# "THAT'S WHAT FRANDS ARE FOR": THE ANTITRUST BOUNDARIES OF THE PATENT HOLDUP PROBLEM

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## I. INTRODUCTION

The intersection of the "contractual relationship" between standard technology developers and implementers (especially focused on standard essential patents – ("SEP")), on the one side, and the *ex-post* antitrust scrutiny of the resulting pricing terms on the other side, has been controversial as it generated a large amount of litigation before courts and agencies, together with a significant array of economic literature.[2]

The issue of the so-called patent holdup problem has characterized the first stream of antitrust decisions in Europe and in the U.S., mainly focused on the "Smartphone War" among firms such as Apple, Motorola, Google and so on.[3]

The *holdup problem* – a notion derived from the incomplete contracts literature and generally referred to *ex-post* bilateral renegotiation over contractually agreed terms, after specific investments are made[4] – has been extended in the context of SEP as a form of "constructive refusal to deal" by a SEP holder against implementers. As it is generally stated, constructive refusal to deal involves a SEP holder issuing a patent infringement injunction to implementers. As the argument goes on, through the injunction the SEP holder forces the implementer to start a "new" bargaining, delaying the time-to-the market business and increasing the entry costs through litigation.

In this paper we argue that the "FRAND defense" for licensees against SEP holders' injunction, may generate strong incentives for a *reverse holdup* against SEP holders, moving from a property rule to a liability rule system of protection of SEP holders' rights.

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2 See Hovenkamp, Janis & Lemley, *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property Law*, (2003-04 Supplement) at 35.1.

3 See Oberlander et al., *The Smartphone Patent Wars*, *Financial Times*, 17 October 2011, available at: www.ft.com/intl/cms/s/2/de24f970-f8d0-11e0-a5f7-00144feab49a.html#axzz45QxPM0iP; *Fighters in a Patent War*, NY Times, Oct. 7, 2012, http://www.nytimes.com/interactive/2012/10/08/business/Fighters-in-a-Patent-War.html.

4 See Nicita & Sepe (2012), "Incomplete contracts and competition: another look at *Fisher Body/General Motors*?" *European Journal of Law and Economics*, Vol. 34, 495—514.

In more recent times, however, there has been a change in the policy of antitrust agencies in holdup cases within the EU, which seems to be moving in favor of standard developers, thereby limiting the scope of their antitrust liability. In the EU, the policy change can be identified by the adoption in July 2015 of the *Huawei/ZTE* decision by the Court of Justice of the European Union ("CJEU"), while in the U.S., for example, Acting Chairman Ohlhausen has expressed a favorable view on the limitation of antitrust liability for dominant SEP owners, dismissing the main argument of the so-called "FRAND defense" for licensees.[5]

We believe that the recent shift in antitrust policy should be welcome and that issues of contractual liability under SEP should take into account the two sides of the holdup problem.

## II. FRAND AND POST-CONTRACTUAL OPPORTUNISM

The holdup problem has been first analyzed in the field of the so-called incomplete contracts literature.[6] Following the definition provided by Oliver Hart (1995) a contract is incomplete when it "has gaps, missing provisions, and ambiguities and has to be completed (by renegotiation or by the courts) with strictly positive probability in some states of the world."[7]

These gaps may derive from many different sources of transactions costs: the cost of anticipating the various eventualities that may occur during the life of the relationship; the cost of deciding, and reaching an agreement about how to deal with such eventualities; the cost of writing the contract in a sufficiently clear and unambiguous way that the terms of the contract can be enforced; the legal cost of enforcement.

When incomplete contracts involve specific assets, parties may have weaker incentives to reach an agreement and, anticipating this outcome, to even invest *ex-ante*. Specific investments are valuable only if the underlying transaction takes place. Once made, a specific investment will lock-in the investors into the contractual relationship by raising their *ex-post* exit costs. As a consequence, the contractual party who makes specific investments will be vulnerable to their counterpart's post-contractual opportunism, such as forced renegotiation of the contractual terms agreed upon (holdup). Absent appropriate safeguards, incomplete contracts will lead to underinvestment.

Maintaining property rights over the assets in which specific investments are embedded (such as IP rights) partially solves the problem, providing second best incentives to invest, as having the property of those assets increase investor's outside option (and thus his *ex-post* bargaining power) in the case of *ex-post* contractual failure.[8]

However, the holdup problem is even exacerbated when specific investments in assets protected by IP, compete for building a technological standard. Indeed, the emergence of a technological standard on the one side increases the *ex-post* outside option of the investor who wins the competition for the market by imposing the standard; but on the other, it decreases the incentives to invest *ex-ante* as the losers will *ex-post* bear the full cost of specific investments that fail to become a technological standard.

A requirement that SSO members have to license SEPs on "Fair, Reasonable, and Non-Discriminatory" terms to other members of the SSO and, in many cases, to non-members who use the standard, plays a very interesting role in this respect, as they are supposed to achieve two different – and sometimes conflicting – objectives.[9] The first objective of FRAND terms is to determine that the licensing process, after the definition of the standard, effectively results in a competitive market equilibrium. Indeed, the sterilization of holdup problems should allow the technology to be adopted by implementers at an affordable price, without undue delay and with a widespread availability. On the other side, FRAND terms define *ex-ante* incentives to innovate, as the pricing of SEPs defines the revenue stream of a patented technology.

5 Acting Chairman Ohlhausen, *Interview on CPI Talks*, CPI Antitrust Chronicle, volume 1 (April 2017).

6 See Williamson (1985), *The economic institutions of capitalism: Firms, markets, relational contracting*, The Free Press, New York.

7 Hart (1995), *Firms, Contracts and Financial Structure*, Oxford University Press.

8 Hart & Moore (2007) "Incomplete Contracts and Ownership: Some New thoughts", *American Economic Review*, 97(2): 182-186.

9 See Farrell, Hayes, Shapiro & Sullivan (2007), "Standard Setting, Patents, and Hold-Up", 74 *Antitrust Law Journal* No. 3.

The achievement of this double objective can make FRAND definition and enforcement rather problematic, as FRAND conditions cannot be specified *ex-ante* in great detail by SSOs. This means that FRAND terms are incomplete to some extent. Technology providers have to enter into a FRAND agreement before the standard is set, with a rather limited set of available information. In addition, SSOs cannot be too specific in defining FRAND terms, as a strong coordination on contractual terms might suggest a collusive behavior. This kind of contractual incompleteness is the main reason for the insurgence of post-contractual opportunistic behavior of parties (e.g. holdup, holdout), and therefore is the main cause of courts' and antitrust agencies' activism.

The most interesting point of the evolution from the EC case law *on Motorola* and *Samsung* to *Huawei/ZTE* is that it shows an important swing from a policy focus based on the protection of the competitive process in *Motorola* and *Samsung*, to a more pronounced protection of the incentive to innovate in *Huawei/ZTE*. In the *Motorola* and *Samsung* cases the evidence and the theory of harm produced by the EC have leaded to an "antitrust liability" solution, which focused on the protection of the competitive outcome of the standardization process. As far as the *Huawei/ZTE* case is concerned, the EC has limited the scope of antitrust liability, leaving room to a "contractual" solution to the holdup problem, i.e. to a treatment of the question of holdup in the context of the bilateral dynamics of parties' bargaining power rather than insisting on the adoption of standard antitrust categories.

## III. THEORY OF HARM AND REMEDIES IN *SAMSUNG* AND *MOTOROLA*

Both EC cases focused on the two firms seeking of injunctions against Apple for the alleged violation of SEPs on the GPRS and UMTS standards.

In particular, Samsung sought a preliminary and permanent injunction against Apple before courts of several Member States for the infringement of a UMTS-essential patent. The main indicators for Samsung dominance, according to the EC, were that the UMTS standard was the only 3G standard in Europe, while industry players, such as manufacturers and equipment producers, incurred in significant sunk costs to deploy UMTS infrastructure. Moreover, other standards in wireless communication such as 4G's LTE, were complementary rather than substitutes for UMTS, therefore not putting any significant competitive constraint on Samsung.[10]

In this context, the main anticompetitive effects of the injunction against Apple were identified in the potential exclusion of Apple from the relevant market of UMTS-compliant mobile devices. The conclusion of the EC has been that the Samsung exercise of an exclusive property right on a SEP, enforced through an injunction, was abusive because the industry was, at the time, locked in the UMTS standard, and Apple was willing to enter into a FRAND agreement. The EC also specified that a dominant SEP holder would have been able to seek an injunction if the potential licensee was in financial distress, but given the conditions of the market, the access to court by Samsung would have produced serious anticompetitive effects. As a result, the case ended with the presentation of binding undertakings by Samsung, which agreed not to seek injunctive relief for a long period of time (five years) against licensees that agreed on a specified licensing framework.

In the *Motorola* case, structural parameters in terms of dominance and assessment of the industrial lock-in were rather similar to the *Samsung* case. The EC added some economic reasoning and evidence showing the alleged countervailing buyer power of Apple was not, in any case, sufficient to restrain Motorola's ability to behave independently from competitors, because there were no credible alternatives to GPRS technology. The EC pointed out that Motorola's conduct resulted in strong anticompetitive effects, such as the emergence of an actual temporary ban of Apple products online sales – with a potential elimination of competing products from the market – in Apple accepting very disadvantageous licensing terms, and, most importantly, in the probability that this injunction would have undermined the confidence in the standard setting process. [11]

10 EU Commission, *Samsung – Enforcement of UMTS Standard Essential Patents*, AT. 39939, April 29, 2014.

11 EU Commission, - *Motorola - Enforcement of GPRS standard essential patents*, Case AT.39985, April 29, 2014.

As far as this last point is concerned, the Commission concluded that, given Apple's explicit agreement on entering in a FRAND royalty rate set by a competent German court, Motorola's injunction would have – *de facto* – frustrated the FRAND commitment in the standard setting process. Indeed, Apple's willingness to be bound to a FRAND license would have ensured the ability of Motorola to be appropriately remunerated for the use of SEP, excluding any risk of "reverse holdup" by Apple. It is interesting to observe that, as far as the remedies are concerned, the EC did not impose a fine on Motorola, simply stating that the dominant firm should not seek SEP-based injunctions.

The main common grounds in the *Samsung* and *Motorola* cases was the focus on the potential damages that dominant SEP owner injunctions would have on the availability on a mass market of innovative, standard-compliant smartphones, and the possibility that an excessive litigation on licensing terms could have a definitive negative effect on the standard setting process.

However, if the economic evidence and analysis on the exclusionary side of the theory of harm was reasonably extended and detailed, very limited effort was put on the potential emergence of an exploitative abuse. In particular, no extensive reasoning or evidence was provided on the effect that the holdup caused by the injunction would have had on the (alleged) increase of royalties. More specifically, there has not been a comprehensive analysis of why royalties requested by Samsung and Motorola would have been exploitative, namely above the real technological value of the patent.

Moreover, the EC stated that Apple's countervailing bargaining power, due to the strong patent portfolio, was not relevant in the case, because – even if Motorola would have accepted lower royalty rates in exchange of the patents – this would have only indicated that Motorola preferred to be (partially) remunerated in kind instead of obtaining cash from royalties.[12] Therefore, it is easy to conclude that the EC did not even consider that cross-licensing could significantly reduce the holdup problem on royalties.

Both in the *Samsung* and *Motorola* cases, the EC has defined a strong antitrust liability upon SEP owners, without providing detailed evidence or suggestions on the risk of significant increases in price due to holdup. As a result, the holdup issue has been characterized more as a presumption, namely a potential risk, than a concrete situation, as far as the effect on royalties is concerned, while stronger evidence was placed on the exclusionary effect of an injunction by a vertically integrated SEP owner against a downstream market competitor. Moreover, it is interesting to underline that, from a remedial point of view, the EC seemed to have relied upon the ability and the incentives of parties to solve the FRAND pricing issue before the competent court (as in *Motorola*).

## IV. THE *HUAWEI-ZTE* CASE

Huawei Technologies was the owner of a SEP to the Long Term Evolution ("LTE") standard and sought an injunction against ZTE, who was using the Huawei patent without paying a royalty. In this context, the Court of Dusseldorf – that was competent on the case – requested to the CJEU a preliminary ruling to clarify the circumstances under which a dominant SEP owner could abuse its dominant position by seeking an action for patent infringement.

The CJEU, in its judgment of July 2015, stated that a "dominant" SEP owner could seek an injunction against a standard implementer to enforce its patents without incurring antitrust liability if it had followed a specific framework of detailed obligations. This detailed procedural framework places obligations both on the SEP owner and on the licensee, thereby offering a balanced solution and restricting spaces for opportunism in structurally incomplete FRAND contracts.

Huawei requested an injunction that encompassed the prohibition of the patent infringement, the recall of all ZTE products that used the SEP, the rendering of accounts and the award of damages. In particular, the CJEU established that the dominant SEP holder could seek an injunction asking for rendering of accounts or an award of damages without any procedural limitations, as these kind of actions did not have a direct impact on standard-compliant products manufactured by competitors.

12 EU Commission - *Motorola* - page 46.

As far as the prohibition and the recall of products are concerned, the CJEU established that the SEP owner could seek an injunction if it has alerted the alleged in advance the licensee, particularly "by designating that SEP and specifying the way in which it has been infringed." At this point, the alleged infringer could express its willingness to take a license on FRAND terms, while the SEP owner should have presented to the alleged infringer a written offer for a license, specifying the methodology for the calculation of the royalty and the unitary value to be paid. Thus, it was for the alleged infringer to respond to that offer diligently and in accordance with "recognised commercial practices in the field and in good faith." If these procedural steps were satisfied by the SEP owner and the negotiation still fails, there was the possibility of seeking an injunction without any antitrust liability.

The interesting point of the *Huawei/ZTE* solution – that shows some similarity with the "Smartphone Patent War" decisions – is the attention put on the SEP litigation not to prevent competition in the downstream market, as highlighted by the different regime acknowledged to the rendering of accounts and damage award injunction. On the other side, as far as the exploitative holdup story is concerned, the approach by the CJEU is much more balanced than the *Samsung* and *Motorola* cases, as, instead of enlarging the limits of antitrust liability for SEP owner on the basis of a holdup presumption, a complex and detailed procedural machinery is put in place, in order to solve the holdup/holdout through the interactions of the SEP owner and the licensee.

## V. DOES THE HOLDUP ISSUE DESERVE A PRESUMPTION?

Looking at the standard antitrust approach, the antitrust scrutiny has indeed interpreted the patent holdup problem as an exclusionary conduct, assuming the SEP holder as a "dominant" firm in a "relevant market" whose dimension is determined by the patented technological standard.

The main difference, relative to the traditional antitrust approach applied to IP (for instance, in the pharmaceuticals and music industries), seems to be that in the case of SEP, it is the technological standard that *ex-ante* defines "dominance" *per se*. Given that the standard is defined among industry stakeholders, the generation of a technological standard should imply a sort of "special responsibility" or stronger liability on the SEP holder, such as the IP should be treated as an essential facility for all the implementers.

Moreover, as the generation of a standard requires coordination and collaboration among all the possible stakeholders, many standard setting organizations ("SSOs") require SEP holders licensing their technology on FRAND terms. With the 2014 landmark decisions involving Samsung Electronics and Motorola, the EC set out a framework limiting the right of dominant SEP holder to seek an injunction in order to avoid holdup, leaving room to the "FRAND defense" for licensees, as the U.S. Federal Trade Commission ("FTC") did in the *MMI/Google* case.[13]

Going back to the famous distinction traced by Professor Guido Calabresi,[14] the "FRAND defense" approach recalls the notion of a liability rule, as a rule of protecting the SEP's property right. Under a liability rule, an entitlement is protected by recognizing a fair price to the owner, and "access" to the entitlement does not require the owner's prior consent. On the opposite side, under a property rule, "someone who wishes to remove the entitlement from its holder must buy it from him in a voluntary transaction in which the value of the entitlement is agreed upon by the seller."

If the SEP holder is not allowed to issue an injunction against the implementer, when a commercial agreement has not been signed in the first instance, granting a "FRAND defense" for licensees is equivalent to saying that the implementer has a right of access without the need of obtaining a preliminary consent by the SEP. That is to say that the SEP holder's right is protected by a liability rule.

13 Decision and Order, *In the Matter of Motorola Mobility LLC, and Google Inc.*, Docket No. C-4410 Section II.E (July 23, 2013), available at: http://ftc.gov/os/caselist/1210120/130724googlemotorolado.pdf.

14 Calabresi & Melamed (1972), *Property Rules, Liability Rules and Inalienability: One View of the Cathedral*, 85 Harvard Law Review 1089.

In turn, this implies attributing all the *ex-post* bargaining power (over SEP terms) to the implementer, raising the risk of a *reverse holdup*.[15] The implementer can make a "take it or leave it" offer and then, in case of contractual failure, she can continue to have access to the standard in the absence of injunction. Thus, inhibiting SEP holder to seek injunction is equivalent to decide who has all the *ex-post* bargaining over quasi-rent sharing. An outcome that, when anticipated *ex-ante* by the potential SEP holder, may generate adverse incentives to cooperation and, consequently, underinvestment in specific or sunk assets. Indeed, under a "FRAND defense" for licensees all the potential implementers may find it fully rational to start negotiations only after having had preliminary access to the asset, delaying payments and transfer to the SEP holder. In this opportunistic context, being entitled to "a standard-essential patent" does not provide the SEP holder with the appropriate incentives to invest *ex-ante* optimally, given the uncertainty over the *ex-post* quasi-rent distribution *vis-à-vis* the implementers. In other words, being a SEP holder could not be sufficient to grant to investors the optimal portion of quasi-rent which justifies the *ex-ante* decision to invest.

The prevention of exercising the right to enforce a SEP by seeking an injunction seems thus a very invasive remedy.[16] Indeed, setting limits on the SEP holder's right to access to a tribunal has very strong consequences both from a legal and economic standpoint.

From a legal point of view, it should be underlined that dominant patent holders are not comparable to dominance by providers of physical goods, infrastructures or services. Indeed, in order to make their technology profitable and to prevent free riding, they should engage in the costly activity of enforcement in courts.[17] Additionally, the prevention of seeking an injunction has a very negative effect on innovators' decision to invest, as the absence of injunction probably results in a delay in obtaining licensing revenues, negatively affecting the inventor's expected return on investment.[18]

Moreover, market players in highly technological markets normally can rely of specific conditions and procedures that can limit the opportunistic behavior of SEP owners. For example, the repeated interaction of standard developers and implementers in the SSOs can be – *per se* – a constraint to opportunistic behaviors. In order for holdup to arise, there should be an asymmetric distribution of the specific investments to be made. It is not always true, for example, that only implementers have to make investments in specific assets.[19]

It should be underlined that the need for a holdup presumption against SEP holders is not supported by the observation of a large and systemic impact on consumer markets. As an example, the evolution of the smartphone market, quite on the contrary, shows that the standard setting process has led to intense and pervasive competition in terms of low prices, innovation and rivalry between competitors.[20] Therefore, the argument made by the EC in the *Motorola* case on holdup of SEP owners risking to undermine the competitive process following standardization seems to be over-emphasized. Finally, the need to impose antitrust liability to a SEP owner can be non-proportional when, for example, contract law already provides for some effective deterrence against opportunistic behaviors.

15 Langus, Lipatov & Neven (2013), "Standard-Essential Patents: Who is Really Holding Up (and When)?", *Journal of Competition Law & Economics*, Volume 9, Issue 2, pp. 253–284.

16 See Geradin & Rato (2007), "Can Standard-Setting Lead to Exploitative Abuse? A Dissonant View on Patent Hold-Up, Royalty Stacking and the Meaning of Frand," *European Competition Journal*, Vol. 3, Iss. 1.

17 Teece & Sherrye, *On Patent Monopolies: an economic re-appraisal*, CPI Antitrust Chronicle, volume 1 (April 2017).

18 Taladay, *Measuring the impact of injunctive relief on innovation*, CPI Antitrust Chronicle, volume 1 (April 2017).

19 Geradin, *Moving Away from High-Level Theories: A Market-Driven Analysis of FRAND,* The Antitrust Bulletin, Volume: 59 issue: 2, page(s): 327-371.

20 Ginsburg, Wong-Ervin & Wright, *The Troubling Use of Antitrust to Regulate FRAND Licensing,* CPI Antitrust Chronicle (October 2015).