer of a FRAND committed SEP, the commitment itself does not 'travel' with the patent, i.e. the new owner, if not bound by the assignment contract, has no obligation under patent law or contract law to abide to such a commitment made by the previous owner.[151] Although obliging technology contributors to impose FRAND commitments to subsequent owners in case of transfer of their SEPs has been discussed within SSOs, so far most SSOs, with the notable exception of ETSI, have failed to include such a provision in their bylaws.[152]

It has been accurately pointed out that the uncertainty and lack of clarity in respect of the licensing obligations of SEPs holders that are not bound by a FRAND commitment, opens a 'potentially fatal loophole'.[153] Although the exact impact of uncertainty with regard to FRAND commitments will be discussed in detail below, it should be mentioned at this

148 Ewing and Feldman, *The Giants Among Us*, Stanford Technology Law Review 1 (2012).

149 Colleen Chien, *Eliciting More Complete Patent Assignment Information* Comment (USPTO Docket No. PTOP-2011-0077, Jan. 23, 2012, at 3). Available at http://www.uspto.gov/patents/law/comments/f_chien_120123.pdf..

150 See Microsoft Comments, *supra* n. 127, at 3.

151 Morton and Shapiro, s*upra* n. 108, at 475; Harris, *supra* n. 123, at 321; The CEO of Rockstar, a PAE consortium, made some interest remarks in one of his interviews regarding the FRAND commitments of the previous owners of the SEPs that the consortium had recently bought: *'... We are separate... these promises do not apply to us..'* see Robert McMillan, *How Apple and Microsoft Armed 4,000 Patent Warheads*, Wired Magazine (May 21, 2012). Available at http://www.wired.com/2012/05/rockstar/..

152 Morton and Shapiro, *supra* n. 108, at 475.

153 Carrier, *supra* n. 124, at 5.

point that evading FRAND obligations represents an excellent opportunity for profitable rent seeking by PAEs, privateers and their sponsors.[154]

The lack of sufficient market restraints, as well as the insufficient SSOs regulatory framework in respect of FRAND obligations, implies that PAEs have ample ground for profiteering at the expense of genuine innovators and contributors, standard implementers and the standardisation process itself. Adding to that, PAEs have the monetary and reputational incentives to aggressively assert and litigate SEPs.

Although injunctive relief against willing licensees has become increasingly difficult in many jurisdictions as the analysis in the previous part has tried to establish, this threat to competition and innovation is still present; the ITC in the US and German patent infringement courts in Europe are venues of patent litigation which PAEs justifiably view as more friendly. The uncertainty and costs inherent in litigation are as relevant as always. PAE exploitation of SEPs could be, at least, problematic. The issue is whether PAE activity in the standards-setting context is primarily a competition law problem or whether other legal frameworks could provide more suitable institutional alternatives.

C. PAEs and Opportunistic Assertion of SEPs: A Competition Law Problem?

In part II, the cooperative standards-setting process is analysed as an efficient and inclusive form of self-regulated industry coordination.[155] At the core of coordinated standardisation is a predictable and rewarding structure of returns to investment in R&D and in manufacturing of standard-compliant products. FRAND licensing terms are the contractual meeting point of the diverging interests of technology contributors and standard implementers which allows for sufficient reward of innovating endeavours and at the same time the profitable implementation of standards by downstream manufacturers.

Moreover, FRAND licensing terms are discussed as a necessary condition for the competitive performance of both upstream and downstream markets for standard-contributing technologies and standard-compliant

154 Morton and Shapiro, *supra* n. 108, at 475; Harris, *supra* n. 123, at 308.
155 Supra, p. 6-7.

products.[156] Terms below the FRAND range would under-compensate contributors, thus reducing their incentives to invest in R&D and contribute to the standard setting process their best technologies; a further risk would be firms to divert resources away from cooperative standardisation towards inefficient *de facto* standardisation races. Terms above the FRAND range would reduce incentives to invest in implementation of standards, thus leading to lower output and choice for consumers.

PAEs have the incentives to destabilise this balance of incentives and returns. Market forces that restrain genuine innovators and contributors in the assertion of their rights exert little influence on PAEs. Moreover, in most cases, the transfer of SEPs to PAEs does not necessarily transfer the FRAND commitment of the transferor. Many SSOs have proved so far hesitant to impose such an obligation in their bylaws. If opportunistic PAE activity is left unchecked it has the potential to produce concrete and identifiable *anticompetitive effects* in both the upstream and the downstream markets.

To begin with, above-FRAND terms imposed by PAEs could be expected to lead to royalty stacking and thus to higher prices and reduced incentives to innovate.[157] Demands for higher-than-FRAND royalties might reduce incentives to invest in the production of standard compliant products in two ways: first, in case downstream firms pass on the higher royalty rate to consumers, market demand for standard compliant products should be expected to fall, leading to lower profits and less investment in implementation of standards;[158] second, in case downstream firms internalise the higher royalty rate, their own margin of profit would be suppressed resulting again in reduced incentives to invest in standard compliant products.

In both scenarios, supra-FRAND royalties would lead to reduced competition in the downstream market. Higher licensing costs might force efficient downstream firms to exit the market and, adding to that, such costs might also deter future entry; firms thinking of entering the downstream market would think twice when faced not only with the possibility of higher input costs and lower profits, but also with the uncertainties and costs of opportunistic PAE litigation. In the end, due to restricted actual and potential competition in the downstream market, consumers will have

156 Supra, p. 8.
157 Popofsky and Laufert, *supra* n. 117, at 456-457.
158 Harris, *supra* n. 123, at 289.

to pay higher prices for standard-compliant products; they will have less choice and less innovation.

Negative impact on the upstream market for standard-contributed technologies should be expected as well. Unreasonable and excessive royalty demands by a specific class of SEPs-holders, such as PAEs, would produce a negative externality for other contributors to the standards-setting process;[159] standard-implementers faced with excessive royalty demands from opportunistic SEPs-holders might attempt to keep the aggregate royalty costs low by suppressing the royalty rates of other contributors to the process.

Thus, the current structure of returns to R&D, which provides for predictable and sufficient rewards to investment in innovation, would be disrupted, resulting in fewer incentives to invest and contribute to the standards-setting process. Innovating firms might reduce investment in R&D or might divert their resources to independent development of *de facto* standards with all its inefficiencies identified in Part II of the present thesis.

Privateering arrangements could disrupt the standard setting process even more. Apart from the anticompetitive effects associated with PAEs' activities proper, hybrid-PAE activity would allow practicing entities to evade their FRAND commitments, to raise their rivals' costs and force them to exit the market.[160] The possibility for SEPs holders to abrogate their FRAND obligations with impunity, through transfer of their rights to privateers, would seriously impair the predictability of the structure of returns and the reliability of the formal standards-setting process. It would increase uncertainty for all the firms involved in coordinated standardisation.

However, the fact that PAEs and privateers could produce anticompetitive effects by speculating on the standards-setting process does not necessarily imply that antitrust enforcement is the most effective solution to opportunistic behaviour. Indeed many scholars have attributed inefficiencies resulting from PAE activity to the patent system,[161] or to civil procedure

159 Harris, *supra* n. 123,at 291.

160 Popofsky and Laufert, *supra* n. 117, at 457.

161 Low patent quality, costs of patent litigation and asymmetries in the patent system are indeed problems of the patent system which PAEs are more than ready to exploit. See Taylor, *supra* n. 110, at 317.

and litigation;[162] others have proposed remedies based on contract law or on theories of promissory estoppel; increased transparency of ownership and encumbrances on patents might also mitigate problems of evasion of FRAND commitments.[163] SSOs could also play an important role in regulating SEPs transfers and the effect of FRAND commitments on subsequent owners.[164]

A more thorough review of the above mentioned proposals is outside the scope of this thesis. Undoubtedly, valuable insights could be drawn from such contributions with regard to the exact nature of PAE activity and its sources. Indeed many of such proposals, if put into practice, would alleviate problems stemming from PAE activities and opportunism with SEPs in general. However, that should not lead to the conclusion that antitrust enforcement is less relevant.

Antitrust could play a meaningful role.[165] The most important contribution of antitrust enforcement against abuses of SEPs is its *deterrent effect*.[166] Although patent law reforms or contractual binding of subsequent SEPs-holders to FRAND licensing would provide to victims of hold-up useful defences in court, they do not sufficiently deter abusive assertion of SEPs in the first place. For instance, the contractual binding to FRAND could raise counterclaims of breach of contract or/and contractual performance; however, the opportunistic SEP-holder will, in case it loses on such grounds, be left no worse than with a licence on FRAND terms. In the end, a patent hold-up is indeed precluded, but contractual constraints can do little to *prevent* opportunistic assertion of SEPs in the first place. The victims still suffer the costs of uncertain and resource-draining litigation; most importantly, the reliability of the standards-setting process might still be at risk.

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162 Wright and Ginsburg, for instance attribute PAE-related problems first and foremost to the US litigation system ('*all commentators agree that something is seriously amiss with our system of litigation*'). However, they also contend that particular PAE conduct should be subjected to antitrust scrutiny and intervention. See Wright and Gingsburg, *supra* n. 129, at 505 and 510.

163 Contreras, *Patent Pledges*, Arizona State Law Journal (Forthcoming 2015).

164 The European Commission in its Horizontal Guidelines strongly encourages SSOs to bind their members in respect of future SEPs transfers. See Horizontal Guidelines, *supra* n. 7, para. 285.

165 Popofsky and Laufert, *supra* n.117, at 446.

166 Ewing, *supra* n. 109, at 81 ('*the in terrorem effect of a DOJ investigation may provide sufficient deterrence to privateering*').

Antitrust enforcement on the other hand, in imposing tortfeasors positive monetary losses in the form of fines, alters the profit-cost calculus of opportunistic behaviour in the first place; opportunistic assertion of SEPs will come at a cost. Of course, a too-heavy-handed approach could have a chilling effect on legitimate patent assertions against implementers that are reluctant to pay FRAND royalties, thus leading to false positives. Antitrust enforcement should carefully examine the specificities of each case, such as the particular PAE conduct, the relationship between PAEs and practicing entities, the structure of downstream markets.[167] More importantly, an economically informed antitrust analysis focusing on the actual and potential anticompetitive effects of opportunistic SEPs assertion should prohibit behaviour that is truly harmful to consumers. Safeguarding the inclusive and efficient character of the standards-setting process *is* a competition law problem. Informed antitrust analysis could provide adequate responses to opportunistic PAE behaviour and privateering.

D. Enforcing EU Competition Law against PAEs and Privateers: Moving Beyond the FRAND Commitment

i. Legal Formalism in the Enforcement of EU Competition Law in the Context of Coordinated Standards-Setting

In both the US and the EU, antitrust enforcement against opportunistic assertion and litigation of SEPs against 'willing licensees' so far relied heavily on the voluntary nature of the FRAND commitment; anticompetitive harm is mainly understood as stemming from the evasion of FRAND commitments on which SSOs and standard implementers came to rely in the process of formal standards-setting and the ensuing SEP-holdup. It could be argued that this focus on the voluntary FRAND commitment is too narrow and formalistic; that it fails to articulate a convincing theory of anticompetitive harm resulting from opportunistic behaviour by SEP-holders.

As a result, a loophole has emerged in antitrust enforcement in the context of coordinated standardisation. The significant increase of transfers of SEPs to PAEs and privateers illustrated in the previous part is not an acci-

167 Mintzer and Munck, *supra* n. 104, at 437.

dent; antitrust analysis that has been centred on whether SEPs-holders live up to their FRAND promises, might have created the wrong impression to some stakeholders that transfers and opportunistic assertion of SEPs by entities that have not made such commitments themselves could well be permissible.

This loophole is even more important in the EU; alternative legal frameworks in major national jurisdictions in the EU provide far less safeguards against opportunistic assertion of SEPs than in the US, where the FRAND commitment is enforced by courts as a contractual obligation and injunctive relief in patent infringement cases is available only in cases the restrictive *eBay* requirements are met. For that reason, the analysis in this part will be focused on the application of EU competition rules; however, antitrust analysis of this issue in US literature is highly relevant and the proposed framework could be applied, with some moderate adaptation to account for institutional divergences, to US antitrust rules as well.

A characteristic example of enforcement which focuses almost entirely on the FRAND commitment as basis for finding breach of competition rules would be the Commission's decision in *Motorola*, already discussed in part IV.[168] It is settled case-law of EU courts, that the exercise of intellectual property rights *per se,* and in particular a refusal to license, could constitute a breach of EU competition law only in 'exceptional circumstances'.[169] The Commission in its analysis identified two exceptional circumstances: the standards-setting context and the FRAND commitment.[170] The weight attributed to these two factors is however unequal; not only the analysis of the standards-setting context is far shorter, but it

168 Supra p. 32.

169 In a line of cases the ECJ identified these exceptional circumstances that would qualify for antitrust intervention in a three-factor test of abuse of dominance under Art. 102 TFEU. In particular, the holder of IPR must, by refusing to license, preclude the supply of new products for which there is potential consumer demand; his refusal is not justified by objective considerations; and the refusal is liable to eliminate all competition in the downstream market. See Cases C-241-242/91 P, *RTE and ITP V. Commission* [1995] ECR I-743; Case C-7/97, Oscar Bronner GmbH & Co KG V. Mediaprint [1998] ECR I-7791; Case C-418/01, *IMS Health GmbH & Co OHG V. NDC Health GmbH & Co KG* [2004] ECR I-5039.

170 See *Mototrola, supra* n. 91, para. 281-300.

too is essentially based on the FRAND commitment, on 'the agreement of patent holders' to offer FRAND terms.[171]

In general, it could be argued that the thrust of the decision is that Motorola abused its dominant position by failing to keep its FRAND commitment; the decision focuses much less on the exclusionary effects of opportunistic SEPs assertion, liable to result in supra-FRAND rates; and when such effects are identified these again seem to flow from Motorola's 'voluntary commitment' and the subsequent 'legitimate expectations' of standard implementers and not from a competition law obligation not to anticompetitively foreclose markets by abusing a dominant position.[172]

It will be argued below, that competition law enforcement should be based on anticompetitive effects such as higher prices, lower output, reduced innovation and higher barriers to entry, all resulting from disrupting the structure of returns implied by the efficient operation of the standard setting process. The breach of a voluntary commitment should be taken into account as an element of anticompetitive *intent*, which helpful as it might be for proving abuse of dominance, should not be a necessary condition for such a finding.

The over-reliance to the voluntary nature of the FRAND commitment resonates in the recent ECJ ruling in *Huawei* as well.[173] The Court based its finding of abuse of dominance first and foremost on failure on the part of the SEP-holder to keep its FRAND commitment.[174] Although the exclusionary power of SEPs-holders is mentioned in the judgment, the Court refrained from providing a more detailed and elaborate analysis of the im-

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171 Ibid, para 289 ('*Once GPRS, based on the agreement of patent holders to grant access to their SEPs on FRAND terms and conditions*, *was widely implemented and the industry became locked in, a SEP holder may be able to behave in anticompetitive ways, for example by "holding-up" implementers of the standard after its adoption*').

172 Ibid, para 417 ('*In view of the standardisation process that led to the adoption of the GPRS standard and Motorola's voluntary commitment to license the Cudak SEP on FRAND terms and conditions, implementers of the GPRS standard have a legitimate expectation that Motorola will grant them a licence over that SEP*').

173 See *Huawei V. ZTE, supra* n. 95.

174 Ibid, para 53 ('*In those circumstances, and having regard to the fact that an undertaking to grant licences on FRAND terms creates legitimate expectations on the part of third parties that the proprietor of the SEP will in fact grant licences on such terms, a refusal by the proprietor of the SEP to grant a licence on those terms may, in principle, constitute an abuse within the meaning of Article 102 TFEU*').

pact of opportunistic assertion of SEPs and supra-FRAND licensing on the standards-setting process; finding of anticompetitive harm was not based firmly on an effects-based analysis of the likely effects of such conduct on the competitive conditions of the relevant upstream and downstream markets, and in particular on prices, output and innovation.[175]

ii. An Effects-Based Approach to Opportunism with SEPs: Anticompetitive Foreclosure and Article 102 TFEU

This formalistic and narrow approach is understandable. The context of coordinated standardisation is patently different from the factual context of all previous IP-related refusal-to-license cases. Yet exceptional circumstances should still be convincingly established, sanctioning the Commission and EU Courts not only to interfere with the SEPs-holders' patent rights, but also to depart from the over-restrictive requirements set out in *Magill, Bronner* and *IMS*. Evasion of FRAND commitment provided a strong indication that the conduct of the dominant undertaking could not be qualified as competition 'on the merits', but also a basis for establishing exceptional circumstances that are at the same time different from those in previous refusal to license cases.

However, a different approach to abuse of dominance in the context of coordinated standards-setting might be necessary. An effects-based approach would better clarify what benefits for consumers competition law protects in the standards-setting process; innovative interoperable products at competitive prices as a result of the operation of open, innovative and competitive markets in both the upstream level for standard-contributed technologies and the downstream level for standard-compliant products. Such markets should only be expected to perform to their full pro-competitive potential only insofar as the coordinated standards-setting process remains inclusive and efficient, that is only if a predictable, balanced and rewarding structure of returns to the investment of all participants is guaranteed.

Such structure of returns is, in turn, impossible to maintain, unless all stakeholders agree to license their proprietary technology on terms that allow sufficient compensation of contributors and at the same time sufficient

175 Ibid, para 52.

margin of profit for implementers; this balance of interests is crystallised in the range of contractual terms known as FRAND terms.

Licensing terms outside this range, imposed under threat of injunctions, can predictably in themselves produce exclusionary effects on both the upstream and the downstream markets, regardless of previous commitments on the part of the SEP-holder.[176] The FRAND commitment enhances the predictability and reliability of the standards-setting process; but it should not be the sole basis for finding of anticompetitive harm and abuse of dominant position. Identifiable and predictable exclusionary effects resulting in higher prices, lower output and choice, reduced incentives to innovate, should form the basis of theories of anticompetitive harm in the context of standard setting.

This move of focus of the application of Article 102 TFEU away from the FRAND commitment towards a more effects-based approach would be a sound choice from both a public policy and a doctrinal perspective. To begin with, viewing FRAND licensing terms as an obligation stemming directly from competition law, regardless of a SEP-holder's previous contractual or other commitments, would infuse the standards-setting process with enhanced predictability by deterring opportunistic assertion and litigation of SEPs. Such an approach could tackle more effectively brinksmanship with transfers of SEPs, privateering arrangements and whatever other form of opportunism might emerge in the future.

An effects-based approach would further result in more accurate antitrust enforcement against conduct that could truly harm competition and consumers, avoiding false positives and false negatives. Such approach would also maintain strong incentives to innovate by guaranteeing sufficient compensation of R&D on the basis of FRAND licensing terms. It would reduce negative externalities to genuine and responsible contributors arising from excessive royalty demands by opportunistic SEPs-holders.

Moreover, an effects-based approach would be consistent with Commission's post-modernisation approach on the application of Article 102 TFEU.[177] In its Guidelines on the application of Article 102, the Commis-

176 Supra, p. 48-49.

177 European Commission, *Guidance Paper on the Commission's enforcement priorities in applying Article 102 of the EC Treaty to abusive exclusionary conduct by dominant undertakings* [2009] OJ C45/2.

sion introduced the concept of 'anticompetitive foreclosure' as a benchmark for assessing behaviour that could constitute abuse of dominance.[178]

Anticompetitive foreclosure comprises two elements: foreclosure of competitors and harm to consumer welfare.[179] Licensing terms outside the FRAND range could produce both exclusion and harm to consumer welfare, as the analysis above suggests;[180] anticompetitive foreclosure results not from the evasion of FRAND commitments itself, but from imposing, through aggressive SEPs assertion, licensing terms that would make implementation of the standard unprofitable even for efficient downstream firms. Harm to consumer welfare would take the form of higher prices, less choice and less innovation in standard compliant products.

Additionally, antitrust enforcement that moves beyond the FRAND commitment would fit well with ECJ long-standing case law on exclusionary abuses in general, and in particular on interference with patent holders' rights only in 'exceptional circumstances'. Since *Hoffmann-La Roche*, the ECJ has repeatedly defined exclusionary abuse of dominant position as an 'objective concept';[181] anticompetitive intent or object of the conduct in question need not be proved in the course of finding an abuse of dominance under Article 102 TFEU.[182] Evasion of a FRAND commitment would indeed imply anticompetitive intent; however it should not be a necessary condition for finding an abuse of dominance.

Evasion of FRAND commitments should also not be a condition for finding 'exceptional circumstances' that qualify for antitrust interference with patent rights; the context of coordinated standardisation *is* an exceptional circumstance. It is not common for competitors to discuss at arm's

178 Ibid, para 19 ('*The aim of the Commission's enforcement activity in relation to exclusionary conduct is to ensure that dominant undertakings do not impair effective competition by foreclosing their competitors in an anti-competitive way, thus having an adverse impact on consumer welfare, whether in the form of higher price levels than would have otherwise prevailed or in some other form such as limiting quality or reducing consumer choice*').

179 Ibid.

180 Supra, p. 47-49.

181 See Case C-85-76, *Hoffmann-La Roche & Co AG V. Commission* [1979] ECR 461; Case C-322/81, *Nederlandsche Banden Industrie Michelin V. Commission* (Michelin I) [1983] ECR 3461; and Case C549/10 P, *Tomra Systems V. Commission* (Tomra) [2012].

182 Jones and Sufrin, *EU competition law: text, cases, and materials,* 368 (Oxford University Press, 2014).

length and decide the technical specifications of their products; nor is it common for patents to be effectively insulated from competition from substitute technologies, which is true for patents that read on standards' specifications. These instances would also be sufficient to distinguish SEPs cases from the *IMS* line of case law.

Finally and perhaps even more crucially, a FRAND obligation based on competition law would also imply that the *Huawei* framework for injunctive relief should reach SEP-holders, such as PAEs, that have not made FRAND commitments themselves. This would be a welcome development; a level-playing field for all SEPs holders would increase legal certainty and reduce incentives to engage in opportunistic conduct with regard to enforcement of SEPs. Enhanced reliability of the standards-setting context would induce more investment in the development of innovative standards and standard-compliant products; it would enhance competition and encourage future entry in both the upstream and the downstream markets.

iii. Privateering Arrangements and Article 101 TFEU

Although the above framework for assessment of opportunistic assertion of SEPs under Article 102 TFEU would provide an effective basis of enforcement in most cases involving PAE activity, a particular class of behaviour, namely privateering arrangements, call for cumulative application of Article 101 TFEU as well. The particular antitrust concern with privateering arrangements is that SEPs transfers to PAEs might allow practicing entities to target their rivals, raise their costs, harass their business operations and eventually drive them out of the downstream market.[183] This type of collusive behaviour between PEs and PAEs imply that antitrust liability should be imposed on both the privateer and its sponsor.[184]

Article 101 TFEU prohibits agreements or collusion between independent undertakings or associations of undertakings that could restrict competition by object or effect. Article 101 entails a two-step test; first, whether the agreement or collusive behaviour in question has the object or effect to restrict competition under Article 101(1) and second, whether

183 Popofsky and Laufert, *supra* n. 117, at 455; *supra* n. 123, Harris, at 323-324.
184 Carrier, *supra* n. 124, at 8.

these restrictions of competition could be justified for producing efficiencies under Article 101(3).

The distinction between restrictions by object and effect is crucial. Agreements or collusions that have as their object the restriction of competition are in breach of Article 101(1) without need to establish anticompetitive effects. Moreover, although restrictions of competition by object could still in principle be justified under Article 101(3), the burden to prove that the conditions laid down in the exemption proviso are met is significantly higher. Indeed, it is hard to conceive circumstances under which so-called 'hard-core restraints' could produce sufficient countervailing efficiencies, pass on these efficiencies to consumers and be necessary and proportionate to achieving those efficiencies.

Privateering arrangements, having the form of explicit contractual arrangement or tacit coordination between the sponsor and the privateer, should be assessed on a case-by-case basis having regard, in particular, to the exact nature of the relation between the sponsor and the privateer; the context underlying the contractual or collusive arrangement; the contractual or other restraints imposed on the privateer; and the change of incentives to the privateer in its assertion of SEPs.

'Naked' privateering arrangements imposing obligations to target specific rivals, providing claim charts and other resources, setting minimum litigation and licensing revenue targets that, in the specific context of the arrangement would result in aggressive assertion of SEPs, with a view to impose supra-FRAND licensing terms, probably is motivated by the objective to raise rivals' costs and ultimately exclude competitors of the sponsor. Such arrangements, essentially amounting to vertical price fixing with a view to exclude downstream competitors, should be treated as restrictive by object. Of particular relevance is the exact nature of the incentives to aggressively assert SEPs; contractual provisions imposing to the privateer severe penalties, such as reserving for the sponsor the right to reverse the transfer in case the licensing or litigation targets are not met, provide a strong indication that the incentives to target rivals and raise their costs are irresistible.

However, as the analysis of privateering arrangements above suggests,[185] privateering would rarely take such an explicit and pure form; rather, most privateering arrangements would provide for a more sophisti-

185 Supra, p. 40-41.

cated structure of incentives and rewards. Nonetheless, SEP transfers to PAEs might still produce anticompetitive effects. Of particular concern should be SEP transfers to PAEs with a history of aggressive assertion of SEPs and of imposing their targets particularly high royalties; PAEs with established networks of shell firms reducing the transparency of SEP ownership could also be problematic in increasing transaction costs and impeding the effective monitoring of compliance with FRAND obligations. Moreover, transactions resulting in disaggregation of SEP portfolios, absent 'non-stacking' commitments, might also result in higher aggregate royalties for standard implementers and consequently in higher prices for consumers.[186]

A crucial aspect of the assessment of SEP transfers to PAEs under Article 101(1) would be the extent of the FRAND commitment from the transferor to the transferee. Antitrust evaluation of such transactions should provide strong incentives to SEP holders to bind subsequent owners to offer FRAND licensing terms in the future. Contractual provisions extending the FRAND commitment should, in principle, be sufficient for the transferor to escape antitrust liability under Article 101(1), since the agreement, under such circumstances, would not normally produce anticompetitive effects. However, a careful examination of the context of the agreement should ensure that the FRAND commitment is genuine and that contractual or other restraints do not mute the FRAND commitment by the transferee.

In cases of SEP transfers capable of producing anticompetitive effects, a very careful review, under Article 101(3), of efficiency arguments of the contracting parties is warranted. In particular, arguments that SEP monetisation or assertion outsourcing would increase incentives to innovate or reduce transaction costs through more efficient SEP management, should be scrutinised on the basis of concrete evidence. Moreover, the contractual restraints should be proved to be indispensable to achieve the claimed efficiencies; the parties should also establish tangible consumer benefits from the transaction and in particular that consumers receive a 'fair share' of such efficiencies in the form of more innovative standards and standard compliant products at competitive prices.

186 Popofsky and Laufert, *supra* n. 117, at 456.

Part VI. Conclusion

The formal standards-setting process is, it is argued in the present thesis, an efficient and inclusive form of industry coordination, potentially resulting in near-optimal levels of investment in research and development and rapid standard adoption. At its core, a predictable and rewarding structure of returns guarantees, on the one hand incentives to invest and contribute the best technologies available and on the other hand incentives to invest in production of innovative standard compliant products. FRAND licensing terms is the contractual expression of this intricate balance of interests and incentives. Technology transfer on terms outside the FRAND range would inevitably result in the disruption of the current structure of returns and consequently in restrictions to competition, higher prices, lower output, less choice and weaker incentives to innovate.

Although market forces constrain the behaviour of holders of SEPs in many occasions, opportunism in the enforcement of SEPs is not implausible. In major jurisdictions, an array of legal frameworks provides safeguards against abuses in the enforcement of SEPs and in particular against threats or enforcement of injunctions that could significantly impair competition. Competition law had so far a residual, though meaningful, role in maintaining open and competitive markets. Contract law and patent law provide victims of abuses in the enforcement of SEPs with valuable remedies. However, in the last analysis, antitrust enforcement provides the most reliable and effective safeguard against anticompetitive behaviour by SEP holders, in that it produces significant deterrent effect.

Antitrust enforcement in the context of standards-setting has so far focused too narrowly on FRAND terms as stemming from patent owners' voluntary commitments; anticompetitive harm is thus viewed as primarily originating from the evasion of such voluntary commitments and not from the foreclosure effects of non-FRAND licensing terms. This approach, which could be viewed as an element of formalism in antitrust analysis, leaves open an important loophole, illustrated in the PAE and privateering scenarios. PAEs holding SEPs are typically unbound by FRAND or any other commitment. Antitrust enforcement should move beyond this narrow view of anticompetitive harm in the standards-setting context.

Instead, it should embrace an effects-based approach of the anticompetitive effects of imposing non-FRAND terms, thus encompassing all current or future forms of abuse in the enforcement of SEPs. Such a shift fits well with the current 'modernised' analytical framework of the European Commission on exclusionary abuses of market power; US antitrust and its traditionally more economic approach is even more apt in adopting such an approach. It is also a sound framework from a public policy perspective; a FRAND obligation based directly on competition law would increase legal certainty; it would create a level-playing field for all classes of SEP holders regardless of their previous voluntary commitments. A FRAND obligation based on competition law and an effects-based approach to antitrust enforcement would be the best safeguard for the undistorted performance of the standards-setting process.

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