Standard Essential Patents (SEPs), hindrance to innovation?

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TEAM 1

Standard Essential Patents, Hindrance to Innovation?

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1. Introduction

Standard Essential Patents (SEPs) attract crescent awareness from major policy bodies and academic circles, as SEPs-related concerns expand over their role on the markets, in which a multitude of innovative products are developed in compliance with, or in conformity with, an increasing number of standards1. In short, SEPs are patents which protect a must-have technology that has been thereby set as a standard2. This implies that e.g. manufacturing, selling, importing or stoking of standard-compliant products falls within the scope of the exclusive right granted to the SEP-holder.

Despite its usage on a large scale, there is no universal definition of the term “standard”. In fact, each Standard Setting Organization (SSO) will have its own definition. The EU Regulation 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardization recognizes as competent the following organizations: European Telecommunications Standard Institute (ETSI3), European Standardization Committee (CEN4), and the European Committee for Electrotechnical Standardization (CENELEC5). Nevertheless, the European Commission defined a standard as “a document that sets out requirements for a specific item, material, component, system or service, or describes in detail a particular method or procedure6”. SSOs oblige SEPs’ holders to propose licences on their patented standard under fair, reasonable and non-discriminatory (FRAND) terms: even if patents grant an exclusive monopoly for a certain period of time, they must be open and available to different interested stakeholders7. Even though these FRAND terms are vague and normally not defined in a traditional SSO agreement8, they aim at avoiding patent hold ups9. Moreover, FRAND are also intended to provide reasonable rewards to firms that have invested in research and development for the technology incorporating the standard10.

The target of the Patent system is innovation and by a variety of means, patents are said to foster it. Patents provide benefits both for its holder and for the society. Not only the patent owner is granted a monopoly for a limited period of time on his invention but also, the society will benefit from advanced technical knowledges and from a real competition based on invention.

But what about SEPs? Are the pros of the Patent system transposed into the SEPs system, in order to keep on boosting innovation? This report aims at assessing whether SEPs

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8 Interview with R. Lynde, Matthew, “Standard Essential Patents (SEPs): Costs And Benefits Of Broad Application” [The Metropolitan Corporate Counsel, 2014].
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do foster innovation or instead, constitute a hindrance to it. With a particular focus on the EU context, we will tackle the ambivalent role played by SEPs on the market.

In its Innovation Union plan, the Commission stated that innovation could be defined as the “change that speeds up and improves the way we conceive, develop, produce and access new products, industrial processes and services”. Analysing this definition, a paradox arises between SEPs and innovation: innovation deals with “new products, industrial processes and services” while SEPs settle a common reference for all the undertakings of a market and thus, take as a reference an already known invention.

So that, on the one hand, SEPs may have a negative impact on innovation. Nevertheless, on the other hand, there are evidences that SEPs do have a certain potential to promote innovation, provided that various balancing mechanisms, such as compliance with fair reasonable and non-discriminating terms for SEP licenses, operate on the market.

In sum, the purpose of the report is to demonstrate that notwithstanding some mainly competition-related arguments that illustrate how SEPs have a negative impact on innovation, they nevertheless, at the end of the day, do promote it.

2. SEPs, standardization and exploitation: a hindrance to innovation

In order to show the damaging effect of SEPs on innovation, we should first present some of the most widespread and general criticisms addressed to standards, patents and SEPs, and secondly address the charges brought against SEPs from a Competition Law perspective.

2.1. Innovation and negative effect of SEPs: general issues

We can hardly imagine the modern world without standards. However, given how standardisation influences the market and innovation, it is curious that standardisation has taken place at all. In particular from a business point of view, standardisation generally means that competitors exchange important business-related information. From a legal outlook, standardisation amounts to a sort of cartel.

The existence of a standard for a particular technology makes competitors of SEP-holders seek for a licence. When there is no standard, the companies have a choice: to take a licence for existing solutions or to invent analogue technologies themselves. Obviously, in general, SEPs do not provide for innovation incentives opportunities. However, there are studies, showing that the effect on innovation depends on the moment of the settlement of the standard. If it took place at an early stage of the innovation process, for the product at stake, the risk of hindrance to innovation will be the highest. When a standard is settled at a late stage, after companies have done their best to innovate and to develop the best technology, then innovation a priori will not be harmed. However, when market participants are aware of

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that a standard will be adopted in a field of technology, they may refrain from investing in innovation until the standard is adopted because of the financial risks involved.

Another hindrance to incentives to innovate comes from the practical Patent Law and is the “reverse side” of the incentive to “invent around” in order to foster innovation\textsuperscript{14}. The hindrance here comes into play when a patent is standardized - then the need to invent around becomes irrelevant, hence the incentive to innovate no longer exists.

Standardisation also generates important risks, one of them being the so-called “hold-up\textsuperscript{15}”. “Hold-up” occurs when a SEP-holder uses it excessively towards a standard-interested business, which is more often expressed in imposing non-FRAND licensing conditions. After a standard has been set and implemented in the market, the companies, interested in manufacturing and selling the products depending on it, cannot proceed without obtaining the legal access to this standard, which in its turn is impossible without heavy investments. After a company makes these investments, a future switch to a non-standard based technology becomes extremely risky. If a company takes such a step, it will result to losses of investments. In a worse-case scenario, this company cannot replace the technology without going off the market. The reason for that lies in the interoperability factor or network effects that the modern market implies. Indeed if a product does not meet the respective standards, this product cannot interoperates with other products of the same kind, which leads to a possible defeat of the manufacturer on the market. Therefore when a standard has been successfully launched and is widely accepted by the market participants, they become hostages of this standard and of its holder.

The important adverse effect of the hold-up is in that through this practice and by virtue of the patent-based exclusive right, the SEP-holder assumes part of the value of the standard and dominates the market through his standardised technology. This phenomenon is even more appalling, in terms of hindrance to innovation, insofar as there are not just several SEPs related to a particular standard, but thousands of them, and all respective SEP-holders have therefore opportunities to use their hostage power.

Another risk that might be minor is a “hold-out” risk\textsuperscript{16}. It occurs when a competitor of a SEP-holder makes use of his standard and hence uses all linked SEPs without entering into any license.

A frequent scenario of hold-out takes place when the standard has been implemented in the market and a market participant starts producing and selling products involving it. The SEP-holder enters into FRAND licensing terms commitment, but the parties cannot come to an agreement, often because of different understandings of FRAND terms. While their disputes go on and no outcome is available, the party that has started using the standard still does not pay the respective fees. In such situations the SEP-holder often refrains from putting pressure as he has made a FRAND commitment, therefore he is under the risk of abuse of dominant position\textsuperscript{17}.

\textsuperscript{14} Dan L. Burk, “Inventing Around Copyright”, 109 Nw. U. L. Rev. 547.
\textsuperscript{16} Peter Picht, “Standard-essential patents, Limiting exclusivity for the sake of innovation”, Presentation at the EIPIN Conference, Munich, April 2015.
\textsuperscript{17} Generally seeking injunctions is a legitimate remedy for patent holders in case of patent infringements. However, in case of SEP the seeking of an injunction may constitute an abuse of a dominant position if a SEP-holder has given a voluntary commitment to license its SEPs on FRAND terms and if the company against which an injunction is sought is willing to enter into a licence agreement on such FRAND terms.
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The negative effect of a hold-out is the market players’ using the patented technology for free, *i.e.* free riding on the innovative technology of the SEP-holder. As a result, innovators may abstain from standardisation processes, which may indirectly lead to less innovation as the race for the better technology becomes less of an issue.

These risks are not only theoretical, as statistically SEPs generate more litigation than baseline patents. Increased litigation does not profit to all market players, as it is a badge of much legal insecurity and small players very often do not have the financial potential to stand for their causes in front of a judge. The investigations of the European Commission into the SEP licensing strategies of Samsung and Motorola Mobility - the mobile phone part of Motorola, now owned by Google - have clearly demonstrated that SEP-holders can and tend to abuse market power acquired through the standardisation process and even do that by threatening to pursue injunctions that might have blocked smartphones from the market.

2.2. The interference of standard essential patents with free competition

The negative impact of SEPs can also be seen through the prism of Competition Law. If most cases deals with article 102 TFEU (*i.e.* abuses of dominant position), some conducts can be prohibited on the legal ground of article 101 TFEU (*i.e.* anticompetitive agreements). In fact, when standards are settled by a SSO, the structure of the SSO itself might be anti-competitively structured. It typically involves coordination between competitors and thus, the structure of the entity may be prone to Competition Law violations. As SSOs are dominated by undertakings acting on the same market, we can fear they might be willing to protect their own interests. Moreover, when the standardization is made by a consortium of undertakings, collusions and boycotts might appear. Not only the competition is at stake but also, the dynamic efficiency. In fine, competition is disrupted and dynamic efficiency vanished, while both of them targeted innovation.

On the legal ground of article 102, the main markets that can be affected are the technology one and the standard-based products one. Even if the only fact of holding a SEP does not constitute a dominant position *per se* (and thus, it is necessary to demonstrate the market power of the SEP-owner), a recent case underlines how a SEP-holder could abuse his dominant position by refusing to licence while he made a commitment to a SSO to grant FRAND licences and by bringing an action against a standard-user.

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19 Case AT.39985 Motorola and Case AT.39939 Samsung [2009]. See also MEMO/14/322.
20 By boycotting a patent, members of the SSO refuse to standardize the patent, even if it is the most advanced technology, only because of the existence of the patent. Thus, there is less incentive to innovate as the best technology will not necessarily be chosen as a standard.
21 The dynamic efficiency is the efficiency that leads to innovation. “In a dynamically inefficient economy there is excessive saving which leads to excessive capital accumulation” (A Dictionary of Economics [3 ed., 2009]). The balance of short-term issues with long-term issues no longer exists and thus, the innovation is not fostered.
22 Case C-170/13 Huawei Technologies Co. Ltd v ZTE Corp., ZTE Deutschland GmbH.
23 CJEU, Press Release No 155/14, “Where the proprietor of a standard-essential patent (SEP) has made a commitment to a standards body to grant third parties a licence on fair, reasonable and non-discriminatory (FRAND) terms, it constitutes an abuse of a dominant position for that proprietor to request corrective measures or to seek an injunction against a company that has infringed the SEP (‘the infringer’) (an action which, if successful, may cause the products and services supplied by the offending company to be excluded from the markets covered by the standard), where it is shown that the SEP-holder has not honoured its commitment even though the offending company has shown itself to be objectively ready, willing and able to enter into such a licensing agreement”.
24 Opinion of Advocate General Wathelet delivered on 20 November 2014 on the Huawei case (Case C-170/13 Huawei Technologies Co. Ltd v ZTE Corp., ZTE Deutschland GmbH).
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Furthermore, the standardization of a patented technology can increase the market power of the undertaking holding the patent, leading to a less fragmented market in which competition is lessened as much as the incentive to innovation. In fact, it is said that “technology is scaled neutral” but mostly, only big players really can innovate and thus, if their patents are standardized, they will earn a new income thanks to them and their market power will grow.\(^25\) So that, two negative consequences for innovation arise: firstly, when an undertaking has an important market share, there is less competition on the market and this will make the undertaking at stake not stimulated to innovate. Secondly, if the standard is a commercial success, the SEP-holder will benefit from a lifetime annuity and he will not be stimulated to innovate in order to find a better technology that might put at issue his SEP on the relevant market\(^26\).

On the side of SEP-holders, conducts have been classified as they spotlight the negative effects that SEPs can have on innovation. Within them, we count the “patent ambush” and, as previously described, the “hold-up” risk. Both of these conducts can lead to an abuse of dominant position as we could have seen in, respectively, the Rambus\(^27\) and in the Qualcomm\(^28\) cases.

In light of the foregoing, one could think the application of the essential facility doctrine and the indispensability test to SEP would limit the negative effects on innovation. Nevertheless, when studying the jurisprudential application of these theories, we can note that what is even worse is the impact of standardization on SEP licence enquirers: a risk of opportunism does exist. Undertakings willing to compete with the SEP-holder will wait for having a licence, under FRAND terms, without getting involved into the innovation process. There is no need for them to innovate as competition will not be merit-based. When the phenomenon is collective, we are facing a “patent hijacking”\(^29\) that generates a fall of the dynamic efficiency as the profits of the SEP-holder will decrease, leaving less room for innovation in its strategy.

This wrong application of the essential facility theory arises from the current European approach of competition. Holding a SEP generates a competitive advantage and a superior bonus to its holder. Classic economists, who refer to a pure and perfect competition, do not consider this bonus as justified as it is above a regular competitive advantage. However, both studies and other economic theories\(^30\) underlined that the incentive to innovate only operates when this extra bonus exists. In the Microsoft\(^31\) case, the European approach was the classic


\(^{26}\) Nicolas Petit, « Les accords de normalisation en droit européen de la concurrence » in Propriété intellectuelle et concurrence, [IRPI 2012].

\(^{27}\) Case COMP/38.636 Rambus (2009); When the technology developed by Rambus was not standardized yet, the company hid its relevant patents and patent application. After the standardization, it opposed its patents to the users of the standard and asked for higher royalties it could have received if its patent would have been divulgated ex ante. Innovation will be harmed if there is no alternative to the patent after the standardization (the technology must be dominant ex post) and if the SSO would not have chosen the patent at issue if it had known its existence.


\(^{29}\) Some economic studies also underlined that such “patent hijacking” is also a defence against “patent ambush”:


\(^{30}\) See e. g. the increased returns theory, Frédéric Marty and Julien Pillot, “Politiques de concurrence et droits de propriété intellectuelle : la théorie des facilités essentielles en débat”, presentation at the conference L’économie industrielle depuis trente ans: réalisations et perspectives, University Nice Sophia-Antipolis [November 2008]

\(^{31}\) Case T-201/04 Microsoft v Commission [2007], II-02977.
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one, without any exception for the innovation economy. Thus, it lead the competition authorities to withdraw the bonus Microsoft had by imposing FRAND licences, taking the risk to considerably reduce the financing of innovation. On an economic approach, we can assume that the classic approach – such as the current European one – is not adapted to the innovation society and economics.

All in all, there is a strong presumption that standardization per se and its implementation by both SEP-holders and SEP-users constitute a hurdle to innovation. When a patented technology is standardized, there is no need any more to innovate: on the one hand, the patent holder will not invest in finding a more developed technology but will develop a strategy around protecting his SEP, on the other hand, if an undertaking wants to enter the market, he will have to comply with the standard and will not be stimulated to find a better alternative. It is even worse when we take into account that patents had been standardized while they were not the best technology at the moment of the standardization.

3. Towards a balanced view on SEPs as promoters of innovation

There are evidences showing how SEPs might have a negative impact on innovation. Nevertheless, as every very complex topic, it can be treated from another perspective. In this sense, there also are proofs of the positive effects SEPs have on innovation.

3.1. Standard Essential Patents as driving force to the economy, benefiting the actors in the market

As SEPs can represent a positive factor for innovation, it should not be alarming that they are used more and more frequently. SEPs encourage continuous progress by inducing significant investments in technological research, fostering public health and safety.

From a Competition perspective, within the EU, articles 101 and 102 TFEU (and their relative soft law guidelines) contain the competition rules that provides a framework to SSOs and to negotiating parties in order to facilitate FRAND licensing, controlling the excessive rates and hold-up situations. In general, those agreements between undertakings are compatible with Article 101 TFEU due to its positive economic effects and benefits for consumers. Moreover the EU Commission and competition authorities have been aware of the peculiarities of SEPs in order to protect competition and innovation.

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33 Interview with Josef Drexl: “Standard setting organizations and processes: Challenges and opportunities for competition and innovation” in the framework of the The New Frontiers of antitrust conference [June 2015]. <http://www.eventbrite.com/e/interview-with-josef-drexl-standard-setting-organizations-and-processes-challenges-and-tickets-16479990994> accessed 25 May 2015. According to Josef Drexl, EU Competition Law is a legal regime that constitutes the “only EU-wide legal instrument for creating a regulatory framework for standard-setting and control of hold-up situations in which SEP-holders try to generate excessive royalty rates. What is more important is that Competition Law provides a procedural framework both for the standard-setting process and the negotiations of the parties to facilitate FRAND licensing”.  
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For companies, SEPs have a direct connection with new technological developments, allowing them to be in a more competitive position against their competitors, to get a better market position and to reach the possibility to recoup their investments. This leads to market growth and development of global outsourcing opportunities, serving as “fundamental building block for international trade”\(^{36}\), especially in the information and communication technologies field\(^{37}\).

Moreover, companies’ market position might depend on the number of SEPs they own and, the more patents a company owns, the higher the royalty rate of licensing is going to be. Apart from the incentive that patents bring themselves, gathering various patents owned by multiple companies reduces cost and licensing fees for other companies interested in implementing the given standard\(^{38}\).

In a globalized economy, authors like Donald Purcell support the thesis that standardization is accelerating the globalization phenomenon. According to studies of the Institute of Electrical and Electronics Engineers (IEEE\(^{39}\)), there are around 500,000 standards that serve as foundation of the global economy\(^{40}\). Moreover, taking into account that is necessary to introduce high quality technology in the market, SEPs play an important role.

Standards allow patent holders to coordinate and negotiate the use of their technology\(^{41}\) and also, they allow interaction between the different manufacturers, wide spreading the adoption of high technology products, as for example, Bluetooth, SD card, MP3, 4G or JPEG. All this carries the creation of a more intense competition with more product variety\(^{42}\); the result is very positive for consumers as it leads to greater offers and lower prices.

Furthermore, for users, standards give confidence and acceptance\(^{43}\) of the technology. It also makes the technology affordable and accessible: since products from different companies are compatible, it costs less to produce them. Thus, products have a higher value to the consumers.

SEPs concentrate high technology, which is important for patent holders because once a given patent is included in a standard, its value increases. Thus, patent holders are very interested in developing the technology that is used in the standard in order to avoid obsolescence of their own technology to keep up with the technological progress. This is a major issue taking into account that standards may incorporate a large number of technologies covered by multiple SEPs, like the well-known Wi-fi standard, which has 3000 potentially essential patents\(^{44}\). This is the main reason that leads firms to invest in standardization.

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on 10 February 2012, stated that the “EC is determined to use antitrust enforcement to prevent the misuse of standard essential patents (SEPs). Since then, DG Competition has formally opened investigations against parties that are suspected of making such abuse”.


\(^{39}\) World's largest professional association for the advancement of technology.

\(^{40}\) Donald Purcell: “Globalization and The Role of Standardization”, Strategic Standardization, ISO Technical Committee 260 [2011].

\(^{41}\) Knut Blind (Coordinator), Rudi Bekkers, Yann Dietrich, Eric Iversen, Florian Köhler, Benoît Müller, Tim Pohlmann, Stein Smeets Verweijen, loc. cit.


\(^{43}\) Knut Blind, The Economics of Standards: Theory, Evidence, Policy [2004].

\(^{44}\) Gregory K Leonard, Mario Lopez, op. cit.
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Moreover, the more producers there are, the lower the production costs and the higher is the risk sharing\(^\text{45}\).

Regarding this matter, standards setters can often choose between replacements and upgrades of a given standard. While the standard upgrade carries an improvement upon an existing one, the replacement involves a more radical change that introduces new technology into the standard. When a standard is replaced, new technology replaces the old one, fostering research and innovation. Both modifications imply a significant improvement that costs less for users in case of upgrades and that represents a major and important advance and also a significant modernization of the system, in case of replacements\(^\text{46}\).

For all these reasons, it is possible to consider that SEPs accelerate the technology progress and represent a positive factor for different market participants. The companies invest in the creation and development of new technologies introduced or implemented in a standard in order to update the existing technology. The final user is more comfortable with a technology that is not only cheaper, but also commonly accepted, available and used. SEPs facilitate market liberalisation, interchangeability of products and services and communication between actors. Hence, SEPs are a driving force to innovation.

### 3.2. Next steps forward in SEPs regulation

After both negative and positive aspects of SEPs have been presented, it seems worthy to give an overview of the major academic and practitioner’s proposals aimed to palliate the obstructive effects SEPs have on innovation. These opinions - mainly focused in modifying the SSO policy to generate a clear and faster environment in the determination of FRAND terms and on the litigation strategies - will be presented after a brief outline on the recent SEPs policy frictions on public debate.

Policy-makers and SSO have the role to provide a balance among the interests of SEP-owners and standards implementers ensuring that proprietors of IPR will provide their patented technologies to the standards-development process and that the standards incorporating these technologies will remain widely available to implementers\(^\text{47}\). The necessity for such balance has led SEP-owners to license the use of their SEPs on “fair, reasonable and non-discriminatory” terms with the goal of promoting the standard so that assure firms using it that they will not be blocked from bringing their products to market as


\(^{46}\) Justus Baron, Knut Blind, Tim Pohlmann, “Essential Patents and Standard Dynamics” [March 2013] <https://www.law.northwestern.edu/research-faculty/searlecenter/events/entrepreneur/documents/Baron_Pohlmann_Blind_Essential_Patents_Standard_Dynamics.pdf> In some practitioners’ opinion, sometimes patent holders only accept given standards if their technology is integrated in it, which might cause the standardization process be more complex and more time-consuming (according to Dr. Ivstan Sebestyen in the interview “EU study on the Interplay of IPR and Standards”, held in the context of a fact finding study about the “Interplay of IPR and Standards” on April 13th 2010 <https://innovationtomorrow.wordpress.com/library/resources/shared-information/interview-interplay-of-ipp-and-standards/> accessed 25 May 2015. Despite this, authors Baron, Blind, and Pohlmann, having investigated the effects of standard essential patents on the frequency of upgrade and replacement of standards, among some of their conclusions, encourage SEPs adoption as they represent a reduction of the technological uncertainty (Justus Baron, Knut Blind, Tim Pohlmann, *ibid.*).

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long as they are willing to pay reasonable royalties for any SEPs48. Whereas this current standardisation system has worked quite well, setting more than 500,000 standards worldwide49, the recent frictions among SEP-owners and implementers in the mobile sector regarding the rights and obligations deriving from FRAND licensing commitments has put SEPs at centre of public debates50. Indeed, in 2012, the International Telecommunication Union (ITU51) hosted a round table among representatives of industries, standards bodies, regulators and academia in order to exchange ideas and clarify the nature and limits of FRAND commitments, particularly with respect to the meaning of “reasonable” under FRAND licensing terms52. Indeed, it seems evident that the ambiguity of FRAND commitments - which has lead to various courts actions on the interpretation of what a “reasonable” royalty is53 - requires clarification in order to grant a well-defined legal tool with the goal of balancing the rights of SEPs-owners and SEPs-users, to promote innovation54.

As stated above, this need of clarification has been tackled by academics and agency expert environment. Some proposals on FRAND’s improvement have thus recently arisen as follow summarised:

**Pseudo Pool Approach:**

Patent pool occurs when multiple patent owners allow a common agent to grant licenses to patents contributed to the pool, and net revenues are allocated among the pool participants in accordance with a pre-determined formula55. The goal of this tool is to enable a vendor willing to implement a standard to obtain a license to many patents simultaneously and at a single royalty rate (royalty rates and other terms are determined and disclosed at the outset and a single royalty covers all patents in the pool56). However, patent pools - unlike SSOs, which permit SEP-holders to disclose patents that they believe are essential to the standard - must ensure, with a high degree of certainty, that all patents placed in the pool are essential. This vetting process, usually accomplished through external counsel committed for the purpose, is typically cost prohibitive57. In this *pro* and *contra* context, some authors58 have proposed a pseudo pool approach which combines some features of patent pools preserving the flexibility of the SSO model. The main features of this model may be summarised as follows59:

49 Donald Purcell, op. cit..
51 ITU is a specialised agency of the United Nations responsible for issues related to information and communications technology and also related to standard-setting (at ITU-T department).
52 TAP Guest Blogger, New Developments in RAND and Standard-Essential Patents – A Conference Recap.
53 See, for example, Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 877–78 [9th Cir. 2012].
57 Jorge L. Contreras, op. cit.
58 See Jorge L. Contreras, ibid.
59 More points - other than the mentioned ones - are touched by the author in describing the approach such as: (1) there is a penalty for over-declaration of SEPs, (2) each patent holder is also permitted to license its SEPs independently of the pseudo-pooling arrangement, and (3) patent holders can opt out of the collective royalty structure by committing not to assert their SEPs against vendors.
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- Declaration of SEPs and FRAND Commitment

  Patent holders have to declare SEPs, (based on their good faith evaluation of essentiality to a standard under development) promising to license their SEPs on FRAND terms and conditions to all vendors.

- Aggregate royalties determination

  The SSO, when declaring the technical standard has also to establish the “aggregate royalty” for that standard which would be divided among the SEPs-owners. It must be “reasonable” taking into account the expected overall market for standardised products, historical royalty rates in the industry, typical product price ranges, and the like.

- Licensing

  Each SEP-holder may negotiate license terms and conditions - other than the Aggregate Royalty - with all interested vendors. Or SSO may also formulate a license agreement to be used among all patent holders.

- Allocating the royalties

  Each patent holder will receive a share of the aggregate royalty based on the number of declared SEPs that it holds. This proposal, having the intent to clarify and modernise the actual FRAND system, basically encourages ex ante negotiations of royalty rates prior to lock-in of a standard with the goal of improving the efficiency of FRAND commitments by addressing royalty stacking directly\(^{60}\).

Standard Setting Organisations Approach:

Some authors consider pivotal the role of SSOs in solving the above-mentioned FRAND related issues, lowering hence the negative impact of SPEs on innovation. The proposed improvements to current IPR policies of SSOs\(^{61}\) - aimed to reduce the problem of hold-up and litigation in this sector – consist in creating a as strong as possible commitment to bind future holders of the SEP to any FRAND provision made within the SSO. In addition, FRAND commitment should include a process that SEP-owners must follow before they can seek an injunction by the licensor. This process would determine what path must be followed by parties to resolve disputes over a FRAND’s rate, validity, essentiality, or infringement before an injunction or an exclusion order.

Arbitration Approach:

Following the “standard setting organisations approach”, some authors affirmed that SSOs must adopt best practices that will prevent patentee hold-up while ensuring that the question around the appropriate royalty is resolved in a fair and predictable way. Indeed, in the context of FRAND litigation, courts are asked to resolve what constitutes a breach of the

\(^{60}\) Jorge L. Contreras, ibid.

\(^{61}\) Kai-Uwe Kühn, Fiona Scott Morton, Howard Shelanski, op. cit.
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FRAND commitment. This means that the court has to make a substantive judgment regarding what is a reasonable royalty, and then a second judgment of whether one or both parties’ offers were close to a reasonable royalty. This time-costly process may be overtaken under the proposal of some authors where “if an implementer thinks an offer is not FRAND, the implementer can just say no”. This means that if the SEP-holder does not want to change the FRAND parameters, they must go to arbitration to determine what FRAND is without the need to have a preliminary assessment of whether the offer was FRAND or close enough to FRAND. According to these authors, this goal may be reached by including on a FRAND commitment a process that is faster and costs less when determining a FRAND rate, or adjudicating disputes over FRAND, than litigation. In species, authors consider alternative dispute resolution within the SSO. Indeed, recurring to arbitration may rapidly solve various issues on FRAND litigation, especially in regards of timing and issues related to conflict among different jurisdictions which may be overstep if a patentee who has made a FRAND commitment has agreed to resolve all disputes via arbitration.

4. Conclusions

As a result of what has been argued, it appears that standardization drives innovation by establishing interoperability between products, facilitating consumers’ decisions in the market, selecting the “best” technologies and by promoting research. All these positive effects of SEPs on innovation last as long as the risks connected to the patents hold-up and hold-out are reduced, and the abuse of dominant position or the existence of agreements that could disrupt free competition are stopped.

In relation to the risks represented by the SEPs, it is important to ensure a compensation for licenses through the use of FRAND terms, as this will help to prevent patents hold-ups and hold-outs. The use of FRAND terms is designed to foster innovation via standards by providing reasonable remuneration and allowing access to the standard. The role SSOs have to play is therefore important: to promote innovation, they are in the position to ensure FRAND commitments and determine what FRAND are. Despite the fact that there is an interest for all the parties and the public in having more clear and precise rules, there are objective obstacles related to the fact that it is difficult to determine FRAND terms. Moreover, SSOs are private entities, dominated by market participants and which are not necessarily interested in having stricter regulation. However, as seen, it seems that nowadays the focus is on modifying the SSO policy in order to generate a clear and faster environment in the determination of FRAND terms and on the litigation strategy.

Competition Law in the EU provides rules that are applicable to SEPs, and the recent European jurisprudence illustrated before has shown that articles 101 and 102 TFEU might be useful and effective tools restraining anticompetitive behaviours, which consequently impede innovation. Though, there are limitations due to the lack of a generic test under Competition Law and the conduct of SEPs-holders. In order to ameliorate the legal framework, it could be argued that Patent Law should provide more specific rules concerning SEPs, without the need of creating a new ad hoc legislation. Because in our opinion the standardization is not an

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62 As in Microsoft, 864 F. Supp. 2d at 1036–39
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issuer *per se*, and as we assume the phenomenon will keep on gaining ground, it could be argued that it is the Patent system that needs to be adapted to standardization and not *vice versa*.

As a final consideration, we can agree upon the fact that at the EU Competition Law is a useful balancing tool that enables SEPs to be used in order to promote innovation. Nevertheless, it will be interesting to see if this approach will survive the new Unified Patent Court. As many judges will be technical judges, one concern could be that they will tackle the issues only in a Patent Law outlook, making the role of the balancing tool not effective. In this context, it will be interesting to see how the activity of the ECJ will further accompany the establishment of the UPC.
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