


Patent portfolios and Patent Assertion Entities: antitrust issues and future perspective under the Unified Patent Court

PIETRO CAPPABIANCA

PhD Candidate in People, Business and Markets Law
University of Naples Federico II (Italy)

pietro.cappabianca@unina.it

 <https://orcid.org/0009-0008-3483-7526>

Abstract: Protecting research has always been a relevant issue in order to foster innovation, especially in the pharmaceutical field. Intellectual property rights protection plays a main role in the current economy since it allows companies to monetize efforts and investments in research and development through the patent system. However, in the past years antitrust authorities found themselves in front of a tangled question: the strategic use of patents in order to unlawfully prolong the protection time and, by so doing, to exclude competitors from the market. The strategic use of patent portfolios and the rapid growth of Patent Assertion Entities represent a significant antitrust issue which needs to be investigated, especially following the Agreement on unitary patent and Unified Patent Court and the related deep changes in the European patent system in order to verify if such Agreement can be a useful tool against strategic and anti-competitive conducts.

Keywords: patents, antitrust, patent pool, R&D, competition, patent assertion entities.

Recepción: 31/01/2024

Aceptación: 27/02/2024

Cómo citar este trabajo: CAPPABIANCA, Pietro, “Patent portfolios and Patent Assertion Entities: antitrust issues and future perspective under the Unified Patent Court”, *Revista de Estudios Jurídicos y Criminológicos*, n.º 9, Universidad de Cádiz, 2024, pp. 387-408, DOI: <https://doi.org/10.25267/REJUCRIM.2024.i9.10>

Revista de Estudios Jurídicos y Criminológicos

ISSN-e: 2345-3456

N.º 9, enero-junio, pp. 387-408

Summary: 1. ABUSE OF LAW AND PATENT MISUSE DOCTRINE. HISTORICAL BACKGROUND. 2. PATENT PORTFOLIOS: ANTITRUST ISSUES AND SOLUTIONS. THE ROLE OF PATENT POOLING AGREEMENTS. 3. PATENT ASSERTION ENTITIES IN THE EU LAW. 4. UNIFIED PATENT COURT AND ITS IMPACT ON ANTITRUST EVALUATION OF PAES. 5. CONCLUSION. 6. BIBLIOGRAPHY.

1. ABUSE OF LAW AND PATENT MISUSE DOCTRINE. HISTORICAL BACKGROUND

Patent portfolios and multiplication of patent assertion entities (PAEs) are two topics intertwined both with the general theory of law and with antitrust law.

A careful analysis allows to state that said tools have an undeniable relevance for technological innovation¹ and scientific research since they appear to be monetization instruments for intellectual property rights.

At the same time, they can be wrongfully and unlawfully applied and, by so doing, they could result in an abuse of patent laws. Before examining the aforementioned instruments and their respective relevance and issues, it seems preliminarily necessary to investigate the theory of the abuse of law and of the abuse of patent law, in order to explore the main features and to understand if the latter is a mere specification of the former or whether it constitutes an autonomous figure.

The abuse of law is a general principle of the Italian and European law system² and it was the object of a wide scientific and jurisprudential discussion which led, through the years, to the extension of its scope of application.

From the general theory point of view, the main regulatory reference was found to be the Article 833 of the Italian Civil Code, which establishes the prohibition of emulative acts and, in the European legal framework, in the Article 54 of the Charter of Nice³. With a systematic interpretation, such prohibition was not exclusively referred to the property right but also to all the subjective rights with a patrimonial content⁴, including the patent protection of innovations, with the

1 See ENCAOUA, D., GUELLEC, D., MARTÍNEZ, C., *Sistemas de patentes para fomentar la innovación: lecciones de análisis económico* (https://www.researchgate.net/publication/241760570_Sistemas_de_patentes_para_fomentar_la_innovacion_Lecciones_de_analisis_economico consulta: 21/3/2024).

2 Even though there are opposing opinions in the scientific literature. For instance, PIRAINO F., *Il divieto di abuso del diritto*, in *Europa e diritto privato*, 1, 2013, p. 75-173.

3 Such article, which incorporates the provision of the Article 17 ECHR, states forth that the provisions of the Charter cannot be interpreted as if they allow activities or acts that undermine rights or freedoms granted by the same Charter or that impose stricter limitations than the ones included in the Charter.

4 CASCIONE, C. M., art. 833 c.c., in *Codice civile commentato (a cura di G. Bonillini, M. Confortini, C. Granelli)*, p. 3, (www.onelegale.it, consulta: 29.1.2024).

aim of identifying and sanctioning abusive and not-predetermined conducts⁵ to be identified with a case-by-case approach and with an interpretation of the law that takes into account the evolution of market strategies and technologies. Such conducts were indeed detected and sanctioned by antitrust authorities mainly –but not only– in the pharmaceutical market where originator industries –the ones that firstly commercialize new medicines– unlawfully attempt to extend and prolong the patent protection. The most common examples of such strategies comprehend the strategic use of Supplementary Protection Certificate or filing a divisional patent request to obstruct or delay the economic activity of generic medicine producers, aiming to the so-called patent evergreening⁶. This practice represents a use of the patent which completely diverges from its legal ratio which is certainly to exclude the entry of new competitors on the market or, by any means, to create an obstacle to their economic activities. However, such aim can only be pursued by using the objective superiority of a product and not by artificially closing the market with a strategic use of a right recognized by the legal framework and, by so doing, violating the principle of a competition based on the merits⁷.

In accordance with this consideration, the American juridical literature elaborated the patent misuse doctrine, with the purpose of analyzing and managing the unlawful utilization of patent protection.

The patent misuse doctrine was born as a direct derivation of the unclean hands principle⁸, according to which whoever takes legal action in order to protect his own right, shall not have his request granted in case any wrong doing is ascertained⁹. In different terms, said doctrine is an exception to the ordinary right of a patent holder to request (and obtain) injunctions towards infringers. The legal

5 SCUFFI, M., *Brevetti essenziali, abuso e condizioni FRAND, Il societario-focus 24th of January 2018*, p. 3.

6 Recently, the European Commission started an investigation on the Israeli pharmaceutical industry TEVA for misused patent procedures. In the official statement, it is stated that «after the original, basic patent expired, Teva artificially extended glatiramer acetate's basic patent protection by filing and withdrawing secondary patent applications, thereby forcing its competitors to file new lengthy legal challenges each time. This scheme is sometimes referred to as the "divisionals game". This is because the strategy implies filing so-called "divisional patents" which are patents derived from an earlier secondary patent and whose subject matter is already contained in the earlier patent. This artificially prolongs legal uncertainty to the benefit of the patent holder, and can effectively block or delay entry of generic or generic-like medicines» available at https://ec.europa.eu/commission/presscorner/detail/en/IP_22_6062. In the scientific literature, COLANGELO M., *Concorrenza e proprietà intellettuale nel settore farmaceutico in Europa dopo AstraZeneca*, *Giurisprudenza commerciale*, 4, 2013, p. 585; ZAGATO L., *TRIPs e diritti umani*, *AIDA*, 1, 2014, p. 252-253.

7 On such principle LIBERTINI, M., *Abuso del diritto e abuso di posizione dominante*, *Rivista di orizzonti del diritto commerciale*, 3, 2018, p. 11-12.

8 GIAMPAOLINO, C. F., *Misuse degli IP rights*, *AIDA*, 2013, p. 243.

9 MARZANO, P., *Diritto d'autore ed antitrust tra mercati concorrenziali e network economies*, *Rivista del diritto d'autore*, 1998, p. 431-432.

basis of such limitation is a use of the intellectual property right (IP right) contrary to the public interest¹⁰.

In light of this reconstruction, the judicial authority that finds an abuse of the patent right may have the discretionary power to deny compensatory damage or injunctive relief, factually suspending the patent's beneficial effects until the abusive conduct is eliminated¹¹.

The first application of the patent misuse doctrine goes back to the *Morton Salt Co. v. G.S. Suppiger Co.* case¹² where the owner of a company carried out a tying¹³ conduct by subordinating the grant of a license to the use of a product coming from a subsidiary company of the same owner. However, it remains unclear if the decision was based on antitrust law principles or on public policy objectives related to the patent issue and this is not the right context to analyze such debate, especially considering that the Supreme Court itself did not take a position.

That should demonstrate, according to a certain reconstruction, that the patent misuse doctrine should be considered to be outside competition law and the related means of protection¹⁴. It was noted that the US Supreme Court actually established the patent misuse doctrine in order to prevent an abusive use of patent law, without the need to prove a negative effect on the competition since patents cannot be properly considered a property right but a privilege granted in order to foster technological innovation¹⁵.

The following legislative measures for market protection in the USA, indeed, seem to confirm the convergence between antitrust law objectives and public policy aims (despite the yet relevant differences in purposes), especially if one takes into account the § 271 of Patent Act –dealing with patent infringement– and the Patent misuse reform Act of 1988, aimed to provide a rational guide for the application of the patent misuse doctrine, avoiding excessive and unnecessary limitation of IP rights.

The last legislative act, for instance, gave space to a new and different evaluation of lawfulness of some conducts, including tying conducts, until then considered a *per se* patent misuse and, moreover, negatively considered by the antitrust authority¹⁶.

10 BRINSON, J. D., *Patent misuse: time for a change*, in *Rutgers Computer & Technology Law Journal*, 16, 2, 1990, p. 357.

11 LIM, D., *Patent misuse and antitrust: rebirth or false dawn?*, in *Michigan Telecommunication And Technology Law Review*, 20, 2, 2014, p. 309.

12 *Morton Salt Co. v. G. S. Suppiger Co.* 314 U. S. 488, 1942, but also *Motion Pictures Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 1917.

13 Other forms of patent misuse were found in post-expiration royalties and in price-fix arrangements. *Va. Panel Corp. V. MAC Panel Co.*, 133 F.3d 860, 869 (Fed. Circ. 1997).

14 MAFFEI, T. F. *The patent misuse doctrine: a balance of patent rights and the public interest*, *Boston College Law Review*, 11, 1, 1969, p. 52.

15 LIM, D., *Op. cit.*, p. 318.

16 BURCHFIEL, K. J., *Patent misuse and antitrust reform: "Blessed be the tie?"*, *Harvard Journal of Law*

Such conclusion was based on the fact that, whenever the tying product was patented, it was unnecessary to demonstrate that its owner had a relevant market power, automatically inferable from the impossibility for the buyer to get the product anywhere else. Consequently, subordinating the availability of a patented product to the purchase of a different one resulted, according to the prevailing opinion, in a *per se* violation of antitrust law. Said automatism has been eliminated by the Patent misuse reform Act.

The IP right owner cannot be accused of patent misuse when he ties a patented product to another one, unless it can be demonstrated that such owner has a relevant market power for the patented product which can be taken into account for competition purposes. By so doing, the market power presumption in the evaluation of tying conducts was definitively abandoned.

Through the Patent misuse reform Act, the American legislator adopted a rule-of-reason based approach, requesting a case-by-case analysis in order to evaluate the presence of a IP right misuse.

So depicted, the patent misuse doctrine seems to be comparable to the abuse of law notion as developed by the Italian Supreme Court according to which there are four requisites to be fulfilled in order to evaluate the abuse of law: the ownership of a subjective right; the possibility that such right is asserted in many and not pre-determined ways; the assertion of such right, despite being respectful of the legal framework, with despicable ways; the fact that, due to the assertion of said right there is an unjustified disproportion between the advantages for owner of the right and the sacrifice requested to the counterpart¹⁷.

Nonetheless, these two notions remain different, even though it is not possible to omit the structural and functional similarities. Both reconstructions appear to be referred to an unlawful use of a right granted by the legal framework. However, the misuse doctrine does not require an emulative act, as in an act aimed at provoking a damage to the counterpart with no beneficial purpose to pursue, since, in fact, it constitutes a conduct with a positive effect for the owner himself. It is not to be ignored that apposing obstacles or removing economic competitors is deeply rooted in the competition itself, especially if enacted with a tool like a patent, naturally exclusionary¹⁸.

The objection that could be raised is that, from a formal point of view, there could not be a direct emulative act but the case of an indirect one cannot be excluded. In other words, while pursuing an advantage, the owner, by abusing of his own IP right, could indirectly cause a damage to the counterpart even though he could assert his right in different ways.

¹⁷ *& Technology*, 4, 1991, p. 1.

¹⁷ Italian Supreme Court, 3rd civil section, 18th of September 2009, n. 20106.

¹⁸ GHIDINI, G., CAVANI, G., PISERÀ, P. F., *Il caso Pfizer*, in *Rivista di diritto civile*, 6, 2015, p. 1578.

Independently of the assimilation of the patent misuse doctrine to the abuse of law, it emerges that in order to sanction an abuse of patent law the mere presence of a market power is not sufficient, but it is necessary to think of the protectable expectation of each citizen not to see a twisted use of a right recognized by the legal framework¹⁹.

The following paragraphs will deal with two fields where hypotheses of twisted use of patent right were detected: the patent portfolios and the Patent Assertion Entities (PAEs).

2. PATENT PORTFOLIOS: ANTITRUST ISSUES AND SOLUTIONS. THE ROLE OF PATENT POOLING AGREEMENTS

As for patent portfolios, it is to be stressed that the actual patent value, and the deriving market power, can be better understood if one considers them aggregated in a portfolio.

The so-called patent portfolios consist in an aggregation of relatable patentable invention under a joint control. Although the patent portfolios theory does not consider relevant the amount of patents aggregated in a single portfolio, such quantity does not seem to be completely insignificant. As for mutually related patents, the higher the number of aggregated patents, the higher the market power that their owner will be able to exert.

The advantages deriving from such tool are clear. First of all, there will be a bargaining power growth of the economic agent owning such portfolio when negotiating a cross-license agreement²⁰. Another beneficial effect that can be achieved is a reduction of litigation costs and of all the expenses necessary to obtain a license. Moreover, the global patent portfolio value could be used to explain what was defined as race to patent considering that the single patent economic value may be negligible or, sometimes, even negative²¹.

The main feature of patent portfolios is the relatedness since they are typically focused on a specific technological field unlike, for example, corporate stock portfolios where the feature of diversification is strongly advised and aimed at²².

19 GHIDINI, G., CAVANI, G., PISERÀ, P. F., *Op. cit.*, p. 1593.

20 For an analysis of cross-licensing agreements in Spain see SANCHEZ GARCÍA, L., *El fenómeno cross-licensing en el derecho español de patentes*, *Revista de Direito Brasileira*, 8, 2018, p. 141-154.

21 COLANGELO, G., *Il mercato dell'innovazione. Brevetti, Standard e Antitrust*, Giuffrè, Milano, *Quaderni di Giurisprudenza Commerciale*, Giuffrè, Milano, 2016, p. 14.

22 PARCHOMOVSKY, G., WAGNER, R. P., *Patent portfolios*, *University of Pennsylvania Law Review*, 154, 1, 2005, p. 30.

At the same time, there may be anti-competitive effects deriving from a incautious use of such instrument. Such danger pushed a certain doctrine to equate patent portfolios to securities and, by so doing, subjecting all transactions concerning patent portfolios to financial markets rules guaranteeing transparency, openness and efficiency²³.

The patent portfolios proliferation leads to a hold up risk, to the obstruction to innovation in the form of royalty stacking, and to the use of patent protection as a financial leverage.

The royalty stacking phenomenon happens whenever the development of a product requires, from the downstream producer, the utilization of more than one patented invention and, consequently, the royalties to be paid in order to use such inventions need to be calculated stacking all the royalties owed for licensing the patented inventions in order to commercialize his own product without risking an infringement action and with an amplifying effect on the total amount²⁴.

In the technological field for smartphone production the potential request for royalties can equate, or even exceed the cost of the single device features²⁵.

Therefore, there is the actual risk of an imposition of excessive prices and that could interfere with a correct and equal competition on the market by artificially excluding other competitors and, as a consequence, such risk justifies an intervention of the antitrust authorities.

Such considerations let understand all the issues related to strategic patenting conducts in respect of which, apart from antitrust authorities' intervention, other solutions have been presented, such as cross-licensing agreements, an in-depth study on the role of collective rights organizations, which allow a more efficient solution to the resource's fragmentation²⁶ and, particularly, patent pools.

With patent pooling agreements, IP rights owners appoint a third party, structured as a consortium with a common administrator, with the duty to manage said IP rights in order to negotiate them on the market with only one common license pooling the given patent portfolio²⁷.

23 RISCHE, M., *Patent portfolios as securities*, in 63 *Duke Law Journal*, 89, 2013, p. 154.

24 GALETOVIC, A., GUPTA, K., *Royalty stacking and Standard Essential Patents: theory and evidence from the World Mobile Wireless Industry*, 2 (https://www.law.northwestern.edu/research-faculty/clbe/events/innovation/documents/galetovic_royalty_stacking_060416_gg.pdf, consulta: 15/1/2024).

25 ARMSTRONG, A., MUELLER, J. J., SYRETT, T. D., *The Smartphone Royalty Stack: Surveying Royalty Demands for the Components Within Modern Smartphones*, 2014, 69 (in <https://ssrn.com/abstract=2443848>, consulta 15/1/2024).

26 MERGES, R. P., *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, *California Law Review*, 84, 1996, p. 1293.

27 COLANGELO, G., *Mercato e cooperazione tecnologica. I contratti di patent pooling*, *Quaderni di AIDA*, Giuffrè, Milano, 2008, p. 123-124.

On one side, there is a significant reduction of transaction costs since the administrator will have to sign only one agreement with the counterparties –creating a one-stop-shopping²⁸– and royalties ratio is previously established by the parties or, in case of disagreement, by an impartial arbitrator²⁹.

On the other side, the license agreement costs can be rationalized³⁰ and, consequently, potential litigation on royalties ratio can be reduced.

Nevertheless, by deferring to a third and independent party the decision on which patents shall be included in the pool, potential licensees can be reinsured on the actual essentiality of patents for the production on invention in the downstream market. Such benefits were even recognized by the US Patent and Trademark Office, with particular regard to biotechnological field where, moreover, there is a peculiar situation for consumers in general since, otherwise, there could be a limitation to the access to technologies often essential in order to protect the right to health³¹.

At the same time, there is a part of the literature which stresses the negative outcomes of patent pooling agreements³².

Patent stacking activity –especially with mutually competing patents– to be negotiated with a single license, may end in a price-fixing cartel with anti-competitive effects³³.

Another risk related to patent pooling agreements is the use of the grant-back clause, according to which the licensee agrees to let the licensor use the implementations made by the licensee himself to the patented technology. In this first form, such clause does not seem to be unlawful but, on a more careful analysis, it may turn to have anti-competitive effects if referred to improvements not related to the patented technology given under license³⁴.

28 US Department of Justice, Federal Trade Commission, *Antitrust enforcement and Intellectual property rights: Promoting Innovation and Competition*, 2007, p. 65.

29 LAYNE-FARRAR, A., LLOBET, G., *To Join Or Not To Join: Examining Patent Pool Participation and Rent Sharing Rules*, *International Journal of Industrial Organization*, 29, 2011, p. 294.

30 COLANGELO, G., *Il mercato dell'innovazione, cit.*, p. 87-88.

31 US Patent and Trademark Office, *Patent pools: a solution to the problem of accessing in biotechnologies patents?*, available at <http://www.uspto.gov/web/offices/pac/dapp/opla/patentpool.pdf>. About *patent pools* as an instrument to foster the access to life-saver drugs BURRONE, E., GOTHAM, D., GREY, A., DE JOONCHEERE, K., MAGRINI, N., MARTEI, Y. M., GORE, C., KIENY, M. P., *Patent pooling to increase access to essential medicines*, in *Bulletin of World Health Organization*, 97, 2019, p. 575-577.

32 COLANGELO, G., *Gli accordi di patent pooling: un'analisi comparata della regolamentazione anti-trust*, *Il diritto industriale*, 1, 2009, p. 58.

33 NELSON, P. B., *Patent pools: An Economic assessment of Current Law and Policy*, *Rutgers Law Journal*, 38, 2007, p. 539.

34 US Department of Justice, Federal Trade Commission, *Antitrust enforcement and Intellectual property rights: Promoting Innovation and Competition*, 2007, p. 80.

The abovementioned arguments show both pro and anti-competitive effects and require the evaluation of patent pools based on a case-by-case analysis and on the effects that the single operation may have on the market, taking into account the content of the agreement and the aim pursued with such contract.

The technological pool relevance in the current market is also underlined by the European Commission Guidelines on technology transfer agreements³⁵, published in 2014. In the evaluation of a patent pool pro and anti-competitive effects, the Commission shall take into account multiple factors, among which, for instance, the openness of the procedure to create a pool³⁶ or, still, the nature of technologies conferred to a pool. In this second case, there shall be a distinction between substitutive technologies –which would allow higher royalties as a remuneration since the licensees will not face the rivalry between such technologies– and complementary technologies where establishing excessively high royalties would end in a decrease in demand for the aforementioned technologies³⁷.

3. PATENT ASSERTION ENTITIES IN THE EU LAW

As for the use of patent protection as a financial leverage, the reference is to the so-called Patent Assertion Entities (PAEs), those juridical subjects that do not produce goods to sell on the market but purchase, manage and assert patent portfolios³⁸.

It is necessary to better analyze this tool in order to understand risks and benefits for the competition on the European market and then to consider the impact of the institution of the Unified Patent Court on their activity.

Patent Assertion Entities are a species of the genre Non-Practicing Entities (NPEs), or juridical subjects which own patents but do not produce goods or services. The NPEs notion is wide and it includes different entities, from universities to bankrupt companies³⁹.

Moreover, PAEs do not represent a unitary phenomenon. In fact, they can be divided in different categories. There is the distinction between “pure PAEs” and “hybrid PAEs”. In the first case, PAEs acquire patents from different sources and generate

35 Communication from the Commission, *Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements (2014/c 89/03)*, available at [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0328\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0328(01)).

36 *Ibid.*, point 249.

37 *Ibid.*, point 253.

38 In brief, PAE acquires patents [...] from research companies, operating companies, or individual inventors and monetizes those patents by collecting royalties from anyone it finds practicing one of the patents without a license». WRIGHT, J. D., GINSBURG, D. H., Patent assertion entities and antitrust: a competition cure for a litigation disease?, *Antitrust Law Journal*, 79, 2, 2014, p. 501.

39 RISCH, M., Patent troll myths, *Sethon Hall Law Review*, 42, 2010, p. 457.

revenues by asserting the descending rights. In the second case, instead, patents are acquired from still operating undertakings with which a commercial relationship is kept in the phase following the acquisition, generally through agreements that include sharing revenues and, sometimes, PAEs commitment to target competitor undertakings in the downstream market in case of legal action⁴⁰.

The analysis of pro and anti-competitive effects of such legal entities demands a preliminary consideration.

Deciding to license a patented technology to third parties is a prerogative of the IP right owner. Consequently, to entrust the management of licensing patented inventions to a different subject cannot be considered a *per se* unlawful activity. Nonetheless, such activity was investigated by US antitrust authority because of both its impact on patent litigation⁴¹ and of the possibility to use antitrust law in order to repress abusive conducts⁴² that could interfere with innovation and technology development.

So, it is clear what the consequences of that phenomenon on the patent system are even though, at least currently, it seems to have lighter impact on the EU than on the USA⁴³. Nonetheless, it is to be stressed that such patents aggregation system may have pro-competitive effects. First of all, by centralizing patent management in only one entity, an economy of scale and of experience can be created, guaranteeing an adequate valorization of such intangible assets⁴⁴. PAEs, indeed, can have a beneficial effect on market liquidity, fostering investments in research and development⁴⁵ since they provide potential investors with protection and capitalization tools for IP rights⁴⁶ and, at the same time, they are an opportunity for universities, small and medium enterprises and other research entities giving them the chance to monetize

⁴⁰ SCOTT MORTON, F. C., SHAPIRO, C., *Strategic patent acquisitions*, *Antitrust Law Journal*, 2, 2014, p. 463-499.

⁴¹ COTROPIA, C. A., KESAN, J. P., SCHWARTS, D. L., *Unpacking Patent Assertion Entities*, in *Minnesota Law Review*, 2, 99, 2014, p. 655.

⁴² It is sufficient to think that the America Invents Act of 2011 tried to put an obstacle to the creation of new PAEs with a modification of procedural rules for patent litigation. In particular, the most incisive intervention concerned joinders. PAEs were forced to begin many different trials if they intended to file a complaint for patent infringement towards a plurality of parties mutually independent.

⁴³ Sokol D., *Patent Assertion Entities in Europe*, 2015 (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2689350 consulta: 15/12/2023). For the reasons concerning the different impact on EU and US economy FABBIO, P., *La proporzionalità dell'inibitoria per violazione dei diritti di proprietà intellettuale*, *Diritto industriale*, 2, 2021, p. 79.

⁴⁴ MORO VISCONTI, R., *Le Royalty Companies*, *Il diritto industriale*, 5, 2011, p. 413.

⁴⁵ As for the importance of research and development in pharmaceutical market see United States Court of Appeal, Third Circuit, 11th of July 1980, *Eli Lilly & Company v. Premo Pharmaceutical Laboratories Inc.*

⁴⁶ THUMM, N., *The good, the bad and the ugly-the future of patent assertion entities in Europe*, *Technology Analysis & Strategic Management*, 30, 9, 2018, p. 1047.

their IP rights⁴⁷. Furthermore, PAEs show chances of procedural facilitation for said subjects (especially for small and medium enterprises) providing them with help to face potential patent litigation. That is because the business model adopted by many PAEs is based on activities aimed to improve intellectual property assets value and, by so doing, fostering incentives to innovate⁴⁸.

On the other hand, negative opinions on PAEs were raised.

PAEs detractors did not hesitate to define such entities as «patent trolls»⁴⁹ since they could be a «harmful predator»⁵⁰ leading to the risk of speculative activities, such as the preclusion of access to new technologies due to extremely high licensing costs, disproportionate if compared to the real technology value.

Furthermore, PAEs are subjected to less limits than undertakings operating on the market when it comes to patent monetization and, for this reason, they could be further inclined to more aggressive procedural and negotiation strategies since they do not have a product to protect and, consequently, they would not be exposed to counterclaims risk⁵¹.

In addition, PAEs would not be exposed to the reputational risk bound to procedural litigiousness which, on the contrary, undertakings must take into account, especially in a long-period perspective for commercial agreements, and that would make them desirable to patent owners as instruments of monetization⁵².

Although the PAEs phenomenon is relatively more recent in Europe than in the USA, it has shown to have a relevant impact, as demonstrated by empirical studies carried out on German and British patent system⁵³.

Consequently, due to this reason and to the potential of PAEs' anti-competitive effects, it is necessary to investigate if, and to what extent, an antitrust authority intervention can limit such negative effects, adhering to a point of view that does not *a priori* close to PAEs in light of the positive externalities on the patent market.

47 For an analysis of IP rights enforcement see VENEGAS, V. B., *Intellectual property rights, enforcement costs and EU competition law*, in *Journal of Antitrust Enforcement*, 11, 2023, p. 38-56.

48 *European Economics, Patent Assertion Entities in Europe*; Eds: Nikolaus Thumm, Garry Gabison (Joint Research Centre), EUR 28145 E, p. 37.

49 LUMAN III, J. F., DODSON, C. L., *No longer a myth, the emergence of the patent troll: stifling innovation, increasing litigation and extorting billions*, *Intellectual Property & Technology Law Journal*, 18, 5, 2006, p. 12-16.

50 NIKOLIC, I., *Are patent assertion entities a threat to Europe?*, *Journal of Intellectual Property Law & Practice*, 19, 6, 2019, p. 477.

51 SCOTT MORTON, F. C., SHAPIRO, C., *op. cit.*, p. 487.

52 POPOFSKY, M. S., *Patent Assertion Entities and Antitrust: Operating Company Patent Transfers*, 2013, 4 (www.antitrustsource.com, last seen 29/1/2024).

53 LOVE, B. J., *Patent assertion entities in Europe*, in *Patent assertion entities and competition policy*, Cambridge University Press, Cambridge, 2017, p. 104.

First of all, one must remember that CJEU is firmly convinced that the right to exclusive economic utilization of the invention does not allocate the owner outside the antitrust law scope of application⁵⁴ if the conducts carried out by the owner himself, even though lawful for another legal field, may have negative externalities on competition and on the market. In more than one occasion, it was necessary to refer to the Court of Justice in order to end anti-competitive conducts concerning IP rights⁵⁵.

There would be no reason not to use EU law in order to let PAEs operate in a regulated way. EU law has, indeed, at least abstractly, three instruments to face anti-competitive effects by PAEs.

Firstly, the provision by Article 101 TFEU⁵⁶ is to be considered. Licensing agreements made by PAEs, especially if considered in the “pure” form (with no connection with the companies they purchased patents from), do not have more restrictive effects than other agreements of the same species concluded by other market operators. On the contrary, because of the fact that that such PAEs are not in direct competition with the licensees, it is less likely that such agreements contain provisions restricting competition such as the ones included in Regulation (EU) 316/2014 (Technology Transfer Block Exemption Regulation, TTBER). More precisely, the Article 4 TTBER provides that the exemption to the application of Art. 101, first paragraph, for technology transfer agreements does not apply to cases where undertakings –in a direct competition relationship– sign an agreement which contains clauses regarding, for example, market partition or the restriction for one of the parties to determine prices when selling products to third parties.

If, on one side, it is true that license agreements made by a pure PAE are not *ex se* able to restrict the competition, it is equally true that, in order to correctly evaluate them, it is necessary to investigate the single case in order to verify if such agreements violate TTBER provisions and if they may benefit from the exemption provided by Article 101, third paragraph TFEU.

As for the Article 102 TFEU, this might be relevant to fight another anti-competitive feature of PAEs’ activity. More specifically, since PAEs are not exposed to counter-claims risk –because they do not have an actual interest to the defense of the IP right– there is the risk that they might use their privileged position to impose an

54 Court of Justice of European Union, case C-457/10 P, *AstraZeneca c. Commissione UE*, 2012, par. 62.

55 As instance, CJEU, joint cases C-241/91 e C-242/91, *RTE and ITP v. Commission* (c.d. Magill); CGUE, case C-418/01, *IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co.* On the latter case, in the scientific literature, see COLANGELO, G., *Il caso IMS, Mercato Concorrenza Regole*, 2, 2004, p. 407-412.

56 Article 101 prohibits as incompatible with internal market all agreements between undertakings, decision by association of undertakings and concerted practices which may affect trade between Member States and which have as object or effect the prevention, restriction or distortion of competition within the internal market, exception made for the provision of the third paragraph.

excessively high royalty rate to use their patents. The issue arises when alternative technologies are not available on the market. In such case it is necessary to scrutinize such conducts under the Article 102 TFEU in order to evaluate its reasonableness as an abuse of dominant position.

However, the procedure provided by Article 102 TFEU can be used only when a market operator is found to be in a dominant position but the mere detention of an IP right (and of its exclusive utilization right) does not automatically imply a dominant position, as firmly stated by CJEU⁵⁷.

Furthermore, there is a fundamental distinction when it comes to royalties' reasonableness between a standard essential patent (SEP) or an ordinary patent.

In case of non-essential patents, investigating if the royalty rate is reasonable or not may be irrelevant because the freedom of contract would prevail. Said freedom includes even the power to exclude competitors from the access to the patented technology or, if it is decided to license such invention, to demand the amount considered suitable⁵⁸.

On the contrary, in case of SEPs, the issue requires a more careful approach, especially if they are encumbered with a fair, reasonable and non-discriminatory (FRAND) commitment which revolves around the reasonableness of the licensing conditions.

SEPs are patents whose technology is essential to the production of devices that must be compliant to commonly approved operative technical standards. Such standards may be the result of the usual industrial procedures (*de facto* standards) or of the law provision (*de jure* standards)⁵⁹. Therefore, since the owner of such patent is able to condition –even abusively– the access to market, the solution adopted at European level is to impose to SEPs owners to commit themselves irrevocably towards Standard Setting Organizations (SSOs), whose role is to provide the needed coordination to pursue the necessary interoperability in the industrial field, the reduction of transaction cost and the implementation of international trade⁶⁰.

In light of that, policies concerning IP rights adopted by such organizations push SEPs owners to disclose each patent considered essential to the production of a certain technology and to license such patents at FRAND conditions⁶¹.

57 TURNER, J. D. C., *Intellectual property and EU competition law*, Oxford University Press, Oxford, 2015, p. 126.

58 GERADIN, D., *Patent Assertion Entities and EU competition law*, in *Journal of Competition Law & Economics*, 15, 2-3, 2020, p. 216.

59 SCUFFI, M., *op. cit.*, p. 6.

60 SPULBER, D. F., *Standard Setting Organization and Standard Essential Patents: voting and markets*, *The Economic Journal*, 129, 2018, p. 1478.

61 GHIDINI, G., TRABUCCO, G., *Il calcolo dei diritti di licenza in regime FRAND: tre criteri concorrenziali di ragionevolezza*, in *Rivista di orizzonti del diritto commerciale*, 1, 2017, p. 3-4; GERADIN, D., *Standardization and technological innovation: some reflection on ex-ante licensing, FRAND and the proper means to reward innovators*, *Tilec Discussion Papers*, 17, 2006, p. 4-5.

If a SEP is transferred to a PAE, one of the first strategies carried out in order to obtain unreasonable royalties⁶² may be to ignore the FRAND commitment of the original owner. As a different entity, PAE could consider itself not bound by the original commitment.

Such issue was solved both on an institutional level, thanks to the European Commission intervention, and on a policy level within the single SSOs.

More specifically, the Commission established that even in case of a SEP transferring, the new owner is still bound by the FRAND commitment pertaining the previous owner since, otherwise, the SSOs' pro-competitive effects would be deleted⁶³. On a regulatory level, such issue was dealt with by IPR policies provided by SSOs.

For instance, Article 6.1 of the European Telecommunications Standard Institute (ETSI) policy states that, in case of transferring of a SEP encumbered with a FRAND commitment, the latter will automatically be transferred as well.

In order to correctly define the scope of application of Article 102 TFEU, one must not fall in the temptation of automatically equating the ownership of a SEP to the situation of dominant position. More in detail, given that the two situations do not necessarily coincide, according to a part of the literature, there are two circumstances to be considered before measuring the market power conferred by a SEP and, if necessary, applying Article 102. On the one hand, the essentiality of the standard will need to be proven by demonstrating that the compatibility of a product with a certain technology is a necessary condition in order to place it on the market or it can be competitive on it; on the other hand, proof should be given that the IP right is really necessary to implement a certain standard⁶⁴.

Conclusively, as for the third tool from the European law, according to what is provided in terms of concentrations between undertakings for the application of Regulation (EU) 2004/139, it is necessary that such undertakings reach the EU threshold (Article 1, third paragraph and Article 2). In other words, it is about verifying if patent portfolios acquisition may fall under the scope of application of Regulation (EU) 2004/139 depending on whether it can create a significant risk of market distortion. However, it is very hard for a PAE to fall under the application of such discipline because generally they place themselves under the threshold of application of the aforementioned Regulation. Currently, the Commission does not

62 DEWATRIPONT, M., LEGROS, P., 'Essential' patents, FRAND royalties and technological standards, *The Journal of Industrial Economy*, 4, 2013, p. 914.

63 *Commission welcomes IPRCom's public FRAND declaration*, 12th of December 2009, Memo/09/549 in https://ec.europa.eu/commission/presscorner/detail/en/MEMO_09_549 where it is written that «The unrestricted access to the underlying proprietary technology on FRAND terms for all third parties safeguards the pro-competitive economic effects of standard setting. Such effects could be eliminated if, as a result of a transfer of patents essential to a standard, the FRAND commitment would no longer apply».

64 AREZZO, E., *Brevetti essenziali, dominanza e abuso nel settore delle information & communication technologies*, *Giurisprudenza commerciale*, 5, 2019, p. 926.

appear to have received notification of such transactions⁶⁵. That does not exclude that said transactions may be investigated in light of the Member States' internal rules concerning concentrations.

4. UNIFIED PATENT COURT AND ITS IMPACT ON ANTITRUST EVALUATION OF PAES

The 1st of June 2023 the Agreement on a Unified Patent Court (UPC)⁶⁶ came into force and both the Court and the unitary effects patent were put into operation. The UPC consists in a supra-national court whose competence is to deal with European patents validity and infringement issues for the adhering States (currently, seventeen of the Member States signed the agreement).

Scientific literature shared a positive opinion on the benefits deriving from the unification of patents and its jurisdictional protection on the European area both for reducing costs and easing jurisdictional protection. With a single action it will be possible to file and obtain protective remedies with effectiveness extended to all the adhering States⁶⁷.

At the same time, such situation could hide problematic points. It was highlighted that the patent and Court unitarity could be the base to facilitate abusive conducts from PAEs. More specifically, the foreseen risk is that such entities could exploit, with antitrust consequences, some procedural rules to gain an anti-competitive advantage and, by so doing, undermining the «European patent ecosystem»⁶⁸. For example, the focus was put on the dangerous impact that strategic behaviors may have on complex products' markets, meaning the products obtained by assembling and combining more than one feature, all of which protected by a patent. Indeed, the possibility that a PAE may automatically obtain an injunctive relief for an alleged infringement even of only one patent –protecting, for example, a trivial feature of the invention– may result in a paralysis of the productive system, with the following financial loss and, secondly, it would grant an artificial leverage power based not on objective superiority reasons but merely on the threat of judicial actions⁶⁹.

65 GERADIN, D., *op. cit.*, p. 211-212.

66 Agreement on a Unified Patent Court 2013/C 175/01 available at [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:42013A0620\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:42013A0620(01)).

67 GALLI, C., *Il tribunale europeo dei brevetti e il brevetto unitario tra opportunità, nuove sfide e occasioni mancate*, *Il diritto industriale*, 3, 2023, p. 174.

68 *Intellectual Property to Innovate, Promoting a robust, balanced and flexible European patent ecosystem to prevent abusive patent practices of patent assertion entities*, 4th of April 2017, p.1-2.

69 *Ibid.*, p. 3. On strategic use of judicial action and its consequences see MUSELLI, A., *Brevetti essenziali e antitrust: false FRAND or true enemy?* *Commento alle decisioni Motorola e Samsung*, in *Concorrenza e Mercato*, 1, 2015, p. 525-532.

Upon more careful examination, the less significant spread of PAEs on European market was due to the fragmentation of Member States' patent markets. In other words, said fragmentation implied that the patent enforcement from a PAE required to start a different trial for each State where the IP right was to be protected.

Market fragmentation is an issue that will no longer involve the Member States adhering to the Agreement on the unitary patent which will allow, from now on, to involve only one Court for patent protection. PAEs will benefit from such situation too.

Reading the Agreement allows to spot mechanisms that may be sufficient to avoid anti-competitive risks from PAEs activity and that revolve around a strengthening of judicial discretion.

First of all, a general principle is expressed in Article 42 that states that the Court shall ensure an equitable application of substantial and procedural rules as not to create a damage to competition.

Article 62, at the first paragraph states that the Court may grant injunctions against the alleged infringer intended to prevent any imminent infringement –or to suspend any ongoing violations– of the IP right or, at least, allow its continuation under the lodging of an appropriate guarantee intended to ensure the compensation of the right holder.

It can be deduced that the grant of such injunctions is not automatic but it is subordinated to Court discretion⁷⁰. The second paragraph of Article 62 highlights the Court's discretion to consider the parties' interests and potential damages deriving from granting (or refusing to grant) an injunctive relief. Such provision is further completed by the fourth paragraph of the same Article where it is said that the plaintiff must provide reasonable proof of the ownership of the IP right and the effectivity of its violation.

Finally, the analogous application of the Article 60 parr. fifth to ninth, included in paragraph fifth, stresses the importance of the adversarial principle when an injunctive relief is issued *inaudita altera parte* for emergency reasons. In the aforementioned case, upon the defendant's request –who has the right to be informed about the issuance of the injunction– a re-examination procedure could be initiated and the defendant will be able to exercise their right to be heard. At the end of the procedure, the Court may adopt a decision which confirms, revokes or modifies the injunctive relief.

In order to provide a further instrument to prevent strategic behaviors by PAEs, Article 68 gives rule about damage compensation. The Agreement incorporates a principle of "damage indifference" (very similarly to what happens in the Italian legal framework). It states that the damaged who is granted compensation must be placed in the same condition they would be if the unlawful conduct did not happen.

70 By so doing, the European legislator followed the same path of Directive 2004/28/CE (Article 11).

At the first paragraph of Article 68 there is a prohibition of punitive damages. The choice is appreciated because one of the reasons why the US legal system fostered PAEs' strategic behaviors is the higher quantity of money granted as a damage compensation in patent litigation, decided, moreover, by juries that are not composed by patent experts⁷¹.

The third paragraph of Article 68 provides two alternative quantification criteria. Principally, damage will be quantified by taking into account both the negative consequences deriving from the infringement, including the lost income of the damaged party, and the unlawful benefits for the infringer. In the Court evaluation other elements could be taken in consideration, such as, for example, the moral damage caused (letter a). Alternatively, the Court could opt for a lump sum criterium which, however, should comprehend the amount that the infringer should have paid if he had tried to obtain a license to use the patented product (letter b).

Such last criterium, although it seems to aim to a procedural simplification if the letter a) solution is not easily practicable, has at least two critical sides.

Letter b) allows the use of a lump sum criterium in all the appropriate cases. Precisely since it is a secondary way to be used in exceptional cases, it would have been appropriate to provide an at least illustrative list of applications of such criteria. Secondly, the reference to the amount that should have been due to obtain a license is generic and recalls the issue of the fair quantification of licensing fees, especially when dealing with standard essential patents⁷² and it will surely require an evaluation made by a third party for an equitable and fair quantification.

In conclusion, the system provided by the Agreements certainly gives useful tools to fight strategic behaviors from PAEs. At the moment, however, it is still too early to evaluate the impact of such reform on PAEs activity and only a further analysis of patent litigation on medium-long term will give a more accurate answer on the system's capacity to react to anti-competitive conducts by such entities.

5. CONCLUSION

In light of the abovementioned arguments, it is possible to affirm that tools like patent portfolios and PAEs should be investigated with a broad and case-by-case point of view. It would be excessively limiting to prevent PAEs from operating in the European market since, as it was showed above, they can have positive externalities, especially for small and medium enterprises and research centers as ways to monetize intellectual property rights.

⁷¹ NIKOLIC, I., *op. cit.*, p. 482.

⁷² OSTI, C., Il caso Huawei: ancora sul diritto della concorrenza come clausola generale del diritto civile, in *Rivista di Orizzonti del Diritto Commerciale*, 1, 2017, p. 11-13.

However, European and Member States' authorities shall take into account the anti-competitive consequences that PAEs could bring, especially considering the limited reputational risk they would face. Nonetheless, it has been showed that European legal framework has valuable tools to prevent PAEs from using their position to create anti-competitive effects by taking advantages of the market fragmentation.

In particular, the entry into force of the Agreement on Unified Patent Court (UPC), as one of the pillars of the cooperation between Member States for establishing a unitary patent discipline, with its provisions can provide a way to prevent strategic behaviors with a strengthening of judicial discretion that will allow judges composing the UPC –with effects on the adhering Member States– to evaluate all the circumstances of the cases presented adequately considering the peculiarities of the situation. As such, any other argument shall wait the rulings of the UPC in order to evaluate the effects of the Agreement on the market.

6. BIBLIOGRAPHY

- AREZZO, E., *Brevetti essenziali, dominanza e abuso nel settore delle information & communication technologies*, *Giurisprudenza commerciale*, 5, 2019.
- ARMSTRONG, A., MUELLER, J.J., SYRETT, T.D., *The Smartphone Royalty Stack: Surveying Royalty Demands for the Components Within Modern Smartphones*, 2014, 69 (in <https://ssrn.com/abstract=2443848>, consulta 15.1.2024).
- BRINSON, J. D., *Patent misuse: time for a change*, in *Rutgers Computer & Technology Law Journal*, 16, 2, 1990.
- BURCHFIEL, K. J., *Patent misuse and antitrust reform: "Blessed be the tie?"*, *Harvard Journal of Law & Technology*, 4, 1991.
- BURRONE, E., GOTHAM, D., GREY, A., DE JOONCHEERE, K., MAGRINI, N., MARTEI, Y. M., GORE, C., KIENY, M. P., *Patent pooling to increase access to essential medicines*, in *Bulletin of World Health Organization*, 97, 2019.
- CASCIONE, C. M., *Art. 833 c.c.*, in *Codice civile commentato (a cura di G. Bonillini, M. Confortini, C. Granelli)*, p. 3, (www.onelegale.it, consulta: 29.1.2024).
- COLANGELO M., *Concorrenza e proprietà intellettuale nel settore farmaceutico in Europa dopo AstraZeneca*, *Giurisprudenza commerciale*, 4, 2013.
- COLANGELO, G., *Gli accordi di patent pooling: un'analisi comparata della regolamentazione antitrust*, *Il diritto industriale*, 1, 2009.
- COLANGELO, G., *Il caso IMS*, *Mercato Concorrenza Regole*, 2, 2004.
- COLANGELO, G., *Il mercato dell'innovazione. Brevetti, Standard e Antitrust*, Milano, *Quaderni di Giurisprudenza Commerciale*, Giuffrè, Milano, 2016.

- COLANGELO, G., *Mercato e cooperazione tecnologica. I contratti di patent pooling*, *Quaderni di AIDA*, Milano, 2008.
- COTROPIA, C. A., KESAN, J. P., SCHWARTS, D. L., *Unpacking Patent Assertion Entities*, in *Minnesota Law Review*, 2, 99, 2014.
- DEWATRIPONT, M., LEGROS, P., 'Essential' patents, FRAND royalties and technological standards, *The Journal of Industrial Economy*, 4, 2013.
- FABBIO, P., *La proporzionalità dell'inibitoria per violazione dei diritti di proprietà intellettuale*, *Diritto industriale*, 2, 2021.
- GALETOVIC, A., GUPTA, K., *Royalty stacking and Standard Essential Patents: theory and evidence from the World Mobile Wireless Industry*, 2 (https://www.law.northwestern.edu/research-faculty/clbe/events/innovation/documents/galetovic_royalty_stacking_060416_gg.pdf, consulta: 15.1.2024).
- GALLI, C., *Il tribunale europeo dei brevetti e il brevetto unitario tra opportunità, nuove sfide e occasioni mancate*, *Il diritto industriale*, 3, 2023.
- GERADIN, D., *Patent Assertion Entities and EU competition law*, in *Journal of Competition Law & Economics*, 15, 2-3, 2020.
- GERADIN, D., *Standardization and technological innovation: some reflection on ex-ante licensing*, *FRAND and the proper means to reward innovators*, *Tilec Discussion Papers*, 17, 2006.
- GHIDINI, G., CAVANI, G., PISERÀ, P. F., *Il caso Pfizer*, in *Rivista di diritto civile*, 6, 2015.
- GHIDINI, G., TRABUCCO, G., *Il calcolo dei diritti di licenza in regime FRAND: tre criteri pro-concorrenziali di ragionevolezza*, in *Rivista di orizzonti del diritto commerciale*, 1, 2017.
- GIAMPAOLINO, C. F., *Misuse degli IP rights*, *AIDA*, 2013.
- LAYNE-FARRAR, A., LLOBET, G., *To Join Or Not To Join: Examining Patent Pool Participation and Rent Sharing Rules*, *International Journal of Industrial Organization*, 29, 2011.
- LIBERTINI, M., *Abuso del diritto e abuso di posizione dominante*, *Rivista di orizzonti del diritto commerciale*, 3, 2018.
- LIM, D., *Patent misuse and antitrust: rebirth or false dawn?*, in *Michigan Telecommunication And Technology Law Review*, 20, 2, 2014.
- LOVE, B. J., *Patent assertion entities in Europe*, in *Patent assertion entities and competition policy*, Cambridge, 2017, p. 104.
- LUMAN III, J. F., DODSON, C. L., *No longer a myth, the emergence of the patent troll: stifling innovation, increasing litigation and extorting billions*, *Intellectual Property & Technology Law Journal*, 18, 5, 2006.

- MAFFEI, T. F. *The patent misuse doctrine: a balance of patent rights and the public interest*, *Boston College Law Review*, 11, 1, 1969.
- MARZANO, P., *Diritto d'autore ed antitrust tra mercati concorrenziali e network economies*, *Rivista del diritto d'autore*, 1998.
- MERGES, R. P., *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, *California Law Review*, 84, 1996.
- MORO VISCONTI, R., *Le Royalty Companies*, *Il diritto industriale*, 5, 2011.
- MUSELLI, A., *Brevetti essenziali e antitrust: false FRAND or true enemy? Commento alle decisioni Motorola e Samsung*, in *Concorrenza e Mercato*, 1, 2015.
- NELSON, P. B., *Patent pools: An Economic assessment of Current Law and Policy*, *Rutgers Law Journal*, 38, 2007.
- NIKOLIC, I., *Are patent assertion entities a threat to Europe?*, *Journal of Intellectual Property Law & Practice*, 19, 6, 2019.
- OSTI, C., *Il caso Huawei: ancora sul diritto della concorrenza come clausola generale del diritto civile*, in *Rivista di Orizzonti del Diritto Commerciale*, 1, 2017.
- PARCHOMOVSKY, G., WAGNER, R. P., *Patent portfolios*, in *University of Pennsylvania Law Review*, 154, 1, 2005.
- PIRAINO F., *Il divieto di abuso del diritto*, in *Europa e diritto privato*, 1, 2013.
- POPOFSKY, M. S., *Patent Assertion Entities and Antitrust: Operating Company Patent Transfers*, 2013, 4 (www.antitrustsource.com, last seen 29/1/2024).
- RISCH, M., *Patent portfolios as securities*, in *63 Duke Law Journal*, 89, 2013.
- RISCH, M., *Patent troll myths*, *Sethon Hall Law Review*, 42, 2010.
- SANCHEZ GARCÍA, L., *El fenómeno cross-licensing en el derecho español de patentes*, *Revista de Direito Brasileira*, 8, 2018.
- SCOTT MORTON, F. C., SHAPIRO, C., *Strategic patent acquisitions*, *Antitrust Law Journal*, 2, 2014.
- SCUFFI, M., *Brevetti essenziali, abuso e condizioni FRAND*, *Il societario-focus 24th of January 2018*.
- SOKOL D., *Patent Assertion Entities in Europe*, 2015 (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2689350 consulta: 15/12/2023).
- SPULBER, D. F., *Standard Setting Organization and Standard Essential Patents: voting and markets*, *The Economic Journal*, 129, 2018.
- THUMM, N., *The good, the bad and the ugly – the future of patent assertion entities in Europe*, *Technology Analysis & Strategic Management*, 30, 9, 2018.
- TURNER, J. D. C., *Intellectual property and EU competition law*, Oxford University Press, Oxford, 2015.

VENEGAS, V. B., *Intellectual property rights, enforcement costs and EU competition law*, in *Journal of Antitrust Enforcement*, 11, 2023.

WRIGHT, J. D., GINSBURG, D. H., *Patent assertion entities and antitrust: a competition cure for a litigation disease?*, *Antitrust Law Journal*, 79, 2, 2014.

ZAGATO L., *TRIPs e diritti umani*, *AIDA*, 1, 2014.