

# Are Patent Assertion Entities a Threat to Europe?

Igor Nikolic\*

## Summary:

This article (an updated version of a 2018 paper) analyses Patent Assertion Entities (PAEs) to determine whether they are a threat to Europe. It takes into account recent developments related to PAEs, such as legislative changes, relevant case-law, academic literature and studies, and assesses whether the conclusions reached in 2018 still stand the test of time. They do.

While there is no consensus on the concept of PAEs, they are frequently defined as companies that are solely or primarily active to acquire patents from others and license them to third parties. PAEs have no product business of their own, and do not manufacture, distribute, or sell products. PAEs have often been said to engage in opportunistic patent litigation and impose excessive licensing costs on manufacturing companies. During the last decade it has been repeatedly suggested that PAEs are on the rise in Europe and that PAE litigation may have negative consequences for Europe's innovativeness.

However, upon closer analysis, PAEs are a complex phenomenon and litigation involving PAEs should not be considered *per se* bad. They are in the legitimate business of patent licensing and use different business strategies in monetising their patent portfolios. In past studies, only one type of PAEs was identified in potentially engaging in opportunistic litigation by bringing nuisance suits, called Litigation PAEs. Other PAE business models, however, may play a beneficial role in the market as intermediaries between technology developers and users and ensure liquidity in patent markets. Thus, labelling *all* PAEs as harmful predators is factually incorrect.

Moreover, PAEs do not have greater incentives to engage in abusive litigation than practising companies. If anything, practising companies might have strategic motives to harm their competitors in patent litigation and are more likely to obtain an injunction than PAEs. Whether the patent litigation is abusive depends on the facts of the case, and not whether the patent holder practices the patent or not. Furthermore, as this paper will show, the concern that small-medium sized enterprises (SMEs) would be negatively impacted is also unfounded, since European SMEs are not the primary targets of PAE assertions, and even benefit from the presence of certain types of PAEs.

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\*Research Fellow, European University Institute, Florence, igor.nikolic@eui.eu.

There is also no empirical evidence to support the conclusion that PAEs are becoming a problem in Europe. The available data actually shows that PAEs, as a whole, are responsible for a very small amount of patent litigation in Europe and that the majority of patent litigation is between practising entities. We also do not have relevant data about the presence of harmful Litigation PAEs in Europe from all other PAE cases, which would be interesting to observe in future studies.

Different market-based solutions are being created to alleviate the risks of companies being targeted for patent infringement by PAEs. They include defensive patent aggregators, cross-licensing societies, defensive patent litigation insurances and special entities formed to invalidate patents. Thus, companies may choose between different market-based options to mitigate the chance of being sued by a PAE.

In conclusion, all the evidence suggests that Europe's patent and litigation system is functioning well, with proper safeguards in place to prevent any potential litigation abuses. A combination of 1) experienced judges deciding a case; 2) lower costs for defendants in patent cases than the US; 3) proportionality in granting injunctions, 4) fee-shifting rules and 5) high success rate of European patents disincentivises the alleged strategy of bringing mass and/or speculative patent litigation by Litigation PAEs. This is highly unlikely to change with the introduction of the Unified Patent Court, which has incorporated safeguards against abusive litigation by any entity.

## 1 Introduction

Patent Assertion Entities (PAEs) have been defined in the literature as businesses active solely in the acquisition and licensing of patents.<sup>1</sup> However, they are frequently criticised and negatively referred to as “patent trolls”, i.e. harmful predators that engage in speculative and abusive patent litigation against manufacturing companies if their excessive licensing demands are not met.<sup>2</sup> PAEs supposedly use the peculiarities of litigation, such as the high costs of defending against patent infringement suits, the threat of injunctive relief, high damages awards, and the immunity from patent counter-suits. Since PAEs do not produce patented products, they can purportedly force companies into a settlement or licensing agreements for patents of questionable value.<sup>3</sup> More specifically, PAEs are accused of asserting weak patents with the only intention of obtaining a settlement below litigation costs (nuisance suits). Because of this, PAEs have been claimed to impose a ‘tax on innovation’,<sup>4</sup> harming manufacturing companies and rising prices for consumers. These concerns led an industry group to warn against the harmful effects of PAEs on Europe’s innovativeness and to suggest changes to Europe’s patent and litigation system, in particular by categorically removing injunction as a remedy for patent infringement when litigation is initiated by a PAE.<sup>5</sup>

The article examines these claims and concludes that PAEs should not be a concern for EU policymakers. First, it explains that PAEs are not a uniform category but use various different business models when licensing their portfolio. They share, however, something in common: they generally serve a useful intermediary function in the market by facilitating patent licensing and liquidity in the technology market. Only one PAE sub-category has been identified by the studies of the US Federal Trade Commission (FTC) and the European Commission (EC) as potentially using opportunistic litigation strategies - the so-called Litigation PAEs. Second, the article analyses the effects of PAE litigation and finds no proof that PAE litigation is more harmful than litigation between practising entities. Third, the characteristics of Europe’s patent and litigation system are presented which protect from litigation

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<sup>1</sup> For definition of PAEs see: Federal Trade Commission, ‘Patent Assertion Entity Activity: An FTC Study’ (2016) (FTC PAE Activity Study) p. 1; European Economics, *Patent Assertion Entities in Europe* (Nikolaus Thumm, Garry Gabison (eds.), (Joint Research Center 2016) (JRC: PAEs in Europe 2016) 15-17.

<sup>2</sup> Fiona Scott Morton, Carl Shapiro, ‘Strategic Patent Acquisitions’ (2014) 79 *Antitrust Law Journal* 463, 494.

<sup>3</sup> See: FTC Patent Assertion Entity Study (2016) p. 24 (providing overview of the literature); Fiona Scot Morton, Carl Shapiro, ‘Strategic Patent Acquisitions’ (2014) 79 *Antitrust Law Journal* 463; The White House, Executive Office of the President, ‘Patent Assertion and US Innovation’, June 2013 (White House Report 2013) (overview of the arguments against PAEs).

<sup>4</sup> See: Mark Lemley, Robin Feldman, ‘Is Patent Enforcement Efficient?’ (2018) 98 *Boston Law Review* 102 (describing how PAE litigation represents a tax on innovation); also Lauren Cohen, Umit Gurun, Scott Kominers, ‘Empirical Evidence on the Behaviour and Impact of Patent Trolls’ in Daniel Sokol (ed), *Patent Assertion Entities and Competition Policy* (Cambridge University Press 2017) (overview of the negative effects of PAE litigation in the US).

<sup>5</sup> IP2Innovate, Position Paper, 4 April 2017, available at: [https://ip2innovate.eu/swfiles/files/IP2I\\_Coalitionscopeandobjectives\\_v15\\_040417\\_rev041119.pdf](https://ip2innovate.eu/swfiles/files/IP2I_Coalitionscopeandobjectives_v15_040417_rev041119.pdf)

abuses by any entity. Forth, issues arising out of PAEs' assertion of patents essential to a standard are analysed, showing that licensing commitments given before standard development organisations and the legal framework for injunctions effectively mitigate opportunistic behaviour. Fifth, the recently emerging market-based solutions that reduce the risk of PAE patent infringement suits are explored. Finally, the available empirical data is provided which shows neither signs of systematic or abusive PAE litigation in Europe, nor the presence of harmful Litigation PAEs. The article concludes by cautioning against broad changes to weaken Europe's patent system by, for example, limiting the availability of injunctions and advocating in favour of having more faith in European judges who are well-equipped with the tools and experience to guard against litigation abuses by any entity.

## 2 What are PAEs?

PAEs have been defined by the US Federal Trade Commission as businesses that are solely active in the acquisition of patents from others and licensing to third parties. They are a subcategory of non-practising entities (NPEs), which have been described as entities holding patents but not manufacturing any products or providing services using those patents.<sup>6</sup> NPEs include a wide range of entities with different business models, such as universities, start-ups, sole inventors or large technology development companies. They invest in research and development and protect their inventions with patents, which are typically licensed to manufacturing companies that can commercialise these inventions. Historically many great inventors such as Thomas Edison, inventor of the electric light bulb, Elias Howe, inventor of lockstitch in sewing machines, and Charles Goodyear, inventor of the process for vulcanised rubber, all licensed their patents to companies that commercialised their inventions.<sup>7</sup>

PAEs are said to differ from other NPEs since PAEs typically do not engage in any research and do not develop technologies. Instead, their primary business model is licensing patents acquired or assigned from others.<sup>8</sup> This in itself, is not something problematic or harmful. Patent licensing falls within the right of patent holders and there is nothing illegal or wrong in asking companies that infringe on valid patents to take a license. It is worth remembering that patents are exclusive rights granted for inventions that are novel, innovative and susceptible to industrial application.<sup>9</sup> The patented invention is published in exchange for a limited exclusivity period as compensation for innovative efforts. The commercialisation of patented technology for NPEs means a revenue stream for continuous research and development while allowing licensees to use the patented invention to bring new and innovative products or services to the market. Thus, given that licensing falls within the scope of patent rights, it is questionable if the widely used term "non-practising entity" is factually correct. NPEs are practising their patent rights by

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<sup>6</sup> From a definitional standpoint it is questionable if NPE is a correct term. Patents can be practised by licensing them to others, which is what NPEs typically do.

<sup>7</sup> See: Adam Mossoff, 'Patent Licensing and the Secondary Market in the Nineteenth Century' (2015) 22 *George Mason Law Review* 959; Zorina Khan, 'Trolls and Other Patent Inventions: Economic History, and the Patent Controversy in the Twenty-First Century' (2014) 21 *George Mason Law Review* 825.

<sup>8</sup> FTC PAE Activity Study (2016) (n 1) 15-17; JRC: PAEs in Europe (2016) (n 1) 15-17.

<sup>9</sup> European Patent Conventions, Article 52.

licensing their technology to others. Certainly, the NPE term has not been used to describe great inventors of the past.<sup>10</sup>

PAEs in general perform a valuable intermediary function in the market, similar to all other economic intermediaries.<sup>11</sup> Small inventors, universities or SMEs may not have the time, resources, or knowledge to enforce their patents and may prefer to assign them to companies that are licensing specialists. For example, patent pools aggregate patents from different owners and licensed them as a package, substantially reducing transaction costs and increasing market transparency.<sup>12</sup> They ensure smoother licensing to patent users who benefit from a one-stop-shop instead of transacting with multiple different entities while, at the same time, providing regular licensing income to patent owners who are not able, or do not need to be directly engaged in commercializing their innovations – allowing them to focus on R&D activities.

Studies by FTC and the European Commission's Joint Research Centre (JRC) in 2016 looked at PAEs in the US and the EU and discovered that they use different business models. The FTC, for example, classified observed PAEs as 'Portfolio PAEs' and 'Litigation PAEs'.<sup>13</sup> Portfolio PAEs amass a large patent portfolio of thousands of patents and generate revenue by licensing the whole portfolio, often without litigation.<sup>14</sup> They fund their initial patent acquisitions through capital raised by investors, including investment funds and practising entities.<sup>15</sup> Portfolio PAEs typically conclude licenses that generate relatively large revenues<sup>16</sup> and have similar behaviour as practising entities when asserting patents in the wireless sector.<sup>17</sup> On the other hand, the characteristics of Litigation PAEs are very different. They typically first sue potential licensees and settle shortly afterwards by entering into license agreements covering small portfolios, often containing fewer than ten patents.<sup>18</sup> Most licences yielded royalties of less than \$300,000, which is below the average early-stage litigation costs for defending against patent infringement.<sup>19</sup> Because of these characteristics, the FTC considered Litigation PAE behaviour to be nuisance litigation.<sup>20</sup> The FTC claimed that Litigation PAEs filled 96% of the cases in

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<sup>10</sup> Adam Mossoff, 'Patent Licensing and the Secondary Market in the Nineteenth Century' (2015) 22 *George Mason Law Review* 959.

<sup>11</sup> See Stephen Haber, Seth Werfel, 'Patent Trolls as Financial Intermediaries? Experimental Evidence' (2016) 149 *Economic Letters* 64; Ryan Holte, 'Trolls or Great Inventors: Case Studies of Patent Assertion Entities', (2014) 59 *Saint Louis University Law Journal* 1; Anne Layne-Farrar, 'The Brothers Grimm Book of Business Models: A Survey of Literature and Developments in Patent Acquisition and Litigation' (2012) 9 *Journal of Law, Economics & Policy* 29.

<sup>12</sup> Robert Merges, Michael Mattioli, 'Measuring the Costs and Benefits of Patent Pools' (2017) 78 *Ohio State Law Journal* 281.

<sup>13</sup> FTC: PAE Activity Study (2016) (n 1), p. 3.

<sup>14</sup> *Ibid.*

<sup>15</sup> *Ibid.*, p. 45-47.

<sup>16</sup> *Ibid.*, p 89-90 (showing that more than 65% of studied Portfolio PAE license agreements generated royalties of more than \$1 million, and roughly 10% of these licenses generated royalties of more than \$50 million).

<sup>17</sup> *Ibid.*, p. 104.

<sup>18</sup> *Ibid.*, p. 4.

<sup>19</sup> *Ibid.*, p. 43.

<sup>20</sup> *Ibid.*, p. 4.

its study but generated only 20% of the reported revenue, while Portfolio PAEs obtained 80% of the reported revenue but brought only 4% of cases.<sup>21</sup>

An example of Litigation PAE is MPHJ Technology Investments, a company investigated by the FTC.<sup>22</sup> The MPHJ at one point sent almost 17,000 letters to small businesses asking them to take a license on their patents related to network scanning,<sup>23</sup> claiming that many other companies have already agreed to pay thousands of dollars for licenses and warned that it would file patent infringement lawsuits if it did not receive a positive reply. In truth, at the time MPHJ sent the first wave of letters, it had concluded no licences and had no intention to initiate any lawsuits. In fact, it never filed any lawsuit. The behaviour of Litigation PAEs therefore clearly exhibits the characteristics of what part of the academia calls “patent trolls”. However, since then it appears there was no other similar case and, as a result, MPHJ was more of an exception than a rule regarding Litigation PAE behaviour.

In Europe, the JRC study identified 6 different PAE business models:<sup>24</sup>

(1) ‘Focused assertion entities’, targeting main players in one industry with relatively high-quality patents in order to maximise the licensing value of such patents.<sup>25</sup>

(2) ‘Strategic assertion entities’ consisting of practising entities in the ICT sector that assert patents with the aim of blocking competitors and defending their market share.<sup>26</sup>

(3) ‘Patent monetisation entities’ or ‘Hybrid PAEs’ which assert patents on behalf of practising entities and share revenues with them.<sup>27</sup>

(4) ‘License facilitating entities’ that are primarily interested in facilitating technology transfer by engaging in licensing arrangements with practising entities. One subset of license facilitating entities includes firms that engage in significant R&D and patenting but lack the production capabilities to commercialise their innovation.<sup>28</sup> They generate revenues primarily from licensing their IP to practising entities and may also provide consulting services. Another subset are patent pools which combine patents from practising entities in a certain technological area and offer a joint license for the whole portfolio.<sup>29</sup>

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<sup>21</sup> Ibid.

<sup>22</sup> FTC, *In the Matter of MPHJ Technology Investments, LLC*, File No. 142 3003 (2015) (Analysis of Proposed Consent Order to Aid Public Comment).

<sup>23</sup> FTC, *In the Matter of MPHJ Technology Investments, LLC*, File No. 142 3003 (2015) (Complaint).

<sup>24</sup> JRC: PAEs in Europe (2016) (n 1) pp 130-143.

<sup>25</sup> Ibid, p. 130.

<sup>26</sup> Ibid, p. 132.

<sup>27</sup> Ibid, p. 132.

<sup>28</sup> Ibid, p. 133.

<sup>29</sup> Ibid. On patent pools see Julia Brito and Hector Axel Contreras Alvarez, ‘Patent Pools: A Practical Perspective—Part I’, (2021) *Les Nouvelles - Journal of the Licensing Executives Society*, December 2021, at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3946590](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3946590)

Julia Brito and Hector Axel Contreras Alvarez, ‘Patent Pools: A Practical Perspective—Part II’ (2021) *Les Nouvelles - Journal of the Licensing Executives Society*, March 2022, at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4019638](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4019638)

(5) 'Defensive patent aggregators' acquire patents that can be asserted against practising entities and then license the entire portfolio to its members in order to mitigate the risk of patent infringement.<sup>30</sup>

(6) 'Serial assertion entities' massively assert patents of relatively dubious quality against a large number of entities, mostly small and medium-sized enterprises (SMEs) and end-users, with the aim of achieving fast settlements.<sup>31</sup> They thus exhibit similar characteristics as Litigation PAEs identified in the US.

Interestingly, none of the above-mentioned studies found conclusive evidence that PAEs overall generate negative welfare effects. According to the FTC, demand-letter campaigns, on their own, did not result in low-revenue licenses, since Litigation PAE had to pursue their claims in courts. Moreover, Litigation PAEs may hold valid patents, which means they are legitimately trying to enforce patents against companies that are infringing. The FTC proposed several procedural measures that should make it more difficult and costly to bring nuisance suits in the future.<sup>32</sup>

In Europe, the JRC study found that the majority of patents asserted in Europe originate from practising entities (PEs) which may have many legitimate reasons to choose to work with PAEs.<sup>33</sup> The motives may relate to the desire to maximise the return on IP assets, the avoidance of reputational costs of being perceived as an aggressive litigator, or the change in market circumstances requiring them to rely on and focus more on licensing income and technology development rather than the production of downstream products.

Importantly, the JRC study found that European SMEs are not the primary targets of PAE assertions. Rather, SMEs are the ones benefiting from the presence of certain types of PAEs who assist them in "effectively identifying potential licensees and entering into licensing negotiations with them" and "adequately recouping their R&D investment by securing licensing revenues that are higher and fairer than those they would have been able to achieve in the absence of PAEs".<sup>34</sup>

The effects of patent assertions are therefore better understood by focusing on the *quality* of underlying patents and the R&D investment that went into the patented technology, rather than on whether a company practice a patent or not. The JRC study concluded that the enforcement of low-quality patents may have negative welfare implications. Low-quality patents impose licensing costs for patents that should not have been granted in the first place, and businesses may also incur litigation costs if they

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<sup>30</sup> JRC: PAEs in Europe (2016) (n 1) 133.

<sup>31</sup> Ibid, p. 131.

<sup>32</sup> FTC PAE Activity Study (2016) (n 1) 9-11 (The FTC proposed four measures: 1) develop rules and case management practices to address discovery burden and cost asymmetries in PAE litigation, for example by amending the Federal Rule of Civil Procedure 26 which addresses discovery in civil actions; 2) provide the courts and defendants with more information about plaintiffs that have filed infringement lawsuits, for example by amending the Federal Rule of Civil Procedure 7.1 to reach a broader range of non-party interested entities or persons; 3) streamline multiple cases brought against defendants on the same theories of infringements; 4) provide sufficient notice of these infringement theories as courts continue to develop heightened pleading requirements for patent cases).

<sup>33</sup> JRC: PAEs in Europe (2016) (n 1) 48-49.

<sup>34</sup> JRC: PAEs in Europe (2016) (n 1) 51.

choose to challenge and invalidate such patents.<sup>35</sup> On the other hand, the assertion of high-quality patents may have positive implications insofar as it addresses opportunistic infringement behaviour and offers patent holders a means of securing appropriate rewards for their innovation.<sup>36</sup>

Various studies attempted to measure the quality of PAEs' patents. Some examined PAE litigation in the US, finding that it largely involves software patents that often get invalidated in litigation.<sup>37</sup> Others analysed patents *acquired* by PAEs, providing a different picture. Fisher and Henkel examined a dataset of patents obtained by NPEs between 1997 and 2006 and compared them with the control group of patents bought by practising entities.<sup>38</sup> They found that NPEs purchased patents are of significantly higher quality than PEs. Kesan, Layne-Farrar and Schwartz assessed patents acquired by 'Hybrid PAEs' that retain a link with PEs from which they purchase patents and share licensing revenues with them.<sup>39</sup> They concluded that Hybrid PAEs obtained relatively higher-quality patents than average, with a broader scope of protection and with a greater chance to be litigated. Similar results were attained by Leiponen and Delcamp - slightly older, highly cited patents with broader claims appear to be the primary target of PAE acquisitions.<sup>40</sup> Therefore, these studies illustrate that patent quality plays an important role in the decision of the PAE to acquire patents since higher-quality patents will likely be more successfully monetised.

In conclusion, the labels "NPE", "PAE" or "patent trolls" are unhelpful as they tell us nothing about the litigation behaviour or the quality of underlying patents. As seen, NPEs and PAEs include a diverse range of business models with the legitimate aim of commercialising patent rights. Moreover, the terms have often been used in the literature as synonyms, creating additional terminological confusion. "Patent troll" label is especially harmful because it assumes negative value judgments.<sup>41</sup> It effectively shifts the discussion away from the validity and infringement of patents to the condemnation of any company that enforces its patent rights. As one author observed: "the patent troll term has been used as a catch-all term that means any patent holder that asserts patents against someone who complains about it".<sup>42</sup>

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<sup>35</sup> Ibid, p. 52.

<sup>36</sup> Ibid. p. 53.

<sup>37</sup> John Allisson, Mark Lemley, Joshua Walker, 'Extreme Value or Trolls on Top? The Characteristics of the Most Litigated Patents' (2009) 158 *University of Pennsylvania Law Review* 1. (finding that most litigated patents are software and telecommunications patents which are predominantly in the hands of NPEs (80%); John Allison, Mark Lemley, David Schwartz 'How Often Do Non-Practicing Entities Win Patent Suits?' (2017) (32) *Berkley Technology Law Journal* 237 (estimating that in 2008 to 2009 PAEs asserted software patent in 76.9% of cases).

<sup>38</sup> Timo Fischer, Joachim Henkel, 'Patent Trolls on Markets for Technology – An Empirical Analysis of NPEs' Patent Acquisitions' (2012) 41 *Research Policy* 1519. Similarly see Sannu Shrestha, 'Trolls or Market-Makers? An Empirical Analysis of Nonpracticing Entities' (2012) 110 *Columbia Law Review* 114; Michael Risch, 'Patent Troll Myths' (42) *Seton Hall Law Review* 457.

<sup>39</sup> Jay Kesan, Anne Layne-Farrar, David Schwartz. 'Understanding Patent "Privateering": A Quantitative Assessment' (2019) 16(2) *Journal of Empirical Legal Studies* 343.

<sup>40</sup> Aija Leiponen, Henry Delcamp, 'The Anatomy of a Troll? Patent Licensing Business Models in the Light of Patent Reassignment Data' (2019) 48 *Research Policy* 298.

<sup>41</sup> See: FTC: PAE Activity Study (2016) (n 1) p. 17.

<sup>42</sup> Michael Risch, 'Framing the Patent Troll Debate' (2014) 24 *Expert Opinion on Therapeutic Patents* 127.



Instead, the discussion should focus on the *effects* of patent assertion and the *quality* of patents. The FTC and JRC studies identified only one type of PAE – Litigation PAE or Serial Assertion Entity – as potentially harmful and initiating nuisance litigation. The effects of other PAEs would depend on the facts of the case, the same as patent litigation between PEs. Often, the negative effects of patent litigation are associated with the assertion of lower-quality patents that may equally be held by PAEs or PEs. The monetisation of higher quality patents, on the other hand, represents a way of ensuring technology transfer, provides rewards for innovative efforts and secures further innovation incentives.

### **3 Litigation initiated by practising entities or by patent assertion entities: impact on technology users**

PAE litigation is said to be more harmful than litigation between practising entities (PEs) because of PAEs immunity to counter-claims of infringement. This is due to the fact that PAEs do not manufacture any patented products. Hence, practising entities cannot counter-sue for patent infringement or settle a litigation with a cross-license with a PAE. PAEs are also supposed to engage more frequently in opportunistic conduct that imposes large costs on technology users. These arguments are, however, unconvincing because neither is cross-licensing costless, nor is the opportunistic conduct exclusively reserved for PAEs.

There is little difference between cash licensing payments and cross-licenses in terms of imposed costs.<sup>43</sup> As shown by Lemley and Melamed, acquiring and maintaining patents included in cross-licensing can be expensive.<sup>44</sup> It involves funds for research and development and patenting, as well as potentially purchasing new patents. Thus, even a cross-licence with a zero royalty payment includes the costs of acquiring, producing and maintaining a relevant patent portfolio.<sup>45</sup> Often in cross-licensing one party's portfolio may be valued more than the other party's. A party with a weaker portfolio would still have to pay royalties for the difference in the value of the cross-licensed patents. Furthermore, practising entities incur opportunity costs in the form of lost licensing revenues if they refrain from monetising their patent portfolios.

Next, litigation between practising entities may be even more expensive because they are able to obtain larger damages by showing how their business was harmed by competitors' infringing conduct. In the US, for instance, the largest jury awards of over \$1 billion were awarded to practising entities.<sup>46</sup> In addition, at least in some countries, practising entities are more likely to obtain injunctions than PAEs. A study by Seaman shows that in the US, injunctions are often available only to practising companies

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<sup>43</sup> Mark Lemley, Douglas Melamed, 'Missing the Forest for the Trolls' (2013) 113 *Columbia Law Review* 2117, 2130.

<sup>44</sup> *Ibid.*

<sup>45</sup> *Ibid.*, 2131.

<sup>46</sup> PWC, Patent Litigation Study (2017) (for example, Apple obtained more than \$1 billion against Samsung for the infringement of a smartphone design patent); 2020 saw a record amount of damages awards in patent cases of \$4.7 billion, see Lex Machina, 'Patent Litigation Report' (March 2021) p. 19.

that compete against the infringer, while non-competitors and other NPEs are generally denied injunctive relief.<sup>47</sup> Thus, practising entities are also in the position to engage in opportunistic patent litigation.

Crucially, practising entities might have strategic incentives to harm their competitors.<sup>48</sup> The goal of PEs is to maximise revenues from their product business, and they may want to either exclude competitors from the market and/or impose excessive licensing costs, higher than those PAEs would charge, in order to make competing products less attractive to consumers. On the other hand, the goal of PAEs is to maximise revenues from patent licensing; it would not be logical for them to wish market exclusion or to make licensed products less attractive to consumers. In fact, it is logical to expect PAEs to prefer infringers to stay in the market and continue paying royalties for the use of patented technologies.

Consequently, it seems difficult to conclude that PAEs overall impose greater costs on technology users than practising entities. The concrete effects of patent assertions would depend on the facts of the case.

#### **4 Europe and Litigation PAEs**

When it comes to Europe and the alleged threat of Litigation PAEs, the current patent and litigation system already has in place mechanisms to deter nuisance litigation from any entity. The Unified Patent Court (UPC) also has in-built safeguards to protect against litigation abuses.

##### **4.1 Current litigation and patent system**

The existing litigation and patent system in Europe has characteristics that guard against abusive patent litigation:

- 1) **Patent cases decided by judges:** In Europe, judges decide patent cases. Judges are qualified experts, who have the necessary tools and know-how to watch over against any opportunistic litigation conduct.
- 2) **Lower patent damages than in the US.** A study by Technopolis showed that during 2010-2015 the average patent damages in Germany and the UK were €676,000 and €380,000 respectively.<sup>49</sup>

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<sup>47</sup> See Christopher Seaman, 'Permanent Injunctions in Patent Litigation After *eBay*: An Empirical Study' (2016) 101 *Iowa Law Review* 1949.

<sup>48</sup> See: Mark Lemley, Douglas Melamed, 'Missing the Forest for the Trolls' (2013) 113 *Columbia Law Review* 2117, 2145-2146.

<sup>49</sup> Technopolis Group in consortium with EY and Schalast Rechtsanwälte, 'Support Study for the Ex-Post Evaluation and Ex-Ante Impact Analysis of the IPR Enforcement Directive (IPRED)' (2017), p. 258.

Love et al similarly found that the estimated value of studied patent cases in Germany and the UK is less than \$1 million for the overwhelming majority of cases.<sup>50</sup>

- 3) **Lower costs for defendants.** The costs of defending patent infringement are not as high as in the US. One study estimates the average upper bound of patent litigation costs in the selected EU jurisdictions, excluding the UK, to be around €200,000 – 250,000.<sup>51</sup> This is considerably lower than in the US where the average costs of NPE litigation are between \$500,000 and \$3,7 million.<sup>52</sup>
- 4) **Fragmented litigation system.** Europe still does not have unitary patent and unitary jurisdiction to hear patent cases, meaning that patents are national and enforced before national courts. In order to capture the market of magnitude such as the US, a patentee would need to obtain different national patents and then assert them simultaneously across several European jurisdictions. This significantly increases the costs of enforcement and disincentives mass assertion activity because it requires knowledge of various national patent laws and court systems, as well as hiring and paying lawyers in each jurisdiction. Once established, the UPC is expected to be the sole venue in Europe to hear patent cases and, as a result, it should lower litigation costs. However, during a relatively long transitional period there will be parallel competences between national courts and the UPC.<sup>53</sup>
- 5) **Loser pays rule.** In Europe, the loser pays rule applies in patent litigation,<sup>54</sup> meaning that if a Litigation PAE loses the case it will have to pay its own as well as the legal costs of the other party. This makes the option to litigate more costly and a significant deterrent to Litigation PAEs.<sup>55</sup>
- 6) **Injunctions, as a rule, are not automatic.** The IPR Enforcement Directive provides that injunctions “may be” issued against the infringer.<sup>56</sup> Moreover, as a general obligation, all procedures and remedies must be fair and equitable, effective, proportionate and dissuasive, and must provide safeguards against their abuse.<sup>57</sup> In other words, as a matter of EU Law, national judges should take the principle of proportionality when deciding whether to grant or deny injunctions. The European Commission in the Guidelines on the IPR Enforcement Directive confirmed this

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<sup>50</sup> Brian Love et al, ‘Patent Assertion Entities in Europe’ in Daniel Sokol (ed), *Patent Assertion Entities and Competition Policy* (Cambridge University Press 2017) p. 115.

<sup>51</sup> Stuart Graham, Nicolas Van Zeebroeck, ‘Comparing Patent Litigation Across Europe: A First Look’ (2014) 17 *Stanford Technology Law Review* 655, 667.

<sup>52</sup> See also JRSC: PAEs in Europe (2016) (n 1) p. 53 (finding based on their interviews that the average costs of patent litigation in Europe to be \$550,000 to \$3,5 million, while in the US is \$10 million).

<sup>53</sup> See Section 4.2 below for details about the UPC system.

<sup>54</sup> Directive 2004/48/EC on the Enforcement of Intellectual Property Rights [2004] OJ L 195/16 (IPR Enforcement Directive), Article 14.

<sup>55</sup> Brian Love et al, ‘Patent Assertion Entities in Europe’ in Daniel Sokol (ed), *Patent Assertion Entities and Competition Policy* (Cambridge University Press 2017) 104.

<sup>56</sup> Directive 2004/48/EC on the Enforcement of Intellectual Property Rights [2004] OJ L 195/16 (IPR Enforcement Directive), Article 11.

<sup>57</sup> *Ibid*, Article 3(2).

approach,<sup>58</sup> and the Court of Justice of the European Union (CJEU)'s *Huawei v ZTE* reiterated that principle, and importantly, not allowing for injunctive relief for standard essential patents unless the implementer is shown to be an unwilling licensee.<sup>59</sup>

Nevertheless, some are still concerned about patent injunctions in Germany. They argue that German judges view patent injunctions as a rule, granting them automatically and are apparently not considering proportionality in the assessment. They also warn that the German bifurcated system, where different courts decide infringement and validity, may lead to an “injunction gap” where one court decides on the infringement of patents and awards injunctions before the other decide on validity.<sup>60</sup> The perceived danger is that PAEs may leverage the injunction gap and extract excessive settlements from defendants for patents that are likely to be invalid.

There are though some mechanisms in place to overcome possible abuses due to the injunction gap.<sup>61</sup> First, infringement proceedings may be stayed if the invalidity action has been initiated and there is a high likelihood that a patent will be invalidated.<sup>62</sup> For instance, the defendant may demonstrate a clear lack of inventiveness, or present a paper describing the invention published prior to the patent filing. Second, the first instance injunction can be enforced only if the patent owner deposits sufficient security, the amount which may represent a barrier to enforcement. For example, in one case the enforcement of an injunction was subject to a security payment of 7 billion euros.<sup>63</sup> Third, the enforcement of the first-instance injunction can be stayed until the final decision if: i) the defendant provides security; ii) the enforcement threatens to inflict serious irreparable damage to the defendant and iii) a balance of interest shows that the defendant's interests outweigh the patentee's interest.<sup>64</sup>

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<sup>58</sup> See also: Commission, ‘Guidance on Certain Aspects of Directive 2004/48/EC on the Enforcement of Intellectual Property Rights’ (Communication) COM(2017) 708 final, p. 19.

<sup>59</sup> C-170/13 *Huawei v ZTE*, ECLI:EU:C:2015:477.

<sup>60</sup> IP2Innovate Position Paper (4 April 2017) available at: [http://ip2innovate.eu/wp-content/uploads/2017/04/IP2I\\_Coalitionscopeandobjectives\\_v15\\_040317.pdf](http://ip2innovate.eu/wp-content/uploads/2017/04/IP2I_Coalitionscopeandobjectives_v15_040317.pdf) p. 4; Katrin Cremers et al, ‘Invalid but Infringed? An Analysis of the Bifurcated Patent Litigation System’ (2016) 131 *Journal of Economic Behaviour & Organization* 218; to understand the peculiarities of German system please see ‘Interview of Uwe Scharen on the Reform of the German Patent Act’ (05 February 2021) available at: <https://www.4ipcouncil.com/research/interview-mr-uwe-scharen-reform-german-patent-act-2>

<sup>61</sup> Katrin Cremers et al, ‘Patent Litigation in Europe’ (2017) 44 *European Journal of Law & Economics* 1, 6. Uwe Scharen, ‘The Practice of Claiming a Court Injunction Ordering an Implementer to Cease and Desist from Infringing a Patent’, 1. December 2018, 4iP Council, available at: [IP Research - Claiming a court injunction ordering an implementer to cease and desist from infringing a patent | 4iP Council](http://www.4ipcouncil.com/research/interview-mr-uwe-scharen-reform-german-patent-act-2)

<sup>62</sup> Peter Picht, Anna-Lena Karczewski, ‘Germany’ in Jorge Contreras, Martin Husovec (eds.), *Injunctions in Patent Law* (2022 Cambridge University Press) 142, 147.

<sup>63</sup> See Mathieu Klos, ‘Germany Does not Need to Reform the Automatic Injunction’ (2 August 2020) *JUVE Patent*, available at: <https://www.juve-patent.com/news-and-stories/legal-commentary/germany-does-not-need-to-reform-the-automatic-injunction/>

<sup>64</sup> Peter Picht, Anna-Lena Karczewski, ‘Germany’ in Jorge Contreras, Martin Husovec (eds.), *Injunctions in Patent Law* (Cambridge University Press 2022) 142, 149.

In 2021, the German Patent Act (Patentgesetz) was reformed bringing – among other amendments – two key changes related to patent injunctions. Firstly, the Federal Patent Court (Bundespatentgericht), which is solely competent to decide on patent validity in Germany, shall now issue the “qualified opinion” concerning the validity of the patent-in-suit in parallel infringement proceedings pending before the ordinary civil courts within six months from the filing of the validity challenge.<sup>65</sup> The intention is precisely to minimise the injunction gap so that the court dealing with infringement will be able to obtain qualified insights on the validity of the patent-in-suit much earlier than today. This is expected to allow more robust decisions on whether an injunction is warranted or instead it is preferable to stay the infringement proceedings in anticipation of the final ruling of validity.

Secondly, the reform introduced an express proportionality test: the claim to injunctive relief is exceptionally precluded “*to the extent that the assertion would, due to the special circumstances of the individual case and in view of the principle of good faith lead to disproportionate hardship on the infringer or third parties which would not be justified by the exclusivity right.*”<sup>66</sup> Under the new Patent Act, in case an injunction is precluded, the patent owner is entitled to appropriate monetary compensation in addition to a claim for damages.<sup>67</sup>

The reactions to the 2021 reform of the German Patent Act were mixed. Some consider that changes do not bring anything new and represent a mere codification of the existing case-law of the Federal Court of Justice.<sup>68</sup> Several German judges allegedly commented that the “automatic” injunction will continue to be the hard rule in patent cases.<sup>69</sup> Others, however, believe that the new provision now explicitly provides for a proportionality defence, removing all doubts about the court’s capacity to tailor or deny injunctions in appropriate cases.<sup>70</sup> Some think it will provide a defence against allegedly abusive PAE litigation,<sup>71</sup> while there are those who are concerned that the provision still offers too much precedence to the patentee’s interests.<sup>72</sup>

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<sup>65</sup> German Patent Act, Section 83(1).

<sup>66</sup> German Patent Act, Section 139(1).

<sup>67</sup> German Patent Act, Section 139(3).

<sup>68</sup> See *Warmetauscher*, X ZR 11/13 Federal Supreme Court, (10 May 2016); Arwed Burrichter, Natalie Kirchhofer, Lauren Schweizer, ‘Germany Revises Patent Acts and Clears Way for UPC’ (26 October 2021) *IAM*.

<sup>69</sup> Mathieu Klos, ‘German Patent Judges Predict Few Changes to Automatic Injunction’ (23 June 2021) available at: <https://www.juve-patent.com/news-and-stories/legal-commentary/german-patent-judges-predict-few-changes-to-automatic-injunction/>

<sup>70</sup> Leon Dijkman, ‘Amendment of German Patent Law: Small Step or Giant Leap for Proportionality?’ (30 July 2021) *the IPKat*, available at <https://ipkitten.blogspot.com/2021/07/amendment-of-german-patent-law-small.html>

<sup>71</sup> See IP2Innovate, ‘Germany Shuts Door on Patent Trolls’ (14 June 2021) available at: <https://ip2innovate.eu/news-media/germany-shuts-door-on-patent-trolls/?lid=420>; Konstanze Richter, ‘Patent Law Reform: Bundestag Introduces Principle of Proportionality’ (11 June 2021) *Juve Patent*, available at: <https://www.juve-patent.com/news-and-stories/legal-commentary/patent-law-reform-bundestag-introduces-principle-of-proportionality/>

<sup>72</sup> Luc Desauntes-Barbero et al., ‘Max Plank Institute for Innovation and Competition Position Paper on the Evisaged Reform of the German Patent Act’ (2020) *Max Plank Institute for Innovation and Competition Research Paper No. 20-05*.

It remains to be seen how German courts will interpret the new provision introducing an express proportionality test concerning patent injunctions. Much will depend on whether they would refuse injunctions more frequently or limit the application to a narrow set of circumstances. In any event, the reform is notable as it now directly enshrines the proportionality requirement in patent legislation and confirms the legal possibility to adjust injunctions depending on the specific circumstances of the case. Thus, while injunctions might still be justified in the overall majority of patent cases, they may be refused or limited in exceptional cases of abusive Litigation PAEs.<sup>73</sup>

- 7) **The success rates of European patents.** Data shows that European patents have high success rates, which goes against the prevailing literature that PAEs in general and Litigation PAEs, in particular, assert only “weak” patents. For example, in Germany, 217 nullity proceedings were initiated before the Federal Patent Court in 2018 while, in the same year, approximately 120,000 patents were granted making for a total of 703,391 patents in force.<sup>74</sup> Second, a small number of patents get fully invalidated. Out of 217 nullity proceedings in Germany in 2018, only 59 (or 24%) ended with the revocation of the patent and 39 resulted in partial invalidation.<sup>75</sup> The majority of cases (116 or 55%) closed with the withdrawal of the case and no decision on the validity. Third, partial invalidation is not an indicator of low patent quality.<sup>76</sup> If a court decides to invalidate one or more patent claims it means that it has also decided to maintain the rest of the claims. If the product still infringes the patent, the latter is now even more valuable than before it was partially invalidated since the validity of its claims has been confirmed both by the patent office and the court. Evidence of the value of partially invalidated patents can be found in the renewal rates of these patents. It would not be economically efficient for patent owners to pay maintenance fees for patents that have lost their value and the decision to continue maintaining partially invalidated patents suggest that patent owners still perceive such patents as valuable.<sup>77</sup> One study found that patent owners renewed 90% of partially invalidated patents in Germany two years after the decision on partial invalidation.<sup>78</sup> Therefore, the findings suggest that the majority of patents are not litigated and, when it comes to litigation, out of all initiated validity challenges only a small number of patents end up invalidated.

## 4.2 The Unified Patent Court

After many years of negotiations, an uncertain and prolonged ratification process, hampered by the UK’s withdrawal from the EU and constitutional challenges in Germany, the UPC and the Unitary Patent

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<sup>73</sup> See Explanatory Memorandum of the Patent Modernisation Act, p. 64 (noting that with the new provision on patent injunctions, NPEs could potentially be denied injunction more easily than practicing entities).

<sup>74</sup> Axel Contreras, Spyros Makris, ‘The Value of (Partially) Invalidated Patents’ (07 August 2020) *IAM*.

<sup>75</sup> *Ibid*.

<sup>76</sup> Claudia Tapia, ‘Assessing the Quality of European Patents’ (2016) November/December, *Intellectual Property Magazine* 43.

<sup>77</sup> Axel Contreras, Spyros Makris, ‘The Value of (Partially) Invalidated Patents’ (07 August 2020) *IAM*.

<sup>78</sup> *Ibid*.

(UP) are finally expected to become operational in 2023.<sup>79</sup> Europe will then enjoy one UP and a common patent court for those EU-member states that have ratified the UPC Agreement. The UPC will have jurisdiction to decide on a UP and European patents granted by the European Patent Office (EPO) unless the proprietor of the European patent opts out of the system during the transitional period of seven years.<sup>80</sup> National courts will continue to have jurisdiction over patents granted by national patent offices. Thus, the UPC system will continue to run in parallel with the existing framework of national country-by-country patent litigation, but it will provide an option for patent owners to have one sole patent jurisdiction.

Some argue that the UP and the UPC would create an “open invitation for PAE’s” abuse.<sup>81</sup> This is due to the possibility of: i) obtaining EU wide-injunction; ii) bifurcated proceeding where infringement and validity would be decided by different court divisions, leading to a potential injunction gap, and iii) forum shopping – a concern that some local division would be more patentee-friendly than others.<sup>82</sup>

The UPC system however has mechanisms in place to prevent litigation abuses by any entity. First, injunctions are not automatic. Article 62 of the Agreement on the UPC provides that the Court “may grant an injunction against the infringer”,<sup>83</sup> meaning that injunctions do not follow automatically and are a discretionary remedy. Article 42 further provides that judges must also ensure that rules and remedies are applied in a fair and equitable manner and should deal with the litigation in proportionate ways.<sup>84</sup> These requirements provide the necessary balancing of interests to ensure that injunctions would not be abused.

Second, the decision on bifurcation is also under the discretion of judges,<sup>85</sup> and mechanisms are in place to either prevent bifurcation from happening or to coordinate the infringement and validity proceedings in order for them to end at the same time. For instance, if a counter-claim of invalidity is raised in the infringement proceeding, judges may choose to rule on both issues, or refer the issue of validity to the central division and decide whether to stay the infringement proceedings.<sup>86</sup> Any decision

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<sup>79</sup> Unified Patent Court, ‘The Provisional Application Phase and the UPC’s expected timeline’ (06 April 2022) available at: <https://www.unified-patent-court.org/news/provisional-application-phase-and-upcs-expected-timeline> ; Regulation (EU) No 1257/2012 Implementing Enhanced Cooperation in the Area of the Creation of Unitary Patent Protection [2012] OJ L 361; Agreement on Unified Patent Court [2013] OJ C 175 (UPC Agreement).

<sup>80</sup> Article 83 of the UPC Agreement.

<sup>81</sup> IP2Innovate Position Paper 4 April 2017, p. 7, available at: [http://ip2innovate.eu/wp-content/uploads/2017/04/IP2I\\_Coalitionscopeandobjectives\\_v15\\_040317.pdf](http://ip2innovate.eu/wp-content/uploads/2017/04/IP2I_Coalitionscopeandobjectives_v15_040317.pdf) ; also IP2Innovate Letter to UPC Judges [http://ip2innovate.eu/wp-content/uploads/2018/01/IP2I\\_Letter-on-UPC-judges-training\\_131217.pdf](http://ip2innovate.eu/wp-content/uploads/2018/01/IP2I_Letter-on-UPC-judges-training_131217.pdf)

<sup>82</sup> The UPC will consist of a Court of First Instance and a Court of Appeal. The Court of First Instance will have a central division, as well as local and regional divisions. Every Contracting Member State may set up a local division or, together with one or more other Contracting Member States set up a regional division of the Court of First Instance. See Article 7 of the UPC Agreement.

<sup>83</sup> Article 62, Agreement on the UPC.

<sup>84</sup> *Ibid*, Article 42.

<sup>85</sup> Article 33(3) Agreement on the UPC; Rule 37 of Rules and Procedures of the UPC (18<sup>th</sup> Draft of 19 October 2015).

<sup>86</sup> *Ibid*.

on bifurcation must be reasoned and parties may challenge it.<sup>87</sup> In case judges decide that it may be better to bifurcate proceedings, the UPC Rules and Procedures ensure that both proceedings should be coordinated to end at the same time. Judge-rapporteur is instructed to accelerate the validity proceedings before the central division and to schedule the oral hearing in the validity proceedings before the oral hearing in the infringement proceedings.<sup>88</sup> Finally, first-instance decisions may be stayed pending appeal, ensuring that any infringement decision will not be enforced until the validity proceedings have not yet been resolved.<sup>89</sup>

Third, the concern about potentially pro-patentee and “injunction friendly” local divisions is likely to be mitigated by the implementation of uniform practices across the UPC and the right to appeal the decisions of local divisions, which should increase consistency between judgments.

Finally, a practical disincentive to bring EU-wide injunction proceedings is that defendants may counter with the revocation of the unitary patent.<sup>90</sup> Thus, a unitary patent enables patent owners to obtain an EU-wide injunction if they enforce it before the UPC but, at the same time, risk invalidation across the entire EU if the implementer is successful with the revocation countersuit. This characteristic may make patent owners act more cautiously and be mindful of the strength of patents they assert before the UPC.

To sum-up, the UPC system and its highly trained and experienced judges are well-equipped against any potential abuse of the litigation system, a view shared by the EC.<sup>91</sup>

## 5 PAEs and Standard Essential Patents

The last point to consider is the enforcement of Standard Essential Patents (SEPs) by PAEs. A SEP is a patented invention that is necessary to comply with a technical standard, such as 4G, 5G, Wi-Fi or Bluetooth. To encourage wide dissemination of the standard, SEP owners typically agree to license their patents on fair, reasonable and non-discriminatory (FRAND) terms and conditions.<sup>92</sup> The FRAND commitment allows for a balance of interests between innovators and implementers when negotiating and agreeing on a license for the use of SEPs.

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<sup>87</sup> Rule 37(1) and Rule 220, Rules and Procedures of the UPC.

<sup>88</sup> Ibid, Rule 40.

<sup>89</sup> Rule 295 of the Rules and Procedures of the UPC.

<sup>90</sup> See Nikolaus Thumm, ‘The Good, the Bad and the Ugly – The Future of Patent Assertion Entities in Europe’ (2018) 30(9) *Technology Analysis & Strategic Management* 1046.

<sup>91</sup> See: Answer Given by Mr Barnier on Behalf of the Commission (8 January 2014), available at: <http://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2013-012200&language=EN>

<sup>92</sup> For details on FRAND licensing see Igor Nikolic, *Licensing Standard Essential Patents: FRAND and the Internet of Things* (2021 Hart Publishing). While some SEP users are licensed by SEP owners, others are protected thanks to have-made rights. Richard Vary, ‘The Case for the Defence: Access for All v. License to All’ (April 2020), at <https://www.twobirds.com/~media/pdfs/practice-areas/ip/the-case-for-the-defence.pdf?la=en&hash=A5A88D21EF55BE81B47C5FB16774785FBBD64B12>



PAEs in general have been present in SEP litigation in Europe. Studies found that NPEs as a whole were reportedly responsible for the majority of SEPs suits in the US (73%)<sup>93</sup> and Germany (78%) during the years 2000-2015 and 2000-2008 respectively.<sup>94</sup> In the UK, NPEs initiated a lesser but still significant number of SEP cases (22%) between 2000 and 2013.<sup>95</sup> The JRC's study similarly confirmed that European PAEs largely acquire and assert SEPs from the telecommunications sector.<sup>96</sup>

The fact that PAEs assert SEPs is not something that is *per se* harmful to the economy or consumers. PAEs are required to respect the FRAND commitment given by the original SEP owner during the standardisation process.<sup>97</sup> Thus, PAEs face limitations regarding the level of royalties (not higher than FRAND) and must fulfil certain requirements to obtain injunctions. The enforcement of FRAND-committed SEPs by PAEs is therefore no different than by practising entities.

The legal framework in Europe already provides appropriate safeguards against potentially abusive SEP assertions by any entity. The CJEU's *Huawei v ZTE* regulates the availability of injunctions for SEPs and provides a negotiation framework for both the SEP owner and the SEP user.<sup>98</sup> An infringer can escape an injunction provided it negotiates in good faith in a target oriented-manner and accepts a FRAND offer. The SEP owner, on the other hand, must also negotiate in good faith and present a court-verified FRAND offer. As a result, the SEP owner could hardly scare SEP-users into a settlement with the mere threat of an injunction. Indeed, national courts have applied the CJEU guidelines on numerous occasions, denied injunctions when faced with SEP owners that did not comply with the *Huawei v ZTE* criteria,<sup>99</sup> and only granted injunctions when the defendants did not act in good faith – i.e., were demonstrably shown to be an unwilling licensee.<sup>100</sup>

In the context of SEPs, “patent monetisation entities” or “Hybrid PAEs” are said to be problematic.<sup>101</sup> Hybrid PAEs assert patents on behalf of practising entities and share revenues with them. They

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<sup>93</sup> Jorge Contreras, 'Assertion of Standard Essential Patents by Non-Practicing Entities' in Daniel Sokol (ed.) *Patent Assertion Entities and Competition Law* (Cambridge University Press 2017) p. 58-59.

<sup>94</sup> Jorge Contreras, Fabian Gaessler, Christian Helmers, Brian Love, 'Litigation of Standard-Essential Patents in Europe: A Comparative Analysis' (2018) 32 *Berkeley Technology Law Review* 1457, 1472 (data for 2000-2008 period).

<sup>95</sup> *Ibid* (data for 2000-2013 period).

<sup>96</sup> JRC: PAEs in Europe (2016) (n 1) p. 50.

<sup>97</sup> Igor Nikolic, *Licensing Standard Essential Patents: FRAND and the Internet of Things* (2021 Hart Publishing) 67-70 (explaining how the transferability of a FRAND commitment is ensured by IPR policies of Standard-Development Organisations, guidelines by competition law authorities and the relevant case-law of some national courts).

<sup>98</sup> C-170/13 *Huawei v ZTE*, ECLI:EU:C:2015:477.

<sup>99</sup> *Pioneer v Acer*, 6 U 55/16, Karlsruhe Higher Regional Court (31 May 2016); *Philips v Wiko*, 6 U 183/16 Karlsruhe Higher Regional Court (30 October 2019).

<sup>100</sup> For summaries of national court decisions interpreted *Huawei v ZTE* ruling please see: <https://caselaw.4ipcouncil.com/guidance-national-courts> . A good example of the case where a NPE obtain injunction against a PE is *TQ Delta v ZyXEL* case in the UK where parties were negotiating for six years and, once the patents came close to expiration, PE refused to take a license on terms determined by the court. See *TQ Delta v ZyXEL* [2019] EWHC 745 (Pat).

<sup>101</sup> Fiona Scott-Morton, Carl Shapiro, 'Strategic Patent Acquisitions' (2014) 79 *Antitrust Law Journal* 464; Damien Geradin, 'Patent Assertion Entities and EU Competition Law' (2019) 15 *Journal of Competition Law & Economics* 204.

allegedly target competitors of the practising entity that transferred its SEPs in order to raise their licensing costs. However, because PAEs are bound by the FRAND commitment, those concerns are not justified. In UK's *Unwired Planet v Huawei* case, Unwired Planet, considered by some a Hybrid PAE, acquired 2.185 patents from Ericsson, of which 37 patent families were SEPs.<sup>102</sup> Following failed negotiation attempts, Unwired Planet sued Google, Samsung and Huawei for infringement of five SEPs and an implementation patent. To calculate FRAND royalties for Unwired Planet's SEP portfolio Mr Justice Birss examined Ericsson's prior licensing agreements for the SEPs in question.<sup>103</sup> Mr Justice Birss reasoned that the appropriate FRAND royalty for Unwired Planet's SEP portfolio should be the rate charged by Ericsson for its SEP portfolio, scaled down to represent the relative strength of Unwired Planet's smaller portfolio.<sup>104</sup> Therefore, considering the licensing agreements of the prior owner of the SEPs as a benchmark for calculating FRAND royalties practically allows for a result where the new owner (e.g. PAEs) does not impose royalties above FRAND on other practising companies.

## 6 What does the evidence of PAE litigation tell us?

Let us now look at the available evidence on the presence of PAE litigation in Europe. A study by Love et al. in 2017 found that PAEs accounted for roughly only 10% of patent suits in Germany and the UK, during the periods of 2000-2008 and 2000–2013, respectively.<sup>105</sup> A Darts-IP study from 2018 further showed that between 2007 and 2017 the average annual growth rate of actions related to PAEs in the EU was 19%.<sup>106</sup>

However, upon closer scrutiny, the data from the Dart-IP Report does not present any signs of a systematic abusive PAE litigation in the EU. Rather, the reported numbers show that the vast majority of EU patent litigation comes from practising entities and that PAEs are responsible for only a small percent of the overall patent litigation. Namely, the study provides information on the proportion of PAE litigation in relation to the total patent litigation in certain countries. Excluding Germany, PAEs were responsible for only 5% of the overall patent litigation.<sup>107</sup> In Germany, the percentage of PAE litigation was higher - 19.5%. Nevertheless, this still means that the majority of patent cases (80.5%) actually came from non-PAEs (presumably practising entities).<sup>108</sup> Moreover, it turns out that only around 475 suits were filed by PAEs in the whole of Europe in the last 10 years.<sup>109</sup> If those numbers are correct, it

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<sup>102</sup> *Unwired Planet v Huawei* [2017] EWHC 711 (Pat), 64.

<sup>103</sup> *Ibid*, 475-480.

<sup>104</sup> *Ibid*, 382-469.

<sup>105</sup> Brian Love et al, 'Patent Assertion Entities in Europe' in Daniel Sokol (ed), *Patent Assertion Entities and Competition Policy* (Cambridge University Press 2017).

<sup>106</sup> Darts IP, 'NPE Litigation in the European Union' (2018) (note that although the Dart-IP Report talks about NPEs, it defines them effectively as PAEs).

<sup>107</sup> *Ibid*, p. 11.

<sup>108</sup> *Ibid*.

<sup>109</sup> Darts IP, 'NPE Litigation in the European Union' (2018) p. 6; see also IAM, 'Despite the Spin, New Report Shows NPEs are Responsible for a Fraction of European Patent Litigation' (20 February 2018) available at: <http://www.iam-media.com/blog/Detail.aspx?g=84c119aa-7ec3-453b-bb4e-efca499f88a7>

is safe to conclude that there is no evidence of real danger, in particular considering that the study does not include information on different PAE business models and does not identify how many cases were initiated by Litigation PAEs, which were the only type of PAEs that were identified by the FTC and the Commission's JRC as possibly bringing nuisance suits.

Moreover, the reported 19% rise in PAE litigation does not distinguish between actions brought by or against PAEs. In fact, the majority of actions are actually initiated *against* PAEs.<sup>110</sup> The study first shows the number of overall "PAE actions", which include disputes where PAEs are a defendant, plaintiff and a party in the opposition proceedings at the European or national patent office. Out of this total number of PAE actions, PAEs initiated infringement proceedings in only 42% of cases.<sup>111</sup> In other words, the majority of "PAE litigation" in fact, involves PAEs being defendants in invalidity actions before courts or opposition actions before patent offices. This also suggests that companies are actively defending against PAE infringement claims and are not easily scared into settlements.

Furthermore, the chances of an SME being targeted by PAEs are very small. The study finds that just around 23.5% of all unique defendants in patent infringement cases initiated by PAEs are SMEs.<sup>112</sup> To put into perspective, this means that in the last 10 years there have been around 112 PAE suits filed in the whole EU against SMEs, which is hardly an explosive number. In fact, as discussed above, the JRC's study found that European innovative SMEs are actually benefiting from the presence of certain types of PAEs because they assist SMEs in identifying potential licensees, entering into licensing negotiations and securing licensing revenues that are higher and fairer than those they would have been able to achieve without the assistance of PAEs.<sup>113</sup>

Darts-IP Report further provides a list of the top ten most litigious PAEs.<sup>114</sup> However, it is important to again emphasise that PAEs are not a uniform category and use different business models. For example, Intellectual Ventures, the number one litigious PAE in the Dart-IP Report, is a Portfolio PAE that licenses approximately 30,000 patents and patent applications to large companies.<sup>115</sup> Acacia, Unwired Planet and Vringo are also known to amass large patent portfolios obtained from practising companies, and the JRC study classified them as Focused Assertion Entities.<sup>116</sup> Further, Sisvel is a patent pool and joint-licensing administrator;<sup>117</sup> and IPCom is a German company that became known for acquiring and licensing patents from Robert Bosch.<sup>118</sup> Therefore, the Darts-IP Report shows that there are PAEs with very different business models operating in Europe, but does not evidence the presence of those PAEs that are potentially harmful - Litigation or Serial Assertion Entities.

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<sup>110</sup> Ibid, p. 7.

<sup>111</sup> Ibid.

<sup>112</sup> Darts IP, 'NPE Litigation in the European Union' (2018) 10.

<sup>113</sup> JRC: PAEs in Europe (2016) (n 1) p. 51.

<sup>114</sup> Darts IP, 'NPE Litigation in the European Union' (2018) 10.

<sup>115</sup> <https://www.intellectualventures.com/what-we-do> ; JRSC: PAEs in Europe (2016) (n 1) p. 134.

<sup>116</sup> JRC: PAEs in Europe (2016) (n 1) p.135, 137.

<sup>117</sup> Ibid, 136.

<sup>118</sup> JRC: PAEs in Europe (2016) (n 1) p. 133.

Some recent academic literature also attempted to quantify the presence of NPEs and PAEs in Europe. Sterzi et al. examined patent applications at the EPO and found that NPEs had 19,323 pending patent applications.<sup>119</sup> They find that a large number of patent applications were directly filled by NPEs and that they actively engage in R&D activities, “thus debunking the common portrait of the NPE’s business model solely on patent acquisition mainly with the purpose of litigation”.<sup>120</sup> The authors then calculate that NPEs acquired only 3% of transacted patents during 2010-2020, meaning that practising entities were responsible for the purchase of the remaining 97% of transacted patents. In other words, NPEs and PAEs are not present in a material way in the European patent market. The authors also analysed the quality of patents acquired by NPEs, finding them to be the same or even higher quality than patents acquired by practising entities.<sup>121</sup> In another article, Sterzi et al attempted to identify the presence of Litigation PAEs.<sup>122</sup> They discovered 224 patent-holding independent dormant companies in the UK associated with the Litigation PAE business model. Thus, they demonstrate the existence of Litigation PAEs, but it would be interesting to further analyse their genuine activity. For example, new research could explore how much licensing revenue Litigation PAEs managed to obtain, and the number of initiated patent cases. This would give us a more complete picture of the Litigation PAEs in Europe, which is missing from the previous studies.

## 7 Market-based mechanisms against PAEs

Recently, market-based mechanisms have been created with the intention to mitigate the exposure to PAE infringement suits. Examples are: i) defensive patent aggregators; iii) cross-licensing societies; ii) defensive patent litigation insurances and iv) entities formed to invalidate patents . Defensive patent aggregators purchase patents for their members that may be acquired and asserted by PAEs. For example, RPX has spent over \$3.5 billion to acquire more than 170,000 patents,<sup>123</sup> and Allied Security Trust invested over \$450 million to purchase over 3,000 patents. <sup>124</sup> The aim is to remove potentially risky patents from the market or even out of active litigation in order to protect their members from PAE suits. Cross-licensing societies such as LOT Network ensure that if a member of the society decides to sell its patent to a PAE, all other members receive a license to that patent. The LOT Network reportedly

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<sup>119</sup> Valerio Sterzi, Cecilia Maronero, Gianluca Orsati, Adrea Vezzulli, ‘Non-Practicing Entities in Europe: an Empirical Analysis of Patent Acquisitios at the European Patent Office’ (November 2021) *Bordeaux Economics Working Papers*, BxWP2021023, p. 9 (the authors use the term NPE in a narrow sense, effectively a synonym to PAEs).

<sup>120</sup> Ibid. 3-4.

<sup>121</sup> Ibid, 4-5.

<sup>122</sup> Valerio Sterzi, Jean-Pauk. Rameshkoumar, Johannes Van Der Pol, ‘Non-practicing Entities and Transparency of Patent Ownership in Europe: the Case of UK Dormant Companies’ (2021) 172 *Technological Forecasting & Social Change* 121069; see also question raised by the member of the European Parliament following the publication of the article and the response by the European Commission: Marcel Kolaja, ‘Addressing the Problems of Patent Trolls in the EU’ (30 September 2020) available at: [https://www.europarl.europa.eu/doceo/document/E-9-2020-005354\\_EN.html](https://www.europarl.europa.eu/doceo/document/E-9-2020-005354_EN.html); answer by Commissioner Breton (8 January 2021) available at: [https://www.europarl.europa.eu/doceo/document/E-9-2020-005354-ASW\\_EN.html](https://www.europarl.europa.eu/doceo/document/E-9-2020-005354-ASW_EN.html)

<sup>123</sup> <https://www.rpxcorp.com/platform/rpx-network/>

<sup>124</sup> <https://www.ast.com/services/>

has over 2,200 members.<sup>125</sup> Defensive patent litigation insurance reimburses the policyholder for the litigation costs of patent infringement suits. Companies have increasingly started to offer insurance policies specifically against patent suits from NPEs.<sup>126</sup> Ganglmair, Helmers and Love conducted an empirical analysis and found that having an insurance policy significantly decreases the likelihood that an NPE will bring patent infringement suits.<sup>127</sup> Lastly, companies such as Unified Patents seek to invalidate patents of PAEs and PEs, and deter patent assertions.<sup>128</sup> All these different market-based solutions can greatly alleviate the risk of PAE patent infringement suits.

## 8 Measures to guard against litigation abuses

So far, the literature and evidence suggest that the European patent and litigation system is functioning well and that the fear of massive and opportunistic PAE litigation is unjustified. However, this does not mean that we should remain complacent. Instead, we should continue to preserve the incentives that protect against abuses of the patent and litigation system by any entity. This means first and foremost relying on judges to safeguard the litigation process on a case-by-case basis. Judges possess the necessary tools to tackle inappropriate actions by any party. When deciding on injunctions, they are required to take into account the principle of proportionality and may well find that, in certain instances, an injunction would be disproportionate. On the other hand, sometimes an injunction may be warranted to protect a patent's exclusionary right or as a tool to bring infringers back to the negotiating table. The injunction gap in Germany is not problematic, as German judges have the discretion to stay infringement proceedings if the invalidity process has been initiated, or to stay injunctions pending appeal. The recent changes to the German Patent Act now provide that the Federal Patent Court should aim to issue a preliminary opinion on the patent's validity with the infringement court within six months, precisely with the intention of avoiding an injunction gap.<sup>129</sup> Similarly, judges have the discretion to a certain degree in deciding the reasonable amount to be recovered by the losing party,<sup>130</sup> and may in some instances require payment of a security for costs of the proceedings in order to protect against frivolous patent infringement litigation.<sup>131</sup> All these remedies are already provided by the EU Directive on the Enforcement of IPRs or national civil procedure legislation.

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<sup>125</sup> <https://lotnet.com/>

<sup>126</sup> Examples are RPX, Aon, Llyod's IPOS and Antares, see RPX, 'RPX Insurance Services Launches Indemnification Coverage for NPE Litigation' (20 May 2015) available at: <https://www.rpxcorp.com/about/news/rpx-insurance-services-launches-indemnification-coverage-for-npe-litigation/>; AON, 'Litigation Risk Insurance Solutions' available at: <https://www.aon.com/m-and-a-transaction/transactionsolutions/litigationsolutions.jsp>; Neil Wilkof, 'IPOS, Lloyd's and Antares Launch IP Litigation Insurance Initiative' (21 June 2019) *IPKat*, available at: <https://ipkitten.blogspot.com/2019/06/ipos-lloyds-and-antares-launch-ip.html>

<sup>127</sup> Bernhard Ganglmair, Christian Helmers, Brian Love, 'The Effects of Patent Litigation Insurance: Theory and Evidence from NPEs' (2021) *The Journal of Law, Economics & Organization*.

<sup>128</sup> <https://www.unifiedpatents.com/faq>

<sup>129</sup> German Patent Act, Section 83(1).

<sup>130</sup> Directive 2004/48/EC on the Enforcement of Intellectual Property Rights [2004] OJ L 195/16 (IPR Enforcement Directive), Article 14.

<sup>131</sup> For instance see: UK Civil Procedure Rules, Rules and Practice Directions, Rule 25.12 Security for Costs.

## 9 Conclusion: Are PAEs a Threat to Europe?

In short, no. To date, there has been no evidence to support that PAEs have been or are a danger to Europe. The article has demonstrated that PAEs use a variety of business models and that studies by the FTC and European Commission's Joint Research Centre have identified only one PAE business model as potentially harmful and engaging in nuisance suits, called Litigation PAEs. At the moment there seems to be no publicly available empirical evidence attempting to quantify the presence of Litigation PAEs in Europe. European judges already enjoy the tools and experience to protect against any litigation abuse, either by denying or staying injunctions, requiring securities, and awarding legal costs to the prevailing party. Additionally, market-based solutions are appearing that can bring additional protection against PAE litigation. Admittedly, it might never be possible to eliminate all types of opportunistic lawsuits, there may always be a PAE or PE that may act strategically. However, the evidence suggests that PAE litigation is not a systematic problem but is something that can be dealt with on an *ad hoc* basis.

Still, this paper encourages studies to provide a clear picture of the presence and the activity of Litigation PAEs in Europe and the outcomes of the corresponding court cases. Until sound evidence is provided showing the presence and harmful impact of Litigation PAEs, Europe should abstain from weakening its IP enforcement system. Otherwise, it would risk suffering unintended harmful consequences on Europe's innovativeness which the IP system is designed to protect.