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Are PAEs a Threat to Europe?

Igor Nikolic^{*}

Abstract

Patent Assertion Entities, companies that monetise patents but do not practice them, have been over the years negatively portrayed as harmful “patent trolls” that engage in speculative and abusive patent litigation against manufacturing companies, threatening them with injunctions in order to extract settlements unrelated to the value of their technology. Although mass PAE litigation has mainly been US phenomenon, recent study indicated that PAEs are on the rise in Europe and a number of changes the European patent and litigation system have been recommended, in particular the denial of injunctive relief in case of finding of infringement of a valid patent.

This article provides a different perspective on PAEs. It will first show that it is incorrect to label all PAEs as “bad” actors. Generally, PAEs are in the business of patent licensing and serve a useful intermediary function in the market, facilitating licensing and technology transfer, while some may be engaging in aggressive monetisation practices. Whether there is abuse of litigation system would depend on the facts of the case, and not a priori whether plaintiff is PAE or not. Second, PAEs have mainly been US phenomenon and the incentives for abuse of European patent and litigation system are not present, or are not present to the same extent as in the US. A combination of factors, such as patent cases being decided by experienced judges, higher costs of patent enforcement, lower costs of defence, loser pays principle and generally higher quality of patents all disincentivise the emergence of opportunistic litigation practices. Finally, the available evidence shows that PAEs are actually responsible for very small number of patent litigation in the EU. The vast majority of litigation is between practicing entities and in majority of cases PAEs are actually defendants in invalidity suits initiated by practicing entities.

The evidence therefore suggests that European patent and litigation system is functioning well and that the fear about massive PAE litigation abuses is unfounded. European judges should continue in applying the relevant legal framework for granting legal remedies for infringement of IP rights, which already gives them the tools to guard against litigation abuses by any type of entity.

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Introduction

There has been much criticism of companies active in acquisition and monetisation of patents, called Patent Assertion Entities (PAEs).¹ Their business model broadly consists of licensing patents acquired from others, or assigned by others for monetisation purposes, and do not produce patent-implementing products themselves. They have been frequently negatively referred to as “patent trolls”, harmful predators that engage in speculative and abusive patent litigation against manufacturing companies, demanding excessive licensing fees by threatening with injunctions, harming manufacturing companies and rising prices for consumers.

PAEs have been mostly US phenomenon because of the nature of the US patent and litigation system that generally incentivise bringing patent litigation. Over the last few years there has been concern that Europe could well be the next target for predatory patent litigators.² More recently, some have expressed a concern that such litigation is indeed on a rise in Europe with one recent study, commissioned by the lobby group IP2Innovate, reporting 19% annual growth rate of allegedly abusive PAE litigation³ On the basis of these figures the study proposes a number of changes to the patent and litigation system, most notably the denial of injunctive relief to non-practicing patent holders, in order to curb perceived abuses.⁴

However, this article will show that the available evidence simply does not support the conclusion that PAEs are an existential threat to European companies or the European economy. It will first demonstrate that PAEs are not a unitary phenomenon but have various different business models. Some serve a useful intermediary function in the market, facilitating patent licensing and technology transfer, but some may also be abusing the litigation system. It is therefore incorrect to simply label all PAEs as “abusive”, without better understanding their different business models.

Second, the incentives for abuse of European patent and litigation system are not present, or are not present to the same extent as in the US. A combination of factors, such as patent cases being decided by experienced judges, higher costs of patent enforcement, lower costs of defence, loser pays principle and generally higher quality of patents all disincentivise the emergence of opportunistic

¹ 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) pp 15-17.

² See: Commission, ‘Enhancing the Patent System in Europe’ (Communication) COM(2007) 165 final, p. 12 (mentioning “patent trolls” in Europe).

³ Darts IP, ‘NPE Litigation in the European Union’ (2018) (Darts IP Report) available at: <https://www.darts-ip.com/npe-litigation-in-the-european-union-facts-and-figures-2/>

⁴ IP2Innovate, an organisation that includes members such as Intel, Google and Microsoft. Its Position Paper, 4 April 2017, is available at: http://ip2innovate.eu/wp-content/uploads/2017/04/IP2I_Coalitionscopeandobjectives_v15_040317.pdf

litigation practices. These incentives are highly unlikely to change with the establishment of the Unified Patent Court.⁵

Finally, the available data does not show the presence of harmful PAE litigation in the EU. In fact, PAEs as a group are responsible for only a small percent of overall patent litigation. A study by the European Commission (EC) further found that while various PAEs indeed operate within EU, it did not find the presence of PAEs with aggressive monetisation practices as seen and criticised in the US.⁶

Therefore, the evidence suggests that European patent and litigation system is functioning well and that the fear about massive PAE litigation abuses is exaggerated. Proposals to automatically remove injunctions as a legal remedy from all those patent holders who do not themselves practice their patents is not supported with empirical evidence and is wholly disproportionate, prejudicial and discriminatory. It would obliterate any incentives of companies to take a license to those patents, and would be an open invitation to free ride and infringe patents. Such a development would devalue patent rights and would be devastating to innovation and undermine EU's innovativeness.

Rather, Europe should continue to preserve the incentives that reduce the potential for opportunistic litigation. European judges should observe the relevant legal framework for infringement of IP rights which gives them certain discretion in granting legal remedies suited to the specifics of the case. This, in particular, means adhering to Article 3 of the Directive on the Enforcement of IP Rights which provides that legal remedies should be "effective, proportionate and dissuasive" and applied in manner as to "provide safeguards against their abuse".⁷ Judges may use this principle and decide on a case by case basis whether injunction is warranted. There may well be cases where the grant of injunction is unjustified and damages would be the appropriate remedy, but there also may be cases where injunction is justified and necessary. In case of suspicion that PAEs are engaging in meritless litigation, judges may also require posting a bond by PAEs as a security for litigation costs in order to discourage pursuing baseless claims. Finally, judges should ensure that reasonable and proportionate costs are indeed awarded to the prevailing party. All these remedies are already provided by the EU Directive on the Enforcement of IPRs and we should have more faith in our judges in guarding against litigation abuses by any entity.

The structure of the article is the following: Part 1 will define what PAEs are and will show how PAEs themselves have different business models. Part 2 will describe why PAEs have been problematic in

⁵Unified Patent Court will be a common patent court for the Member States of the EU that have signed and ratified the UPC Agreement. It will have exclusive jurisdiction to hear European patents with unitary effects and European patents. Until the date of writing, all EU Member States except Spain and Poland have signed the UPC Agreement. For more information see further discussion in the article below and <https://www.unified-patent-court.org>

⁶ JRC: PAEs in Europe (2016) (n 1) p. 143.

⁷ Directive 2004/48/EC on the Enforcement of Intellectual Property Rights [2004] OJ L 195/16 (IPR Enforcement Directive).

the US, and Part 3 will show how the specifics of the US patent and litigation system has created systematic incentives for abuse. It will also demonstrate how recent changes in the US system have reduced incentives for abuse, which is resulting in a decrease of PAE litigation overall. Part 4 will analyse at European patent and litigation system and demonstrate how incentives for opportunistic behaviour are not present or are present in a lesser extent than in the US. Part 5 will look at publicly available studies for the evidence on PAE activity in Europe. Part 6 will explain how devising special legal rules applicable only to PAEs would be detrimental to European innovation and Part 7 will conclude.

1. What are PAEs?

Names matter. It is important to know who exactly are we talking about when we the walk about PAEs. The terminology used in patent policy debates today is ill-defined, confused and often misleading. It is quite often that terms “non-practicing entity”, “patent assertion entity” and “patent trolls” are used interchangeably,⁸ although there is a crucial distinction between all these terms and they should not be equated. Furthermore, such entities are typically portrayed negatively in one-sided light,⁹ although media coverage often does not provide any studies or analysis to support such negative perspective.

Regarding definitions, the term “Non-Practicing Entities” (NPEs) refers to entities that hold patents but do not manufacture any products or provide services implementing them. NPEs however are not a uniform category, but include a wide range of entities with different business models.¹⁰ NPEs for example include universities, start-ups, sole inventors or large technology developing companies. What they all have in common is that they engage in research and development, and patent their inventions. They may however license their technology to manufacturing entities that can commercialise their inventions. NPEs are not a new phenomenon, historically many great inventors such as Thomas Edison, inventor of 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.¹¹ It is hard to image them being called

⁸ See: IP2Innovate Press Release 19 February, available at http://www.ip2innovate.eu/wp-content/uploads/2018/02/IP2I_DARTS-Report-Launch-Press-release_v7_190218.pdf

⁹ See: Edward Lee ‘Patent Trolls: Moral Panics, Motions in Limine, and Patent Reform’ (2015) 19 *Stanford Technology Law Review* 113 (analysing US media and finding that they often use the term “patent troll” in negative light with very little analysis or empirical support).

¹⁰ For example, see John Allisson, Mark Lemley and Joshua Walker, ‘Extreme Value or Trolls on Top? The Characteristics of the Most Litigated Patents’ (2009) 158 *University of Pennsylvania Law Review* 1 (identifying 10 different types of NPEs); Christopher Cotropia, Jay Kesan, David Schwartz, ‘Unpacking Patent Assertion Entities (PAEs)’ (2014) 99 *Minnesota Law Review* 649 (identifying 7 different types of NPEs).

¹¹ 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.

“patent trolls”, but they would fit today’s definition if they dared threaten or engage in patent enforcement.

A specific type of NPEs are Patent Assertion Entities. They typically do not engage in any research and do not develop patented technologies. Instead, their primary business model is licensing patents to practicing entities. They may either directly acquire patents from third parties, or third parties may assign their patents to PAEs for monetisation purposes..¹² By definition this is not something that is “bad”. Patents give their holders the right to exclude others from using them, and companies may choose either to practice the patents themselves or to license them to others who would commercialising their technology. Patent licensing falls within the right of patent holders and in itself there is nothing illegal or wrong in asking companies that infringe on valid patents to take a license for their use.

PAEs however are also not a uniform phenomenon and come in different types. Studies by the US Federal Trade Commission and the European Commission have extensively analysed different PAEs and came to the conclusion that they use various business strategies with distinctive effects.¹³

For example, the FTC identified two types of PAEs: ‘Portfolio PAE’ and ‘Litigation PAE’.¹⁴ Portfolio PAEs amass a large patent portfolio numbering thousands of patents, and generate revenue by licensing the whole portfolio, often without first suing potential infringer.¹⁵ They fund their initial patent acquisitions through capital raised by investors, including institutional investors or practicing entities.¹⁶ Portfolio PAEs typically conclude licenses that generate relatively large revenues.¹⁷ The FTC also found that Portfolio PAEs have similar behaviour as practicing entities when asserting patents in wireless sector...¹⁸

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.¹⁹ Most licences yielded royalties less than \$300,000, which is below the average early stage litigation costs for defending patent infringement.²⁰

¹² For definition see: FTC PAE Activity Study (2016) (n 1) pp 15-17; JRC: PAEs in Europe (2016) (n 1) pp 15-17.

¹³ Ibid.

¹⁴ FTC: PAE Activity Study (2016) (n 1), p. 3.

¹⁵ Ibid.

¹⁶ Ibid, p. 45-47.

¹⁷ 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).

¹⁸ Ibid, p. 104 (conducting a case study in wireless communications sector and finding similarities between Portfolio PAEs and manufacturing entities when they assert patents).

¹⁹ Ibid, p. 4.

²⁰ Ibid, p. 43.

Because of these characteristics, the FTC considered Litigation PAE behaviour to be a nuisance litigation.²¹

An example of Litigation PAEs is MPHJ Technology Investments, a company investigated by the FTC.²² 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,²³ 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 reply. In reality however, at the time it sent the first wave of letters it had concluded no licenses, also had no intention to initiate any lawsuits, and never in fact filed any such lawsuit. The MPHJ settled with the FTC and was prohibited from making similar deceptive representations when asserting its patents. The behaviour of Litigation PAEs therefore clearly exhibit the characteristics of what we would call “trolls”.

In Europe, the European Commission's Joint Research Centre's (JRC) study on PAEs in Europe identified 6 different PAE business models.²⁴ It found that PAEs can be differentiated whether they target main players in one industry with relatively high-quality patents in order to maximise the licensing value of such patents ('focused assertion entities'),²⁵ 'strategic assertion entities' consisting of practicing entities in the ICT sector that implement patented technology derived from their own R&D activities and that assert patents with the aim of blocking competitors and defending their market share,²⁶ and 'patent monetisation entities' that assert patents on behalf of practicing entities and share revenues with them.²⁷ The JRC also found that there are PAEs that collaborate with practicing entities and assist them in facilitating licensing. One type are 'license facilitating entities' that include companies that engage in significant R&D and patenting but lack the production capabilities to commercialise their innovation.²⁸ These entities generate revenues primarily from licensing their IP to practicing entities and may also provide consulting services. Patent pools are in this category, they combine patents from practicing entities in certain technological area and offer a joint license for the whole portfolio, thus reducing transaction costs.²⁹ Similarly, 'defensive patent aggregators' acquire patents that can be asserted against practicing entities and then license the entire portfolio to its members in order to mitigate the risk of patent infringement.³⁰ Finally, the JRC identified 'serial assertion entities' that massively assert patents against large number of entities, mostly SMEs and end-users, using patents of relatively dubious quality with broad functional claims, with the aim of

²¹ Ibid, p. 4.

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

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

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

²⁵ Ibid, p. 130.

²⁶ Ibid, p. 132.

²⁷ Ibid, p. 132.

²⁸ Ibid, p. 133.

²⁹ Ibid, p. 133.

³⁰ Ibid, p. 133.

achieving fast settlements.³¹ Therefore, only serial assertion entities may be considered problematic and exhibit similar characteristics as Litigation PAEs identified in the US.

The above analysis shows that it is incorrect to label all NPEs and PAEs as harmful “patent trolls”. In fact, the term “patent troll” is imprecise and unhelpful in any meaningful discussion because it is emotional and assumes negative value judgments and biases against certain types of patent enforcement.³² However, intellectual honesty requires us to recognise that merely labelling a business with a negative moniker like “patent troll” does not absolve the need for a rigorous analysis; to consider the quality of patents, whether they are valid and infringed, rather than merely condemn patent holders that enforce patents. It has become too easy today for any company that enforces its patent to be called a “troll”. As one author observes: “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”.³³

That said, the studies of the FTC and JRC identified one particular type – Litigation PAE or Serial Assertion Entity – as potentially engaging in mass and ‘abusive’ litigation. The effects of other PAE business models is much more nuanced and all depends on the facts of the case.

2. Are PAEs problematic?

Having defined what PAEs are, let us look at what are the perceived problems with PAE patent enforcement. PAEs are primarily US phenomenon that has emerged from the specific US patent and litigation system, which is the reasons why the majority of literature discussing the effects of PAEs comes from the US.

The major criticism of PAEs business model is that they supposedly impose licensing and/or litigation costs that do not reflect the true value of the patented technology.³⁴ Critics argue that PAEs are able to extract unfair licensing costs not reflecting that overall value of the patented technology because PAEs are able to use the peculiarities of litigation, such high costs of litigation, the threat of injunctive relief, high damage awards, their litigious reputation, and the fact that PAEs are generally immune from counter-suits because they do not produce patented products, to force companies into settlement or licensing agreements for patents of questionable value³⁵ Simply put, it may be cheaper

³¹ Ibid, p. 131.

³² See: FTC: PAE Activity Study (2016) (n 1) p. 17.

³³ Michael Risch, ‘Framing the Patent Troll Debate’ (2014) 24 *Expert Opinion on Therapeutic Patents* 127.

³⁴ For overview of literature criticising the PAE business model in the US see: 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).

³⁵ See: FTC Patent Assertion Entity Study (2016) (n 10), p. 24 (providing overview of the literature); Fiona Scot Morton, Carl Shapiro, ‘Strategic Patent Acquisitions’ (2014) 79 *Antitrust Law Journal* 463 (explaining how PAEs use “outside threats”, such as requesting injunctions, suing end-customers, strategically filing suits during target’s

for practicing entities to settle then to litigate the validity and infringement of patents. Because of this, PAEs have been claimed to impose a 'tax on innovation',³⁶

Another criticism in the US is that PAEs mainly assert software patents with broad and vague functional claims,³⁷ mainly target small companies,³⁸ companies with large cash stocks,³⁹ or target companies right before initial public offerings.⁴⁰

In the US, until recently PAE litigation has been on the rise.⁴¹ According to one study, patent litigation by NPEs (as a whole group) peaked during 2012-2015 when the majority of all patent suits were initiated by NPEs, of which the large majority are PAEs.⁴² For instance, in 2012 and 2013 NPEs brought in total 64% and 67% of all patent suits in the US, respectively.⁴³ They also sued the majority of defendants in the same period.⁴⁴

The PAEs litigation has raised concerns from the US academics,⁴⁵ government agencies,⁴⁶ Congress,⁴⁷ and even the former US president,⁴⁸ who all proposed different measures to be taken to curb the perceived abusive litigation by PAEs.

initial public offering or other funding events, hiding their patent portfolio and building reputation as aggressive patent monetisers, to extract unreasonably high royalties from practicing firms); Executive Office of the President, 'Patent Assertion and US Innovation', June 2013 (overview of the arguments against PAEs).

³⁶ See: Mark Lemley, Robin Feldman, 'Is Patent Enforcement Efficient?' (2018) 98 *Boston Law Review* 102 (describing how PAE litigation represents a tax on innovation); FTC: PAE Activity Study (2016) (n 1) p. 24; James Bessen, Michael Meurer, 'The Direct Costs from NPE Disputes' (2014) 99 *Cornell Law Review* 387 (finding that PAE patent assertion imposed costs to the US society of \$500 billion from 1990 to 2010, and approximately \$30 billion in 2011 alone); RPX Corporation, 'NPE Litigation: Costs by Key Events' (2015) (finding that PAE litigation costed operating companies around \$12.2 billion in 2014); however see: David Schwartz, Jay Kesan, 'Analyzing the Role of Non-Practicing Entities in the Patent System' (2014) *Cornell Law Review* 425 (criticising the methodology and results of Bessen and Meurer).

³⁷ See: FTC, 'PAE Activity Study' (2016) (n 1) p. 135 (finding that around 75% of studied PAE patents contained software related claims); US Government Accountability Office, Report to Congressional Committee, 'Intellectual Property: Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality', August 2013 (GAO Report) p. 22 (finding that 84% of PAE lawsuits in the period of 2007-2011 involved software related patents).

³⁸ Coleen Chien, 'Startups and Patent Trolls' (2014) 17 *Stanford Technology Law Review* 461.

³⁹ Lauren Cohen, Umit Gurun, Scott Kominers, 'Patent Trolls: Evidence from Targeted Firms' (2015) *HBS Working Paper* 15-002.

⁴⁰ Robin Feldman, Evan Frondorf, 'Patent Demands and Initial Public Offerings' (2015) *Stanford Technology Law Review* 52

⁴¹ See: GAO Report (2013) (n 37) p 17 (finding that during the period of 2007 to 2011 PAEs initiated on average 19% of all patent suits. 17% in 2007 to 24% in 2011)

⁴² See RPX Corp, '2015 NPE Activity Highlights' (2016).

⁴³ Ibid, p. 4; data from the RPX Corp was also used by: Fiona Scot Morton, Carl Shapiro, 'Strategic Patent Acquisitions' (2014) 79 *Antitrust Law Journal* 463; and the White House, see: Executive Office of the President, 'Patent Assertion and US Innovation' (2013) p. 5.

⁴⁴ RPX Corp, '2015 NPE Activity Highlights' (2016) p. 4.

⁴⁵ 60 US academic wrote a letter to the Congress in support of patent reform legislation against PAEs, https://www.eff.org/files/2013/11/25/prof_ltr_nov_25.pdf.

⁴⁶ FTC, 'The Evolving IP Marketplace' (2011); FTC, 'PAE Activity Study' (2016) (n 1).

⁴⁷ Congress was considering several legislative proposal aimed against PAEs. For good overview see: FTC, 'PAE Activity Study' (2016) (n 1) pp 32-33; also Fiona Scott Morton, Carl Shapiro, 'Patent Assertions: Are We Any

However, the problem with these studies is that they do not make a distinction between different types of NPEs and PAEs. As explained above, it is incorrect to assume that all litigation by NPEs and PAEs is “abusive” without a better understanding of facts of the case and the precise business model of PAE in question. That said, rise in PAE litigation in general can be explained by the peculiarities of the US patent and litigation system which will be explained below.

3. PAEs are a phenomenon of specific US litigation and patent system

There are several systematic litigation and patent factors specific to the US that incentives some patent holders to manipulate the system to obtain early settlement for patents of questionable value. The following combination of factors may lead to such result:

- 1) Patent cases are typically heard and decided by juries. Juries are generally not patent law specialists and studies have shown that they on average find more in favour of patentees than judges. According to PWC Study, juries on average have ruled in favour of NPE patent holders 77% of the time, while when the case is heard by a judge NPE's prevailed 36% of the time.⁴⁹ While this finding does not tell us much about the quality of patents, it does suggest that some patent holders may prefer for the case to be heard by juries and that judges may be better at identify unmeritous claims.
- 2) Patent damages are generally seen as high, especially when awarded by juries. The PWC Study shows that median patent damages award in the period of 2012-2016 was \$8.9 million,⁵⁰ while juries awarded on average 15 times higher damages than when the case is decided by judges (average jury award being \$9.5 million, as opposed to \$0.6 by judge).⁵¹ Jury awards are often reduced on appeal when the case is heard by judges.⁵²
- 3) High costs of litigation, including disproportionately high discovery costs. The AIPLA study estimates that the average costs of discovery when the patent infringement suit is brought by NPE range between \$300,000 to \$2 million, depending on the damages at stake.⁵³ For example, the average costs of discovery are \$300,000 when damages at stake are less than \$1 million, while the average costs of discovery are \$2 million when damages at stake are more than \$25

Closer to Aligning Reward to Contribution?’ (2015) NBER Working Paper No. 21678, p. 12-13 (discussing and supporting H.R.9 proposal).

⁴⁸ Executive Office of the President, ‘Patent Assertion and US Innovation,’ (June 2013); Council of Economic Advisors Issue Brief, ‘The Patent Litigation Landscape: Recent Research and Developments’ (March 2016).

⁴⁹ PWC, Patent Litigation Study (2017) p. 15.

⁵⁰ PWC, Patent Litigation Study (2017) p. 9.

⁵¹ Ibid, p.10.

⁵² Ibid, p. 28 (finding that 52% of appealed cases are modified in some regard).

⁵³ American Intellectual Property Law Association (AIPLA), ‘2015 Report on the Economic Survey’ (2015), p. 38

million.⁵⁴ Taking all costs into consideration, the AIPLA estimates the average costs of patent litigation initiated by NPEs to be between \$500,000 to \$3,750,000 depending on the damages at stake.⁵⁵ The costs are estimated per one patent, so if more patents are at issue (as is often the case) total costs would be higher.

- 4) Discovery costs disproportionately effects practicing companies, because PAEs do not make product they have less information to disclose and much lower discovery costs. PAEs also cannot be counter suited for patent infringement. Precisely this asymmetry in litigation costs may make it cheaper for practicing companies to settle than to litigate the validity and infringement of patents.
- 5) There is generally no fee shifting in the US, each party is responsible for its own litigation costs. The US Patent Acts expressly provides that only “in exceptional circumstance [the court] may award reasonable attorney fees to the prevailing party”.⁵⁶ Also, the US law allows for lawyers working on the contingency fee arrangements,⁵⁷ to be paid only after winning the case and based on the percentage of awarded damages. These adds another litigation incentive to some PAEs because they do not need to pay any attorney costs up front (if they chose contingency fees arrangement),⁵⁸ and even if they lose the case they will not necessarily be responsible for paying the opposing party’s litigation costs.
- 6) The majority of PAEs chose to bring cases at the Eastern District Court of Texas.⁵⁹ The reason is the view that juries and courts there are more sympathetic to patentees and studies have confirmed that patentees there have among the highest success rates.⁶⁰
- 7) Finally, PAEs mostly obtain and sue on software related patents. Studies have shown that approximately 75% of studied PAEs patents include software related claim,⁶¹ and that about 84% of PAE initiated suits involved software related patents.⁶² Until recently (see below), software and

⁵⁴ Ibid. (further, AIPLA estimates that when between \$1 million and \$10 million damages are at stake the average costs of discovery are \$570,000; and when \$10 to \$25 million damages are at stake the average costs of discovery are \$1,200,000)

⁵⁵ Ibid.

⁵⁶ 35 U.S.C. 285

⁵⁷ See: David Schwartz, ‘The Rise of Contingency Fee Representations in Patent Litigation’ (2012) 64 *Alabama Law Review* 335.

⁵⁸ See: FTC: PAE Activity Study (2016) (n 1) p. 49. (finding that Litigation PAEs usually used outside legal counsel on contingency fee basis).

⁵⁹ See: FTC, ‘PAE Activity Study’ (2016) (n 1) p. 80 (finding that studies PAE brought 53% of cases before the E.D. Texas); similar results also in: PWC ‘Patent Litigation Study’ (2017) p. 25; GAO Report 2013 (n 37) pp 24-25.

⁶⁰ See: PWC ‘Patent Litigation Study’ (2017) pp 24-25 (finding the overall success rate of all patentees in E.D. Texas of 54%, and NPEs of 49%).

⁶¹ See FTC: PAE Activity Study (2016) (n 1) p. 135. (finding also that Litigation PAEs, 73% of litigated patents included software related claims, and 90% of litigated Portfolio PAE patents included software related claims);

⁶² GAO Report (2013) (n 37) p. 22.

business methods have been broadly patentable in the US.⁶³ The perceived problem with software patents is that they often contain broad and vague claims such as “functional claims” i.e. claiming the entire device performing a certain function, regardless of the way the function is performed.⁶⁴ Functional claiming allows the patent holder to claim that their patents cover entire technology or future technologies that were not originally covered. Therefore, overly broad and vague software patents may allow for the strategy of mass litigation against various entities in different industry sectors.

Therefore, the US litigation system has systematic disproportionate incentives which make it cheaper to sue if being a PAE, but more costly to defend patent infringement suit. Combined with overly broad and vague software patents, this incentivised some, but not all, PAEs to assert software patents and demand quick settlement below the average costs of discovery.

3.1. Changes in the US litigation and patent system have reduced incentives for abusive PAE litigation

A number of changes have been made over the recent years in the US aimed at correcting the patent and litigation incentives for abuse by some PAEs.

The US Congress adopted America Invents Act (AIA) in 2011 which, among others, introduced certain changes that are of relevance for PAE litigation. First, it made more difficult for PAEs to sue multiple defendants in one suit.⁶⁵ While previously PAEs might have sued many unrelated defendants in a single suit, now they would have to file separate suits for each defendant because of anti-joinder rules. This rule therefore makes it more costly for a PAE to make massive suits against multiple alleged infringers.

More importantly, the AIA introduced two venues for challenging the validity of patents before the USPTO: post-grant and inter-partes review.⁶⁶ The AIA enabled any interested third party to challenge issued patents before a special Patent Trial and Appeal Board (PTAB) within nine months of issuance of the patent at the latest (post-grant review) or after 9 months of issuance but on limited grounds for invalidity (inter-partes review). These procedures before PTAB should in theory enable early challenges of patents, especially broad software patents, which should be decided by technical and

⁶³ See: *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) (holding that a mathematical formula in the form of a computer program is patentable if applied in a useful way); *Bilski v. Kappos*, 561 U.S. 593 (S. Ct. 2010) (holding that business methods are patentable in principle).

⁶⁴ Executive Office of the President, ‘Patent Assertion and US Innovation,’ (June 2013) p. 8; Mark Lemley, ‘Software Patents and the Return of Functional Claiming’ (2013) 4 *Wisconsin Law Review* 905; also GAO Report, pp. 28-29 (discussing broad and vague claims in software related patents).

⁶⁵ See: 35 U.S.C. 299 Joinder Rules.

⁶⁶ 35 U.S.C. 311 (inter partes review); 35 U.S.C. 321 (post grant review).

qualified judges. The procedures should also be faster (the AIA provides that procedures should be concluded within a year) and should be less expensive than challenging validity before courts. Parties are indeed using the procedures before PTAB, as one study shows that approximately a third of all patent cases in 2016 and 2017 are brought before the PTAB.⁶⁷

Congress was also considering several legislative proposals that would limit the litigation incentives for PAEs. The effects of these proposals would be to require greater specificity in demand letters; require more details about infringement when bringing the suit; greater transparency of patent ownership; enable customers or end-users to stay infringement litigation in order to allow the manufacturer of accused products to intervene in the litigation; limit discovery costs, and introduce fee shifting to losing parties.⁶⁸ However, to date, none of these proposals have been adopted.

Individual states have, however, enacted legislation against bad faith patent assertions with the aim of preventing the practice of sending vague and deceptive demand letters to mass number of end-users.⁶⁹ What constitutes “bad faith” patent assertion varies between states,⁷⁰ but some examples are the lack of key information about the infringed patent (i.e. patent number), lack of factual allegations concerning infringement, falsely stating that the lawsuit has been filed (when it is not), asserting the patent which was held invalid or unenforceable, asserting the expired patent for allegedly infringing activity that occurred after the expiration, etc.⁷¹ Typically the state attorney general would bring an action on behalf of the state seeking civil penalty for bad faith patent assertions.

Further, the former US President, US PTO and the FTC all proposed certain measures to be adopted relating mostly to enhancing the quality of patents, increasing transparency of patent ownership, reducing discovery costs and staying actions against end-users.⁷²

Finally, the US Supreme Court decided several cases that will have an impact on Litigation PAEs. In 2006 in *eBay*, the Supreme Court rejected the general rule of granting injunction after finding of

⁶⁷ <https://www.unifiedpatents.com/news/2018/3/30/q1-2018-patent-dispute-report>

⁶⁸ For overview of legislation before Congress see: <http://www.patentprogress.org/patent-progress-legislation-guides/patent-progresss-guide-patent-reform-legislation/> ; for good overview of contents of two proposals (H.R. 9 and S. 1137) see: FTC, ‘PAE Activity Study’ (2016) (n 10) pp 32-33.

⁶⁹ For overview of states adopting legislation against bad faith patent assertions: <http://www.patentprogress.org/patent-progress-legislation-guides/patent-progresss-guide-state-patent-legislation/> ; for short summaries see: <http://www.ncsl.org/research/financial-services-and-commerce/2015-patent-trolling-legislation.aspx>

⁷⁰ For overview see: Qian Hung et al, ‘Navigating the Landscape of Anti-Trolling Legislation’ *Intellectual Property Magazine*, June 2016.

⁷¹ Examples takes from S.B. 1457 (Texas).

⁷² See: The White House, ‘Fact Sheet: White House Task Force on High-Tech Patent Issues’ June 2013 (proposing seven legislative measures, and five executive measures by the USPTO aimed at increasing the quality of patents, preventing functional claiming and increasing the transparency of patent ownership); The White House, ‘Fact Sheet - Executive Actions: Answering the President’s Call to Strengthen Our Patent System and Foster Innovation’ February 2014 (explaining measures taken by the USPTO); FTC, ‘PAE Activity Report’ (2016) (n 8) pp 9-13.

infringement and validity of patent, and made it much more difficult to obtain injunctions.⁷³ Later in *Alice* in 2014,⁷⁴ the Supreme Court made it harder to patent business method and software patents; *Octane Fitness* and *Highmark* made it easier to recover reasonable costs and attorney fees from losing party, although they are still legally granted only in exceptional cases,⁷⁵ and *TC Heartland* in 2017 made it harder to bring suits in E.D. Texas.⁷⁶

All these changes combined inevitably had impact on the whole US patent and litigation system, not only on the behaviour of Litigation PAEs. The first observable impact is that since 2015 there is a steady decline of patent litigation.⁷⁷ This may indicate that incentives to bringing new patent cases have been reduced. However, importantly, the data also tells us that the amount of litigation by NPEs, as a whole group, is also decreasing. According to data from Unified Patents, from 2015 the number of new patent cases initiated by NPEs is decreasing by around 20% per year.⁷⁸ The total share of NPE litigation as opposed to PE litigation is also decreasing. In 2015 NPEs brought 67% of all patent cases, 60% of all cases in 2016 and 57% of all cases in 2017. In 2018, Unified Patents estimates that total NPE litigation would be around 46% of all cases.

Some caution about the numbers. The data from Unified Patents does not make distinction between different types of NPE or different types of PAEs, it only includes aggregated data on NPEs as a whole. As we have seen above, there are many different NPE and PAE business models and this data does not tell us much about the number of PAEs that may be abusive, such as the percent of Litigation PAEs. However, it is safe to assume that percentage of litigation initiated by Litigation PAEs is smaller than percentage of NPEs litigation as a whole. This indicates that measures in the US have to some extent reduced incentives for abusive PAE litigation.

4. Europe is unlikely to see abusive PAE litigation because of a different legal regime

4.1. Current patent and litigation system

⁷³ *eBay v MercExchange*, 126 S. Ct. 1837 (2006) (for granting injunction the patentee must satisfy four factors: (i) that it has suffered an irreparable injury; (ii) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (iii) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (iv) that the public interest would not be disserved by a permanent injunction).

⁷⁴ *Alice Corp. Pty. Ltd. v. CLS Bank Intern.*, 134 S.Ct. 2347 (2014) (holding that patent claims that combine an abstract idea with a computer implementation that is not itself inventive are not patentable).

⁷⁵ *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S.Ct. 1749 (2014) (holding that previous test of deciding whether the case was 'exceptional' was too rigid and that the 'exceptional case is one that stands out from others with respect to the substantive strength of a party's litigating position (considering both the governing law and the facts of the case) or the unreasonable manner in which the case was litigated); *Highmark Inc. v. Allcare Health Management System, Inc.*, 134 S.Ct. 1744 (2014) (holding that the appellate court should apply an abuse of discretion standard in reviewing district court's decision on attorney's fees, instead of *de novo* review).

⁷⁶ *TC Heartland v Kraft Foods*, 137 S. Ct. 1514 (2017) (holding that patent infringement cases can only be filed in the jurisdiction where the accused infringer is incorporated).

⁷⁷ <https://www.unifiedpatents.com/news/2018/3/30/q1-2018-patent-dispute-report>

⁷⁸ *Ibid.*

In Europe the incentives for abuse of patent and litigation system are not present, or are not present to the same extent as in the US. The following combination of factors disincentives the appearance of abusive PAE business models:

- 1) In Europe judges decide patent cases which, unlike juries in the US, are more qualified and have the tools to guard against any potential litigation abuses.
- 2) Fragmented national patent jurisdictions. 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 as the US, a patentee would need to first obtain different national patents and then assert them simultaneously across in several European jurisdictions. This significantly increases costs of enforcement and disincentives mass assertion activity because it required knowledge of various national patent laws and court systems as well as hiring and paying lawyers in each jurisdiction.
- 3) 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 EUR 200,000 – 250,000.⁷⁹ This is considerably lower than in the US where the average costs of NPE litigation with the smallest amount at stake is \$500,000 and going as high as \$3,7 million with the most valuable suits.⁸⁰
- 4) Patent damages are on average lower than in the US. A study by Technopolis shows that during 2010-2015 and average patent damages in Germany were EUR 676,000 and in the UK EUR 380,000.⁸¹ Love et al similarly found that estimated value of studied patent cases in Germany and the UK is less than \$1 million for the overwhelming majority of cases.⁸²
- 5) Loser pays principle is a general rule in patent litigation where the losing party will pay reasonable legal costs of the opposing party.⁸³ In other words, if PAEs lose the case they will have to pay not

⁷⁹ Stuart Graham, Nicolas Van Zeebroeck, 'Comparing Patent Litigation Across Europe: A First Look' (2014) 17 *Stanford Technology Law Review* 655, 667 (finding that average costs of patent litigation in France between EUR 50,000 – 200,000; Germany EUR 50,000 – 250,000; the Netherlands EUR 60,000 – 200,000; Spain EUR 50,000 – 100,000; Italy EUR 200,000 – 400,000. In the UK estimated average costs of patent litigation range between EUR 150,000 to 1,5 million).

⁸⁰ See also JRSC: PAEs in Europe (2016) (n 1) p. 53 (finding based on their interviews that the average costs of patent litigation are costs of patent litigation in Europe to be \$550,000 to \$3,5 million, while in the US is \$10 million).

⁸¹ Technopolis Group in consortium with EY and Schallast Rechtsanwälte, 'Support Study for the Ex-Post Evaluation and Ex-Ante Impact Analysis of the IPR Enforcement Directive (IPRED)' (2017), p. 258.

⁸² 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.

⁸³ IPR Enforcement Directive (n 7), Article 14.

only their own but also the legal costs of the other party. This makes the option to litigate more costly. Love et al. find this factor to be significant deterrent to PAE litigation in Europe.⁸⁴

- 6) Injunctions, as a rule, are not automatic. The IPR Enforcement Directive provides that injunctions “may be” issued against the infringer,⁸⁵ and that as a general obligation all procedures and remedies must be fair and equitable, effective, proportionate and dissuasive, and must provide for safeguards against their abuse.⁸⁶ 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 recent Guidelines confirmed this approach,⁸⁷ and a recent ECJ’s *Huawei* case further constrained the availability of injunctions for standard essential patents, where it imposed a licensing framework for both parties with the patent holder risking competition law liability if it does not comply.⁸⁸
- 7) Different regime for patentability of software. Unlike the US, software as such is not patentable. The Article 52 of the European Patent Convention expressly excludes from patentability “programs for computers.”⁸⁹ Instead, software enjoys copyright protection.⁹⁰ Nevertheless, in some instances it may be possible to obtain a patent before the EPO for “computer implemented inventions” if it contains at least one novel feature that is “technical” and that solves a “technical problem” in a non-obvious manner.⁹¹ Copyright is therefore the primary avenue for protection of software and in instances when it can be patented the standard for software patentability is narrower than in the US.
- 8) Europe generally has higher quality patents. A study by Tapia for instance shows that out of all initiated patent infringement cases in Germany in 2015, only 2.8% ended in full invalidation of a patent, and 1.75% ended in partial invalidity.⁹² Put another way, only 34 patents were fully invalidated in Germany in 2015 out of 600,498 active patents, or 0.0005% of all valid patents in Germany. The findings suggest that the majority of patents are not litigated and, when it comes to

⁸⁴ Brian Love et al, ‘Patent Assertion Entities in Europe’ (n 82) p. 104.

⁸⁵ IPR Enforcement Directive (n 7) Article 11

⁸⁶ Ibid, Article 3(2).

⁸⁷ 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 (the European Commission interpretation of the IPR Enforcement Directive is that injunctions should not go beyond what is necessary and proportionate, and in certain circumstance it can be sufficient to make infringing acts more difficult or to seriously discourage them, without leading to the complete cessation of activities).

⁸⁸ C-170/13 *Huawei v ZTE*, ECLI:EU:C:2015:477.

⁸⁹ The European Patent Convention, 16th edition, June 2016.

⁹⁰ Directive 2009/24/EC on the Legal Protection of Computer Programs [2009] OJ L 111.

⁹¹ See EPO Guidelines for Claims Directed to Computer-Implemented Inventions: http://www.epo.org/law-practice/legal-texts/html/guidelines/e/f_iv_3_9.htm

⁹² Claudia Tapia, ‘Assessing the Quality of European Patents’ (2016) November/December, *Intellectual Property Magazine*, 43 (also disputing studies that suggested lower quality of patents by presenting high invalidity rates).

litigation, out of all initiated patent infringement cases only a small number of patents end up in full or partial invalidity.

Therefore, a combination of above factors makes it more costly to bring and cheaper to defend patent suit in Europe, which disincentivises the appearance of Litigation type of PAEs and speculative patent litigation in general.

Nevertheless, there is a concern that Germany's bifurcated system, where different courts decide infringement and validity, may lead to "injunction gap" where one court decides on the infringement of patents and awards injunctions before the other decides on validity.⁹³ The concern is that PAEs may leverage the injunction gap and extract excessive settlements from defendants for patents that are likely to be invalid. However, German judges have the discretion to stay infringement proceedings if the invalidity action has been initiated, or to stay injunctions pending appeal.⁹⁴ Thus, there is a mechanism in place to prevent injunction gap from happening.

4.1 The Unified Patent Court

The Unified Patent Court and the Unitary Patent will bring a common EU patent court and one unitary EU patent.⁹⁵ This will bring a change to current patent litigation landscape where it is necessary to litigate national patents on a country per country basis. However, some argue that the UP and the UPC would create an "open invitation for PAEs" abuse due to the possibility of: i) obtaining EU wide-injunction; ii) bifurcated proceeding where infringement and validities would be decided by different court divisions, leading to injunction gap; iii) forum shopping – a concern that some local division would be more patentee friendly than others, leading to European version of E.D. Texas.⁹⁶

Although these are all valid concerns, the UPC system has in place mechanisms 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",⁹⁷ meaning that injunction do not as a rule follow automatically upon finding of infringement and validity of patents, but it is a discretionary remedy. Article 42 further provides that judges must also ensure that rules and remedies

⁹³ IP2Innovate Position Paper, 4 April 2017 available at: http://ip2innovate.eu/wp-content/uploads/2017/04/IP2I_Coalitionscopeandobjectives_v15_040317.pdf p. 4; Cremers K et al, 'Invalid but Infringed? An Analysis of the Bifurcated Patent Litigation System' (2016) 131 *Journal of Economic Behaviour & Organization* 218.

⁹⁴ Cremers K et al, 'Patent Litigation in Europe' (2017) 44 *European Journal of Law & Economics* 1, 6.

⁹⁵ 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.

⁹⁶ IP2Innovate Position Paper 4 April 2017, p. 7, available at: 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

⁹⁷ Article 62, Agreement on the UPC.

are applied in a fair and equitable manner and should deal with the litigation in proportionate ways.⁹⁸ These provisions ensure that judges must exercise their discretion in fair and proportionate manner when deciding whether to grant injunction or not. Also, the possibility of EU-wide invalidity of patents would also act as a deterrent for bringing meritless claims.

Second, the decision whether the case will be bifurcated is also under the discretion of the judges,⁹⁹ and there are mechanisms 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 counter-claim of invalidity is raised in 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.¹⁰⁰ Any decision on bifurcation must be reasoned and parties may challenge such decision.¹⁰¹ In case judges decide that it may be better to bifurcate proceedings, the UPC Rules and Procedures ensure the both proceedings should be coordinated to end at the same time. In that regard, 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.¹⁰² Finally, first instance decisions may be stayed pending appeal, ensuring that any infringement decision will be stayed if the validity proceedings have not yet been resolved.¹⁰³

Finally, as to the argument of potentially pro-patentee and “injunction friendly” local divisions, this is likely to be restrained by the implementation of uniform practices across the UPC and right to appeal the decisions of local divisions, which should increase consistency between judgments.

As a result, highly trained and experience judges at the UPC have the tools and should be able to protect against any abuse of the UPC litigation system, a view shared by the Court and the EC.¹⁰⁴

5. What does the available evidence tell us? Is there speculative PAE litigation in the EU?

⁹⁸ Ibid, Article 42.

⁹⁹ Article 33(3) Agreement on the UPC; Rule 37 of Rules and Procedures of the UPC (18th Draft of 19 October 2015).

¹⁰⁰ Ibid.

¹⁰¹ Rule 37(1) Rules and Procedures of the UPC; Rule 220, Rules and Procedures of the UPC.

¹⁰² Ibid, Rule 40.

¹⁰³ Rule 295 of Rules and Procedures of the UPC (18th Draft of 19 October 2015).

¹⁰⁴ See: UPC, Impact of the UPC, available at: <https://www.unified-patent-court.org/faq/impact-upc-0> ; EC Vice President Ansip's Response, 29 March 2017 available at: http://ip2innovate.eu/wp-content/uploads/2017/04/IP2I_VPAA-reply_170329.pdf ; 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>

Let us now look at the available evidence on the PAE litigation in Europe. A study by Love et al. found that PAEs accounted for roughly only 10% of patent suits in Germany and the UK, during the period of 2000-2008 and 2000–2013, respectively.¹⁰⁵ The more recent study by Darts-IP found that between 2007 and 2017 the average annual growth rate of actions related to PAEs in the EU was 19% and that the most active PAEs are coming from the US.¹⁰⁶ They find that the majority of PAE litigation in EU is in Germany, which is attributed to the importance of Germany as a large technological market, but also do to its bifurcated system and relative ease of obtaining injunction after finding of infringement, leading to “injunction gap”. This report led some to suggest that the European innovation increasingly under attack by PAEs.¹⁰⁷

However, upon closer look, the data from the Dart-IP Report does not show signs of abusive PAE litigation in the EU.

The Darts-IP Report actually shows that the vast majority of patent litigation in the EU comes from practicing entities and that PAEs are responsible for only a small percent of patent litigation. The study provides the information on the proportion of the PAEs related litigation in relation to the total patent litigation in certain countries. Excluding Germany, it shows that PAEs are responsible for only 5% of patent litigation overall.¹⁰⁸ The number is higher in Germany, but still only 19.5% of patent litigation involves PAEs, meaning that the majority of patent litigation actually comes from non-PAEs (presumably practicing entities) and that PAEs are responsible for only a very small percentage of patent litigation overall.¹⁰⁹ Further, Dart-IP did not segregate data between many different types of PAEs so we do not have the information about which types of PAEs are present in Europe.

Next, the Dart-IP 19.5% figures do not distinguish between actions brought by or against PAEs. In fact, the majority of actions are actually brought against PAEs.¹¹⁰ The study shows first the number of overall “PAE actions”, which include disputes where PAEs are defendant, plaintiff and a party in the opposition proceedings to patents validity at the European or national patent office. Out of this total number of PAE actions, the study shows that PAEs initiated infringement proceedings in only 42% of

¹⁰⁵ Brian Love et al, ‘Patent Assertion Entities in Europe’ (n 82).

¹⁰⁶ Darts IP, ‘NPE Litigation in the European Union’ (2018) (Dart-IP Report) available at: <https://www.darts-ip.com/npe-litigation-in-the-european-union-facts-and-figures-2/> (note that the Dart-IP study talks about NPEs but defines them as “independent organizations (legal entities) which own or benefit from patent rights but do not sell or manufacture goods or services associated with them (i.e., non-operating companies) and which have an active (offensive) assertion or litigation role as plaintiffs towards the enforcement of their patent rights.” Dart-IP excludes universities, research institutions and sole inventors-individuals from the definition of NPEs. Because the definition of NPE by Dart-IP is similar to the definition of PAEs used in this article, the term PAE will be used throughout.

¹⁰⁷ IP2Innovate, Press Release, February 2018 available at http://www.ip2innovate.eu/wp-content/uploads/2018/02/IP2I_DARTS-Report-Launch-Press-release_v7_190218.pdf

¹⁰⁸ Darts IP Report (n 106) p. 11.

¹⁰⁹ Ibid.

¹¹⁰ Ibid, p. 7.

cases.¹¹¹ 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. When this information is taken into account, it turns out that only around 475 suits were filed by PAEs in the whole of Europe in the last 10 years.¹¹² This is hardly an explosive or even a notable number.

Darts-IP Report also shows that PAEs in the EU mainly target large companies. The study contains a list of top 10 companies that cumulatively account for 57% of all patent infringement actions initiated by PAEs.¹¹³ All these companies are large international players: Vodafone, ZTE, Huawei, Deutsche Telecom, Telefonica, LG, Samsung, Google and Apple.

On the other hand, SMEs have very small chance of being targeted. The report finds that just around 23.5% of all unique defendants in patent infringement cases initiated by PAEs are small and medium sized companies (SMEs) – with turnover equal or less than 50 million euros.¹¹⁴ To put into perspective, this mean that in the least 10 years there have been around 112 PAE suits filled in the whole EU against SMEs; which is statistically insignificant. Using the example from Intellectual Asset Magazine - in 2015 there were around 23 million SMEs in the EU, which means there is approximatively 0.000005% change of an SMEs being sued for patent infringement by PAE.¹¹⁵

In fact, the JRC’s study on PAEs in Europe found that SMEs in Europe are actually benefiting from the presence of certain types of PAEs because they assist SMEs in identifying potential licensing, 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.¹¹⁶ Similarly trend is also noted with Korean SMEs, who are increasingly using PAEs to help them in licensing their patents to big Korean companies.¹¹⁷

Darts IP Report further provides a top ten list of most litigious PAEs.¹¹⁸ However, this name listing does not tell us anything about particular business models of these companies. As seen above, PAEs are not a uniform category and use various different business models, yet the Darts-IP study bundles

¹¹¹ Ibid.

¹¹² Ibid, 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>

¹¹³ Darts IP Report (n 106) p. 9

¹¹⁴ Ibid, p. 10. See also JRC: PAEs in Europe (2016) (n 1) pp 50-51 (finding that PAEs in Europe primarily assert patents against large telecommunication companies)

¹¹⁵ 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>

¹¹⁶ JRC: PAEs in Europe (2016) (n 1) p. 51.

¹¹⁷ . See: Jacob Schindler, ‘Upsurge in US Patent Assertions by South Korean Entities is Driven Entirely by SMEs’ 15 May 2018, IAM, available at: <http://www.iam-media.com/Blog/Detail.aspx?g=0a7a7873-3b0d-4c82-bc62-c66c19699419>

¹¹⁸ Darts-IP Report (n 106) p. 10.

all PAEs together. However, the companies listed show a broad spectrum of business models. For example, Intellectual Ventures, the number 1 litigious PAEs in the Dart-IP Report, is a Portfolio PAE that currently licenses approximately 30,000 patents and asserts patents against large companies.¹¹⁹ Acacia, Unwired Planet and Vringo are also known to amass large patent portfolios obtained from practicing companies, and the JRC study classified them as Focused Assertion Entities.¹²⁰ Further, Sisvel is mainly a patent pool and joint-licensing administrator;¹²¹ France Brevets is a company established with the participation of the French state with the aim assisting the licensing of patents from mainly French SMEs;¹²² and IPCom is a German company that became known for acquiring and licensing patents from Robert Bosch.¹²³ Therefore, the Darts-IP Report shows that there are PAEs with very different business models operating in Europe, but does not show the presence of those PAEs that may be opportunistic - Litigation or Serial Assertion Entities.

6. What, if any, should be done about PAEs? Unsubstantiated calls for change of IP enforcement system risk undermining innovation

The article has shown that PAEs are companies in the business of patent licensing and how there is nothing inherently wrong about asking companies that infringe on a valid patent to take a license for its use. Such behaviour falls within the rights granted by the patent. PAEs themselves use various different business models, some serve a useful patent licensing function, while some may be abusing the litigation system, it all depends on the individual facts at hand. Next, the article demonstrated how PAEs are a product of US patent and litigation system and how incentives for abuse are not present, or are not present to the same extent in Europe. Finally, currently available data shows that PAEs are responsible for a very small number of patent litigation in the EU, and the available evidence does not show the presence of aggressive patent monetisers as seen in the US.

Therefore, the evidence suggests that European patent and litigation system is functioning well and that the fear about massive PAE litigation abuses is exaggerated. However, this does not mean that we should remain inactive. Instead, we should continue to preserve the incentives that protect against abuse of the system by both patent holders and implementers.

This means first and foremost relying in our judges to address any issue on a case-by-case basis, as they have enough experience and the necessary tools to address inappropriate actions. As shown, judges are required to take into account the principle of proportionality when deciding on injunctions.

¹¹⁹ <http://www.intellectualventures.com/inventions-patents/patent-portfolio> ; JRSC: PAEs in Europe (2016) (n 5) p. 134.

¹²⁰ JRC: PAEs in Europe (2016) (n 1) p.135, 137.

¹²¹ <http://sisvel.com> ; JRC: PAEs in Europe (2016) (n 1) p. 136.

¹²² <https://www.francebrevets.com/en> ; JRC: PAEs in Europe (2016) (n 1) pp. 135-136.

¹²³ JRC: PAEs in Europe (2016) (n 1) p. 133.

They may well find that in certain instances it would be disproportionate to grant injunction for a certain patent. On the other hand, sometimes injunction may be warranted as a tool to bring infringers back to the negotiating table. Potential for injunction gap in Germany may be considered at first glance as a problem, but German judges already have the discretion to stay infringement proceedings if the invalidity process has been initiated, or to stay injunctions pending appeal.¹²⁴ Similarly, judges have the discretion to a certain degree in deciding the reasonable amount to be recovered by the losing party,¹²⁵ and may in certain circumstances require from PAEs to pay security for costs of the proceedings, to protect against frivolous patent infringement litigation¹²⁶

On the other hand, proposal to automatically deny injunctions to PAEs is wholly disproportionate and is not supported by evidence that there is a wide-spread PAE problem that needs fixing. The practical effects of this rule would be devaluation of patent rights and an open invitation of companies to infringe on patents and delay concluding licensing agreements as much as possible, until forced to do so by courts. Denial of injunctive relief is not a novel suggestion. Lemley and Shapiro have already similarly advocated for the denial of injunctions to non-practicing entities because of the fear of “patent holdup”, a possibility to extract excessively high licensing fees unrelated to the value of the technology in case of injunction (or the threat of injunction) for infringement of a small patent reading on a complex multi-component product.¹²⁷ There is however already a large body of literature criticising such views and pointing out to the opposite problem - “holdout” by practicing companies.¹²⁸ Namely, with blanket ban against injunctions, practicing companies would have no incentive to take a license, and would prefer waiting to be sued and litigate if their only sanction would be court imposed damages in the amount they should have paid in the first place. The automatic denial of injunction would effectively grant a compulsory license to all patents held by companies that do not practice them, with courts turning into price-setting agencies.

Studies have precisely confirmed that difficulties in patent monetization lead practicing companies to transfer their patents to PAEs.¹²⁹ Heiden and Petit provide real-world examples of hold-out strategies by patent implementers in the context of standard essential patents, where the possibility of obtaining

¹²⁴ Katrin Cremers et al, ‘Patent Litigation in Europe’ (2017) 44 *European Journal of Law & Economics* 1, 6.

¹²⁵ IPR Enforcement Directive (n 7), Article 14.

¹²⁶ For instance see: UK Civil Procedure Rules, Rules and Practice Directions, Rule 25.12 Security for Costs.

¹²⁷ Mark Lemley, Carl Shapiro, ‘Patent Holdup and Royalty Stacking’ (2007) 85 *Texas Law Review* 1991

¹²⁸ See: Damien Geradin and Miguel Rato, ‘Can Standard-Setting Lead to Exploitative Abuse? A Dissonant View on Patent Holdup, Royalty Stacking and the Meaning of FRAND Commitment’, (2007) 3 *European Competition Journal* 101; John Golden, ‘Patent Trolls and Patent Remedies’, (2007) 85 *Texas Law Review* 2111; Gregory Sidak, ‘Holdup, Royalty Stacking, and the Presumption of Injunctive Relief for Patent Infringement: A Reply to Lemley and Shapiro’, (2008) 92 *Minnesota Law Review* 714; Einer Elhauge, ‘Do Patent Holdup and Royalty Stacking Lead to Systematically Excessive Royalties?’, (2008) 4(3) *Journal of Competition Law & Economics* 535;

¹²⁹ JRC: PAEs in Europe (2016) (n 5) p. 48-49; Coleen Chien, ‘Holding Up and Holding Out’ (2014) 21 *Michigan Telecommunications and Technology Law Review* 1 (finding that when large companies systematically hold out, patentees have no choice but to work with efficient patent enforcers – PAEs).

injunction is severely constrained.¹³⁰ They find that some implementers are intentionally using various delaying tactics against taking a license, and point to concrete court cases of such hold-out strategies.¹³¹ As a result, SEPs licensing coverage is falling steadily over the years.¹³²

We may also learn something from the US example. Over the recent years the US has introduced a number of measures to address the PAE issue. Some of the measures were described above, and they had a good effect of reducing the incentives for litigation abuse. But some of the measures resulted the gradual weakening of patent rights overall. For example, the effects of *eBay* decision are that the injunction is now often available only to practicing companies that compete against the infringer, while non-competitors and other non-practicing entities are generally denied injunctive relief.¹³³ Another example are decisions by the Supreme Court that made it harder to patent biotech inventions and measures that made it easier to invalidate patents in inter-partes proceedings than before district courts.¹³⁴ As a consequence of these raft of changes, the US has dropped from the 1st to 12th place on the ranking of the economy's environment for patents in the space of just 3 years.¹³⁵

In conclusion, if there is a problem, it needs to be defined, quantified and a proportionate solution applied that should not have unintended consequences. The available data in Europe does not show that the system is broken or needs a 'fix'. Quite the opposite, European judges are well trained and have to the adequate legal framework in place to protect against any potential abuse of patent and litigation system. Sweeping proposals for making injunctions unavailable to all patent holders that do not practice their patents would devalue patent rights and undermine the goals for patent system in promoting innovation and incentives to innovators.

7. Conclusion: Are PAEs a Threat to Europe?

In short answer, no. At least, they have not yet been a danger to Europe and there is no evidence to suggest otherwise. Europe has in place mechanisms that disincentives mass frivolous suits. Most importantly, judges already have the tools and experience to guard against any potential abuse of

¹³⁰ Bowman Heiden, Nicolas Petit, 'Patent "Trespass" and the Royalty Gap: Exploring the Nature and Impact of Patent Holdout' (2018) 34 *Santa Clara High Technology Law Journal* 179, 220-224.

¹³¹ Ibid.

¹³² Ibid. 235.

¹³³ Christopher Seaman, 'Permanent Injunctions in Patent Litigation After *eBay*: An Empirical Study' (2016) 101 *Iowa Law Review* 1949. In the case of standard essential patent cases the injunctions are even less applied. Analysing over 2,746 cases in the United States District Courts between 2001-2013 and in the International Trade Commission (ITC) Gupta and Snyder concluded that no injunctions were granted for any patents that were determined to be essential. See Kirti Gupta, Mark Snyder, 'Smart Phone Litigation and Standard Essential Patents', (2014), *Hoover IP² Working Paper Series No. 14006*. Available at <https://ssrn.com/abstract=2492331> or <http://dx.doi.org/10.2139/ssrn.2492331>.

¹³⁴ US Chamber of Commerce, *International IP Index* (6th Edition 2018) p. 8.

¹³⁵ Ibid, p. 35; also Gene Quinn, 'U.S. Patent System Falls to 12th Place in Chamber Global IP Index for 2018' 8 February 2018, IP Watchdog, available at: <http://www.ipwatchdog.com/2018/02/08/u-s-patent-system-falls-12th-place-chamber-global-ip-index-2018/id=93494/>

patent litigation system, either by denying or staying injunctions, requiring securities and awarding legal costs to prevailing party. Instead, we should be careful about changing Europe's IP enforcement system based on speculative assumptions or fringe activities, it may have unintended harmful consequences to Europe's innovativeness.