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# Patent Assertion Entities in Europe

Brian J. Love, Christian Helmers, Fabian Gaessler, Max Ernicke\*

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## Abstract

This book chapter presents the findings of an empirical study of German and U.K. patent litigation involving patent assertion entities (PAEs). Overall, we find that PAEs account for roughly ten percent of patent suits filed in these countries during the time periods covered by our study: 2000-2008 for Germany and 2000-2013 for the U.K. We also present a variety of additional data on the characteristics of European PAE suits and PAE-asserted patents and, finally, consider what our findings suggest are the most important reasons PAEs tend to avoid European courts. We conclude that, while many factors likely contribute to the relative scarcity of PAEs in Europe, the continent's fee-shifting regimes stand out as a key deterrent to patent monetization.

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## **Introduction**

Do patent assertion entities (PAEs) operate outside the United States? You might be surprised to learn that the answer is yes. If so, you're definitely not alone. U.S.-based PAE activity has been the near-exclusive focus of academic researchers for years, and even European patent authorities have been known to dismiss abusive patent enforcement as something that takes place only west of the Atlantic (Helmets et al. 2014, pp. 510-512).

But PAEs are hardly a uniquely American phenomenon. In this chapter, we take a look at non-practicing entities (NPEs) and PAEs<sup>1</sup> in two of Europe's most popular jurisdictions: Germany and the United Kingdom. As we explain, PAEs are relatively rare in Europe, but are hardly non-existent. PAEs account for roughly ten percent of patent suits litigated in Germany and the U.K. during the time periods covered by our study: 2000-2008 for Germany and 2000-2013 for the U.K. We also take a closer look at the characteristics of European PAE suits and consider how well our findings mesh with common explanations for PAEs' reluctance to enter the European market. We conclude that, while many factors likely contribute to the relative scarcity of PAEs in Europe, the continent's fee-shifting regimes appear to play an outsized role.

## **Patent Litigation in Europe**

Though each European nation has its own distinct patent system, patent filings and enforcement activities largely take place in just a few jurisdictions. Chief among them is Germany, which plays host to roughly half of all patent suits filed in Europe (Council of the E.U. 2007; Cremers et al. 2013). Also near the top is the U.K.,<sup>2</sup> the continent's only common law jurisdiction and the location of more than one hundred patent suits in a typical year (Helmets & McDonough 2013a).

To study PAE litigation in Europe, we collected detailed case-level data on patent suits filed in these two countries. Though both are among Europe's most popular jurisdictions for patent enforcement, the German and U.K. legal systems differ in many important respects and, thus, provide an interesting cross-section for study. Germany is a civil law jurisdiction that bifurcates the issues of infringement and validity in parallel judicial and administrative

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<sup>1</sup> We define these terms in Table 1.

<sup>2</sup> The U.K. contains the legal systems of England and Wales, Scotland, and Northern Ireland. Our data solely refer to the U.K.'s major patent jurisdiction of England and Wales, where virtually all U.K. patent litigation takes place. For convenience, we refer to the jurisdiction of England and Wales as the U.K. throughout this chapter.

proceedings that move relatively quickly (Cremers et al. 2013). Patent litigation in the U.K., on the other hand, shares quite a bit in common with U.S. patent practice, including unified consideration of infringement and validity in a single rather slow and rather expensive lawsuit (van Zeebroeck & Graham 2014, p. 667). By analyzing data from both jurisdictions, we can observe how PAEs respond to several of Europe’s most important procedural variations.

Our German database consists of all patent suits filed between 2000 and 2008 in the nation’s three busiest regional courts—Mannheim, Düsseldorf, and Munich—as well as all invalidity challenges filed with the Bundespatentgericht (BPatG, or Federal Patent Court) during the same time period.<sup>3</sup> Collectively, these courts see over 90 percent of all patent infringement actions filed in Germany (Cremers et al. 2013). For the U.K., we have data from both the Patents Court division of the High Court (PHC), and the Patents County Court division of the Central London County Court, a “small claims” patent court that was recently renamed the Intellectual Property and Enterprise Court (IPEC).<sup>4</sup> While we have data for virtually all patent cases filed in the PHC between 2000 and 2013, IPEC court records are not publicly available for cases filed prior to 2007.<sup>5</sup> Accordingly, though our database includes nearly every patent suit filed in the U.K. between 2007 and 2013, we are missing data for approximately 10 percent of U.K. patent cases initiated between 2000 and 2006.<sup>6</sup>

For each suit in our database, we made note of the litigating parties involved, the patent(s) asserted or challenged, the causes of action and counterclaims alleged, and the suit’s ultimate outcome. To locate NPEs and PAEs, we identified the patentee in each case and then determined manually—using web searches, news reports, court filings, and the existing academic literature on NPEs and PAEs—whether each was an NPE at the time of suit and, if so, what kind of NPE it was. To classify NPEs, we used the seven

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<sup>3</sup> The BPatG has exclusive jurisdiction over validity challenges in Germany (Cremers et al. 2014).

<sup>4</sup> The IPEC offers two procedural “tracks”: a “multi-track” with a £500,000 cap on damages and a £50,000 cap on attorney fee awards, and a “small claims” track with a £10,000 cap on damages (H.M. Courts and Tribunals Service 2014, p. 3). For a detailed discussion of the distinction between the PHC and IPEC as well as the reforms that have transformed the PCC into the IPEC between 2010 and 2013 see Fox (2014).

<sup>5</sup> Detailed information on the collection of U.K. patent data can be found in Helmers, et al. (2015) and Helmers and McDonough (2013a).

<sup>6</sup> Roughly 90 percent of patent suits filed in the U.K. are filed in the PHC (Helmers et al. 2015).

classifications shown below in Table 1, which we adapted from Allison et al. (2009).<sup>7</sup>

We define an NPE as any entity that does not sell a technology product,<sup>8</sup> and, thus, our definition includes parties like universities that, though non-practicing, do not fit the traditional mold of a “patent troll.”<sup>9</sup> To account for this, we also include statistics below for “PAEs,” which we define as independent companies that are exclusively in the business of enforcing patent rights—i.e., only those NPEs that fall within classes 1 and 2.<sup>10</sup>

**Table 1: NPE Types**

<b>Entity Class</b>	<b>Description</b>
1	IP Licensing Co., Acquired Patents
2	IP Licensing Co., Owned by Inventor or Failed Product-Producing Co.
3	University, University IP Licensing Spin-off, or Other Research Institution
4	Start-up, Suing Pre-Product
5	Individual
6	Industry Consortium
7	IP Subsidiary of a Product-Producing Co.

Notes: Entities marked in gray are PAEs.

<sup>7</sup> We excluded from our tally all NPEs that filed suit (or were sued) along with a product-producing exclusive licensee.

<sup>8</sup> Though we believe that this is the most common definition of the term, others have used alternative formulations. RPX’s definition of NPE, for example, includes “noncompeting entities,” which are “practicing compan[ies] asserting patents that [they] do[] not [themselves] practice.” (Chien 2014, p. 494 n.107).

<sup>9</sup> Arguably, our definition is underinclusive as well because it excludes some patentees that are very litigious and yet also sold products at the time of at least some of their suits. Two examples, Gemstar and Document Security Systems, are discussed in Helmers et al. (2014, p. 527-528).

<sup>10</sup> Colleen Chien, who coined the term, defined PAEs as “entities . . . focused on the enforcement, rather than the active development or commercialization of their patents” (Chien 2010, p. 328). The term excludes universities, startups and others who seek to commercialize or transfer their technology (Chien 2014, p. 464 n.1).

## PAEs in Europe by the Numbers

As shown below in Figure 1 and Table 2, NPEs and PAEs account for about 19 percent and 9 percent, respectively, of the patent suits in our database.<sup>11</sup> Though this is a small percentage by recent U.S. standards—PAEs are responsible for the majority of all patent suits filed in the U.S. since 2012 (Feldman et al. 2014, p. 38; Cotropia et al. 2014, p. 674)—it is nonetheless a significant fraction. In fact, this rate of litigation corresponds roughly to the level of PAE activity in the U.S. in the early- to mid-2000s,<sup>12</sup> a time when the U.S. legal community was already quite vocal about PAE litigation practices.<sup>13</sup>

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<sup>11</sup> Our list of NPEs in Germany and the UK can be found here: <http://bit.ly/1KITE1I>. Given that we can only observe patent enforcement efforts that culminated in a lawsuit, we cannot rule out the possibility that the overall composition of patent assertion in the U.K. and Germany (including disputes resolved out of court) differs from what we observe in public court records, nor can we rule out that the level of out-of-court assertion in Europe differs from that of the U.S. to the same extent reflected in lawsuit filings.

<sup>12</sup> In a study of 2,300 high-tech patent suits filed between 2000 and 2008, Chien (2009, p. 1604) found that NPEs filed 10% of all suits initiated between 2000-2001, 16% between 2002-2003, 16% between 2004-2005, and 20% between 2006-2008.

<sup>13</sup> PAE suits were a common topic in the U.S. patent community dating back at least to 1999, when the term “patent troll” was coined (Wild 2008). Patent suits filed by shell companies were also covered in the U.S. popular press as early as 2001 (Sandberg 2001; Riordan 2002).

**Figure 1: Case Counts and Percent of NPEs**



Notes: Data for Germany available only for 2000-2008; data for England and Wales includes only PHC for 2000-2006 and PHC as well as IPEC from 2007 to 2013.

In addition, our findings may well understate the current percentage of PAE suits in Germany. As shown in Figure 1, the percentage of German patent suits filed by PAEs increased substantially between 2004 and 2008, and anecdotal reports suggest that the percentage may well have grown since then (Klos 2013).<sup>14</sup>

<sup>14</sup> In 2013, for example, Deutsche Telekom reportedly paid “hundreds of millions of euros” to settle a German patent suit filed by ICom (Reuters 2013). Other examples include high profile cases filed by iinnovation (Behlau 2012), Via Vadis (Behlau 2013), Highpoint (Klos 2012), CIF Licensing (Behlau & Klos 2011), Vringo (Klos 2014), France Brevets (Klos 2015), Acacia subsidiary Smartphone Technologies (Behlau 2014), Marathon IP subsidiary TLI (Geimer 2015), and Intellectual Ventures (Intellectual Ventures 2015).

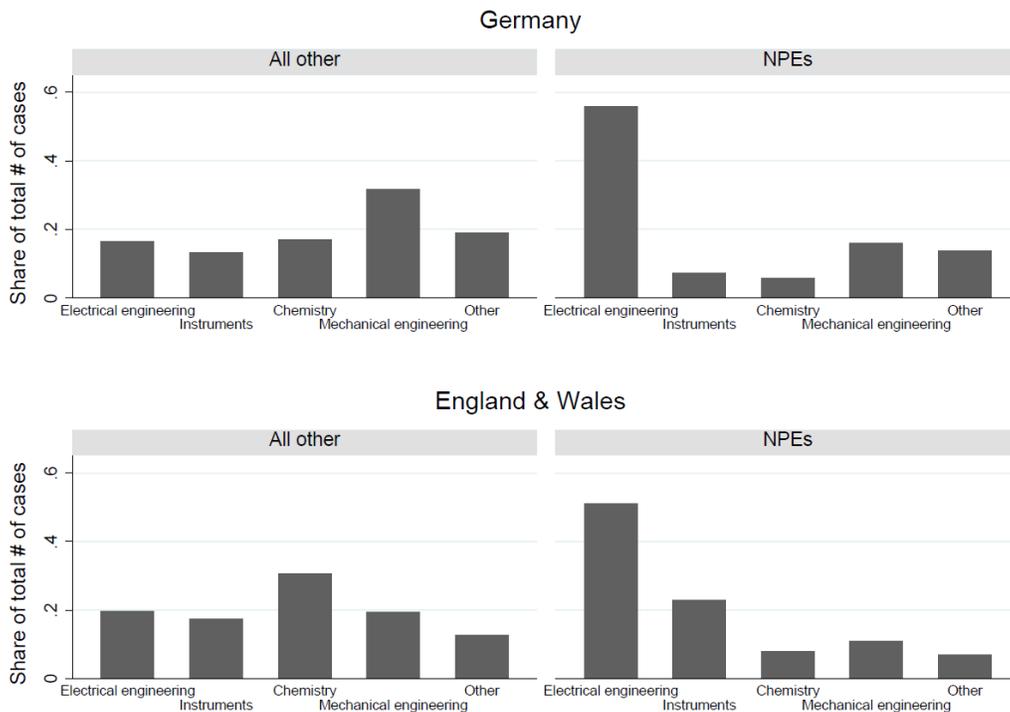
**Table 2: Case Counts by NPE Type**

<i>Year</i>	<i>Total</i>	No. Cases								
		<i>NPE type</i>								
		All NPE	All PAE	IP Lic. Co. (Acquired)	IP Lic. Co. (Inventor, Failed Co.)	Univ. or Res. Instit.	Pre-Product Start-Up	Individ.	Indus. Consort.	IP Subsid. of Prod. Co.
<b>Germany</b>										
2000	290	46	4	1	3	5	0	34	0	3
2001	362	42	10	9	1	3	1	24	0	4
2002	131	12	1	1	0	0	0	11	0	0
2003	389	54	3	3	0	3	0	44	0	4
2004	515	68	10	6	4	0	0	50	2	6
2005	573	99	43	40	3	4	0	33	4	15
2006	524	117	71	67	4	0	0	34	0	12
2007	669	199	138	132	6	8	0	26	0	27
2008	595	182	102	97	5	6	0	34	0	40
<b>England &amp; Wales</b>										
2000	19	3	2	0	2	0	0	1	0	0
2001	22	2	2	0	2	0	0	1	0	0
2002	24	1	1	0	1	0	0	0	0	0
2003	28	4	2	0	2	1	1	0	0	0
2004	27	1	1	0	1	0	0	0	0	0
2005	28	3	2	1	1	0	0	1	0	0
2006	40	5	4	3	1	1	0	0	0	0
2007	39	4	2	1	1	0	0	1	0	1
2008	75	13	10	9	1	2	0	0	0	1
2009	57	10	8	5	3	0	0	2	0	0
2010	58	7	5	4	1	1	0	1	0	1
2011	119	13	7	6	1	1	0	4	0	1
2012	115	11	4	2	2	0	0	4	0	3
2013	78	7	4	4	0	0	0	1	0	2

Notes: No data available for IPEC prior to 2007.

As shown below in Figures 2a and 2b, we also find that PAEs overwhelmingly assert German and U.K. patents with International Patents Classifications (IPCs)<sup>15</sup> related to computer and telecommunications technology.<sup>16</sup> By contrast, product-producing patentees most often litigate German and U.K. patents related to manufacturing technology and pharmaceuticals, respectively. These findings are consistent with existing studies of U.S. PAEs, which also disproportionately assert high-tech patents, especially those related to software (Bessen et al. 2011, pp. 26, 29; Love 2014, p. 1344, Fig. 8; Cotropia et al., pp. 681-682).

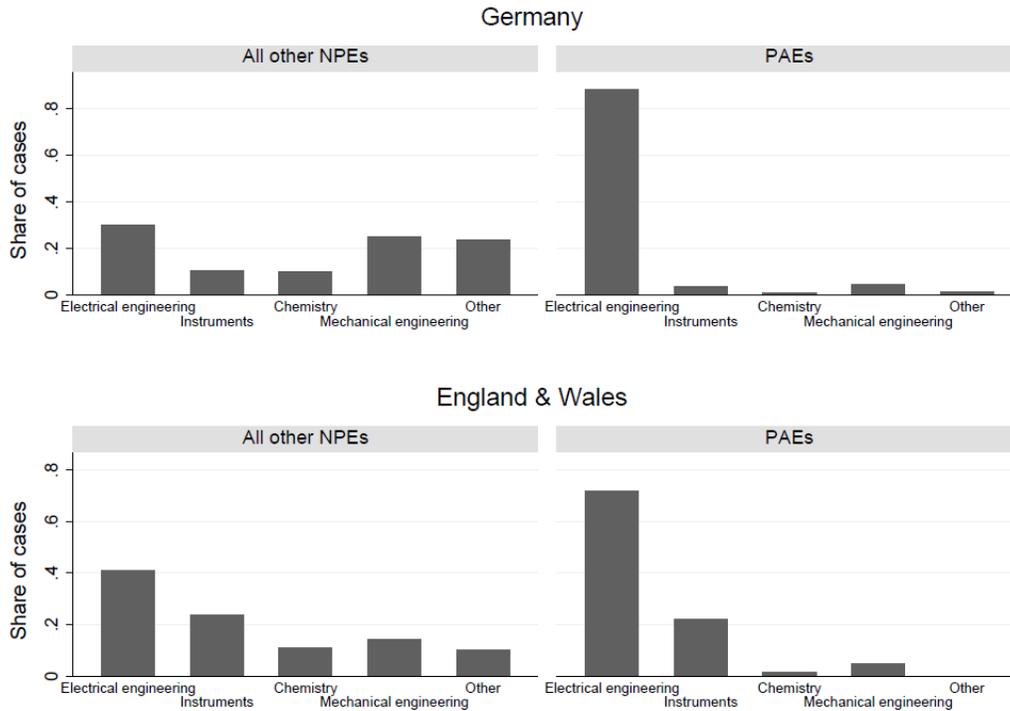
**Figure 2a: Technology Distribution (IPCs)**



<sup>15</sup> For more detail on the IPC system, see <http://www.wipo.int/classifications/ipc/en/>.

<sup>16</sup> We map IPC class symbols to technology classes using the concordance table by Schmoch (2008).

**Figure 2b: Technology Distribution (IPCs) of PAEs & Other NPEs**



Next, examining the causes of action and defenses alleged in the suits in our database, we observe that a large number of PAE suits are revocation or non-infringement actions. As shown below in Table 3, more than half of all PAE actions filed in Germany and the U.K. during the period of our study were initiated by an accused infringer, not the patentee. This percentage is high compared to both European product-producing patentees and U.S. PAEs. In Germany especially, the difference in the share of revocation cases between producing companies and PAEs—roughly 8 percent for the former compared to over 55 percent for the latter—is striking. In the U.S., just 14-15 percent of patent suits are filed by potential infringers, and even that number is inflated by the fact that many are filed after an infringement action in hopes that the two suits will eventually be consolidated in the second, more favorable venue (Chuang 2012, pp. 1081-1082; Fromer 2010, p. 1464; Moore 2001, p. 921).

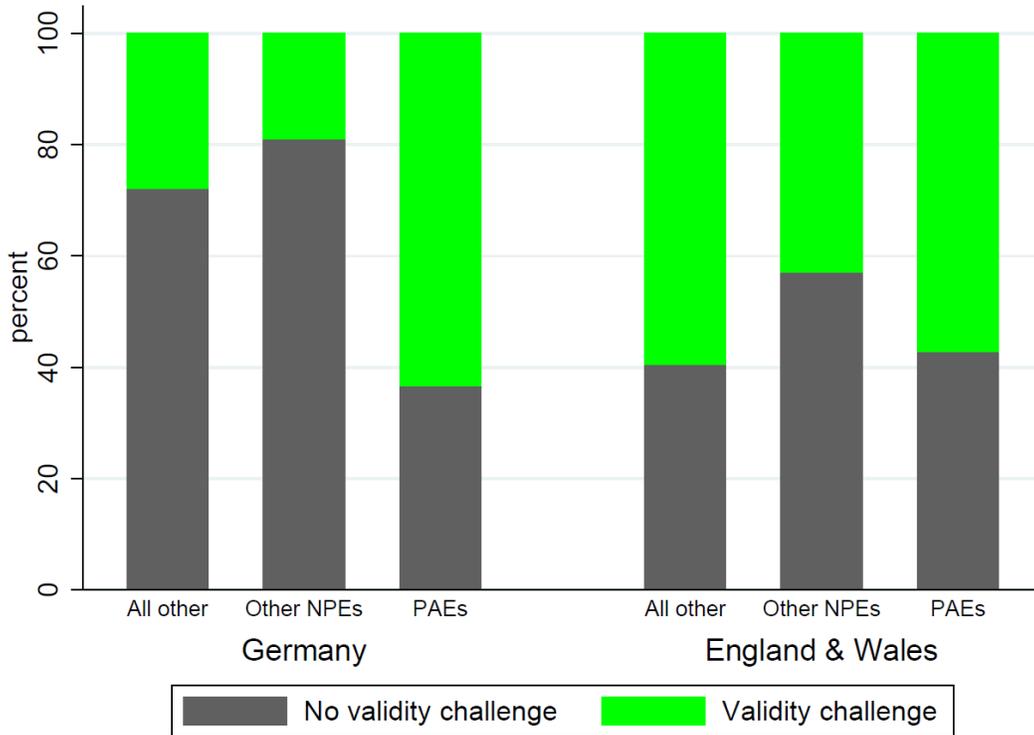
**Table 3: Case Types**

	Germany			England & Wales		
	Prod. Co.	NPE	PAE	Prod. Co.	NPE	PAE
Infringement	86.05%	91.85%	42.44%	53.25%	61.76%	37.50%
Revocation	8.25%	4.08%	55.35%	32.91%	29.41%	48.21%
Non-infringement	0.86%	1.90%	0.00%	5.23%	5.88%	3.57%
Other/Unknown	4.83%	2.17%	2.21%	8.62%	2.94%	10.71%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

However, despite their relative eagerness to initiate litigation, we also find that those accused of infringing in Germany and the U.K. are less likely than their U.S. counterparts to challenge the validity of patents asserted against them. As shown below in Figure 4, even German and U.K. patents enforced by PAEs—those most likely to be attacked on validity grounds—were challenged less than two-thirds of the time.<sup>17</sup> Overall, fewer than half of German and U.K. patent suits litigated during the periods covered by our study included a validity challenge. By contrast, invalidity is raised as a defense in virtually every patent suit litigated in the U.S. (Lemley 2001, p. 1502).

<sup>17</sup> Table 3 shows a breakdown of suits by the initial claim. Figure 3 focuses on infringement suits and shows the share of infringement suits in which the alleged infringer challenges the validity of the allegedly infringed patent. In the U.K., validity challenges are identified as counterclaims filed by the defendant in response to the infringement claim filed by the plaintiff. In Germany, validity challenges are filed at the BPatG in separate proceedings that usually run parallel to the infringement proceedings at the regional courts. For more details see Cremers et al. (2014).

**Figure 3: Percentage Share of Infringement Cases with a Validity Challenge**



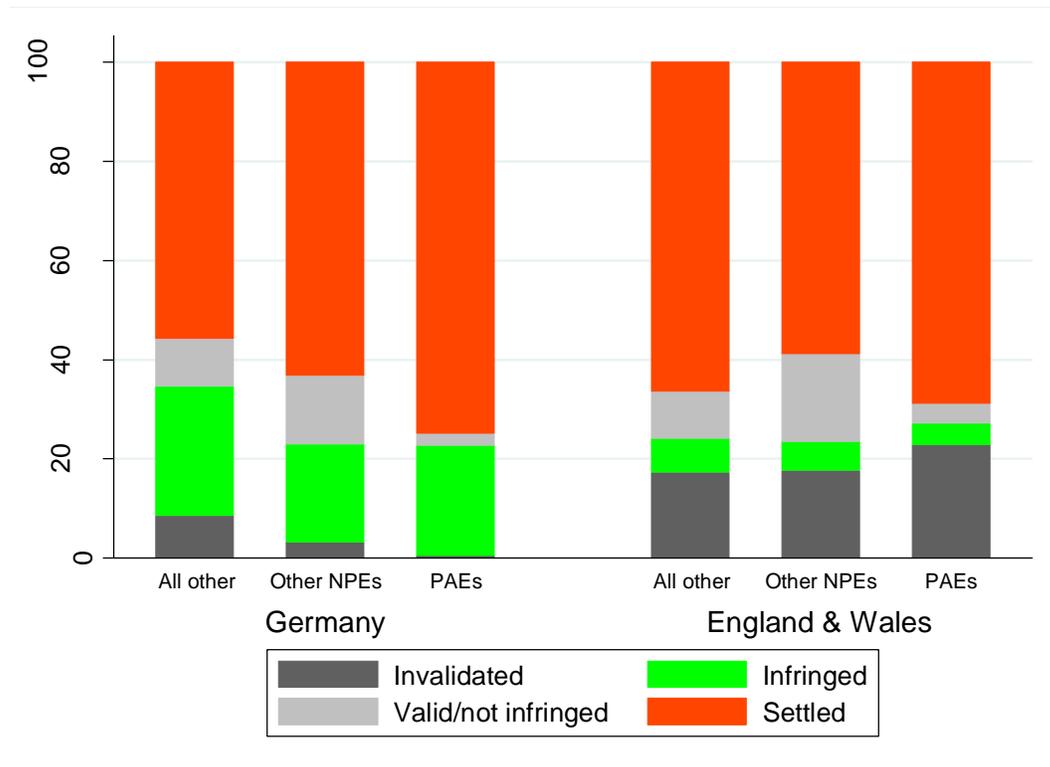
Turning next to case outcomes, we find a relatively low rate of settlement in German and U.K. patent suits. While studies show that about 80-90 percent of U.S. NPE suits settle before even a partial decision on the merits (Allison et al. 2011, pp. 687-689; Love 2014, p. 1346), less than 70 percent of NPE cases in our database ended in settlement.

We further find that, when cases did reach a decision on the merits, German and U.K. PAEs were reasonably successful in proving infringement. This is especially true in Germany, where infringement was found in 80 of the 97 PAE cases decided on the merits.<sup>18</sup> Across all court decisions in both countries, NPEs won about 56 percent of the time. Moreover, PAEs litigating

<sup>18</sup> This “win rate” is inflated by the bifurcated nature of German patent litigation. The majority of these PAE cases had a pending invalidity challenge at the time of the decision on infringement that was never resolved because the parties settled after the finding of infringement and resulting injunction. These settlements presumably reflect the fact that, had the case proceeded further, the patent may have been at least partially invalidated by the BPatG, which invalidates challenged patents about 30 percent of the time (Cremers et al. 2013).

in both countries performed slightly better on the merits of their cases than product-producing patentees. By contrast, U.S. PAEs win their cases at much lower rates, both in absolute terms and relative to their product-producing counterparts (Allison et al., 2011, p. 693; Feldman et al. 2014, p. 60; Love 2014, p. 1346).

**Figure 4: NPE Case Outcomes**

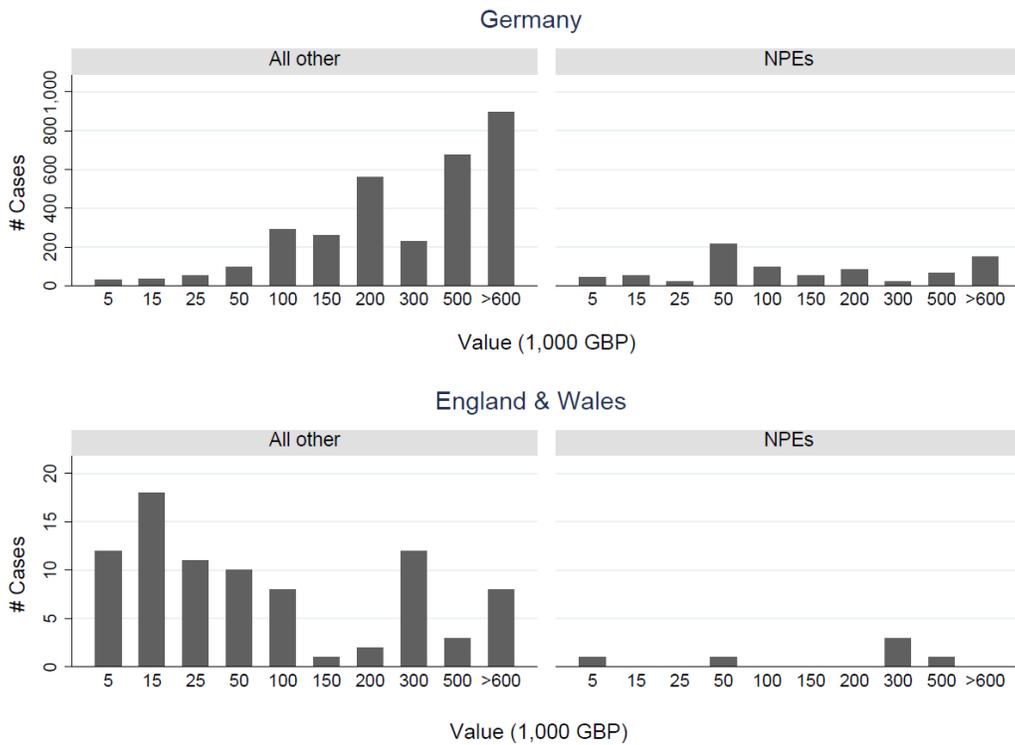


Finally, we find that NPE suits—and really all patent suits—filed in Germany and the U.K. have relatively little at stake by U.S. standards. Though our database lacks a large sample of damages awards, we were able to collect “case value” data for the suits in our study.<sup>19</sup> Figure 5 below shows the

<sup>19</sup> In Germany, the “case value” (or “litigation value”) is based on the patent’s economic significance and remaining time until expiration, as well as the extent of the infringing act and economic interest of the patent holder (Kühnen 2012, p. 174). The plaintiff has to provisionally estimate the litigation value, which usually remains unaltered throughout the proceeding (Rojahn & Lunze 2012, p. 533). The question on the level of damage awards is usually not part

estimated values patentees placed on the cases in our database. Even though patentees presumably have an incentive to place high values on their cases, the overwhelming majority estimated their case value below the equivalent of \$1 million, which would place them among U.S. patent suits with the smallest amounts at stake (Barry, et al. 2011).<sup>20</sup>

**Figure 5: Case Value**



### Why Are PAEs Relatively Rare in Europe?

Conventional wisdom holds that patent monetization is pursued less often in Europe due to some combination of higher barriers to patenting software,

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of the infringement proceeding, but answered in a follow-on proceeding. Litigants often agree on the level of damage awards out of court. The legal framework regarding the value of the claim is very similar in the UK.

<sup>20</sup> The median damages award in a U.S. patent case between 1995 and 2010 was about \$5.1 million, substantially higher than the median in Europe. (Barry et al. 2011, p. 9).

steeper cost of enforcement, cheaper cost of defense, smaller damages awards, and more frequent attorney’s fee awards.<sup>21</sup> On the whole, our data suggests that each explanation plays a role, though often a limited one viewed in isolation. Among these possible explanations, the European practice of routinely awarding attorney’s fees stands out the most as a key reason why PAEs tend to avoid Europe.

One common explanation for Europe’s relative lack of PAE activity is differing standards for the patentability of software. While software and “business methods” were considered broadly patentable in the U.S. throughout the 2000s, Article 52 of the European Patent Convention expressly excludes from the scope of patentable subject matter “schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers” (Convention on the Grant of European Patents 1973). At least until very recently,<sup>22</sup> application of this rule was widely believed to narrow the scope, if not reduce the quantity, of European software patents relative to their American counterparts.<sup>23</sup> However, we find in our data that, despite the existence of Article 52, PAEs litigating in Germany and the U.K. overwhelmingly assert patents covering telecommunications and computer technology—the majority of which qualify as “software” patents under at least some definitions of the term (Helmets et al 2014).<sup>24</sup> In short, it appears that Germany and the U.K. have—more so than a shortage of high-tech patents

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<sup>21</sup> For an overview of these potential explanations, see Mayergoyz (2009) and Fusco (2014).

<sup>22</sup> In 2014, the Supreme Court of the United States substantially narrowed the scope of software patentability in *Alice Corp. v. CLS Bank Intl.*, 573 U.S. \_\_, 134 S. Ct. 2347 (2014). Many, including Burk (2014), now see substantial overlap between the E.U. and U.S. rules for software patentability. In fact, Ghosh and Ellyna (2014) argue that the E.U. is now *more* favorable to software patentees than the U.S.

<sup>23</sup> Leung (2013), for example, raises this possibility. Others, however, note that Article 52 is less powerful than it appears. As applied by the European Patent Office, this provision only prohibits patenting software-based inventions that are “solely” computer algorithms and, thus, do not make a “technical” contribution to a non-excluded field. See *Aerotel Ltd. v. Telco Holdings Ltd.*, [2006] EWCA (Civ) 1371, p. 40, [2007] 1 All E.R. 225 (A.C.) (Eng.) (holding that the relevant inquiry is whether the invention’s “contribution [is] solely of excluded matter” or, in other words, “whether the contribution is ‘technical’”); *Case T0208/84, VICOM Systems Inc.*, 1987 O.J. E.P.O., pp. 14–23. This interpretation has proven to be so narrow that some commentators believe it has, for all intents and purposes, rendered Article 52 a dead letter (King 2011, p. 255).

<sup>24</sup> Allison and Mann (2007, p. 309), for example, define a “software patent” as “one in which at least one claim element covers data processing—that is, the act of manipulating data—regardless of whether the code carrying out that data processing is on a magnetic storage medium or embedded in a chip.” In a prior study, two of us determined that 71 percent of U.K. NPE suits filed between 2000 and 2010 asserted at least one patent qualifying as a “software” patent under this definition (Helmets, et al. 2014, p. 532).

available for PAEs—a general shortage of companies willing to assert patents of any type.

Another common explanation for PAEs' prominence in the U.S. is the dichotomy between the low cost of bringing and the high cost of defending a patent suit in the U.S. In the U.S., a patentee can enforce its right nationwide with one suit in one district court and, moreover, can do so with little or no up-front out-of-pocket expense using contingency fee representation (Schwartz 2012). In addition, companies accused of infringing in U.S. courts face relatively high discovery costs early in suits, generally before a ruling on the merits is possible. According to a survey of lawyers conducted by the AIPLA (2015, p. I-126), the median cost of defending even a relatively simple NPE suit through the end of discovery in the U.S. is \$570,000.

By contrast, in Europe—at least for the time being<sup>25</sup>—patents are national rights that can only be enforced within the bounds of each member nation (Prime 2000, pp. 176, 195). As a result, widespread patent enforcement in Europe requires parallel litigation in multiple countries. On a per capita basis, a patentee would have to sue in at least five European countries to match the jurisdictional reach of one patent suit in the U.S.<sup>26</sup> In addition, most European nations prohibit or substantially limit the use of contingency fee agreements (Helland & Tabarrock 2003, p. 518). Accordingly, a patentee deciding whether to file suit must consider whether it can afford to pay hourly attorney's fees up-front pending the outcome of the case and whether it can afford to lose those funds altogether should it lose the case.

While our database provides little direct information about the cost of litigation in Germany and the U.K., we do observe that the U.K., which has the legal system most similar to that of the U.S., as well as the most expensive cost of defense in the region (van Zeebroeck & Graham 2014, p. 667), is not Europe's most popular jurisdiction for patent suits by a wide margin. Also, European countries that do permit (or at least tolerate) "no win, no pay" fees, like Scotland, Ireland, and Greece (Kritzer 2002), see very few patent suits (Council of the E.U. 2007). In short, whatever the role of litigation costs, other factors are undoubtedly at play.

Yet another common explanation for PAEs' reluctance to enter the European market is that European courts generally award less in damages,

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<sup>25</sup> As discussed in greater detail below, the E.U. is presently in the process of implementing a "unitary patent" system with a "unitary patent court" that, together, will allow continent-wide patent enforcement in a single action (European Patent Office, 2015a; European Patent Office, 2015ab).

<sup>26</sup> The U.S. population is roughly 319 million, approximately equal to that of France, Germany, Italy, Spain, and the U.K. combined (World Bank 2015).

perhaps in part because European patent suits are not tried to juries. Though we do find that patentees' damages estimates are relatively small compared to those alleged in the U.S., these amounts nonetheless seem sufficiently high to support at least the sizeable portion of U.S. PAE suits that settle for less than the cost of mounting even a partial defense. In the U.S., individual PAEs have filed suits against hundreds of companies each—more than the total number of cases the U.K. sees each year—often with the goal of securing five-figure settlements (Love & Yoon 2013, pp. 1610-1611).<sup>27</sup> Potential damages are largely irrelevant to enforcement campaigns that, like these, are based largely on nuisance value.

Moreover, while damages may be relatively modest in Europe, non-monetary remedies might actually be stronger in at least some jurisdictions. Germany, in particular, is popular with patentees due in large part to the fact that German infringement actions proceed quickly and, when infringement is proven, virtually always result in an injunction barring future infringement even when the patentee does not practice the patent (Cremers et al. 2014).<sup>28</sup> In the U.S., by contrast, preliminary injunctions are rarely awarded (Lunseth 2009) and permanent injunctions are generally denied to non-practicing patentees (Seaman 2015; Gupta & Kesan 2015). Quick injunctions like those available in Germany can confer considerable holdup power on patentees, which can be used to extract settlements well in excess of the value of the patented technology (Shapiro 2010). Nonetheless, despite its courts' proclivity for issuing injunctions, Germany remains only moderately popular with PAEs compared to the U.S.

Another potential explanation for low rates of PAE suits is a lower bar for invalidating patents in Europe. First, while U.S. courts presume that patents are valid, European jurisdictions generally do not (LexisNexis 2015). Second, at least until recently, European jurisdictions were generally regarded as having more powerful mechanisms for invalidating issued patents outside the court system (Hall and Harhoff 2004).<sup>29</sup> However, as shown above, we find that PAEs litigating in Europe are actually less likely to face a validity challenge

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<sup>27</sup> PJC Logistics and ArrivalStar, for example, have collectively sued over 600 trucking companies, private auto fleet owners, and public bus and rail authorities that use GPS devices to track their vehicles (Chien 2013). Another PAE, GeoTag, has sued over 400 companies that operate websites with "store locator" functionality (Cotropia et al. 2014, pp. 688, 690).

<sup>28</sup> As Haft et al. (2011, p. 4) explain: "In proceedings on the merits, injunctive relief must be granted if the IPR is found infringed and if there is no exceptional ground justifying the infringement such as right of prior use etc."

<sup>29</sup> In 2012, the U.S. established a more powerful set of procedures from administratively challenging issued patents (Love and Ambwani 2014). Success rates in these new procedures are now quite similar to those seen in Europe (Chien and Helmers 2015).

than their U.S. counterparts and, perhaps not coincidentally, are also more successful on the merits of their claims than PAEs litigating in the U.S. A review of U.S. NPE suits related to those in our European database, included below in Table A-1, provides further confirmation. Thirty-eight NPE suits in our database were litigated in parallel with a U.S. action between the same two parties. Of these, fourteen were adjudicated to a decision on the merits, and the NPE lost eleven of those. In fact, among all 351 suits that NPEs in our database filed in the U.S. during the same timeframe, only nine cases were resolved on the merits in an NPE's favor.

Finally, we consider the possibility that fee-shifting deters PAEs from litigating in Europe. Though permitted by statute in the U.S., fee awards are rare in U.S. patent suits (Chien 2012, p. 377; Vishnubhakat 2014).<sup>30</sup> By contrast, in Europe, fee awards are the norm, though parties in U.K. suits generally preempt a ruling by the court and settle the allocation of litigation costs outside of court (Helmets et al. 2014). Thus, unlike those litigating in the U.S., NPEs deciding whether to file suit in Germany and the U.K. must consider the very real possibility that they will not only fail to win damages and recoup their own legal fees, but also that they will have to pay the accused infringer at least a large portion of the cost of defense.<sup>31</sup>

Though we see weak evidence for many other explanations, we do see reason to believe that fee awards are a key reason for the lack of PAEs in Europe. First, we observe that a relatively large fraction of European patent suits are filed preemptively by accused infringers, and also that a relatively small share of patent suits settle. In short, despite a cost of defense that can reach the equivalent of \$450,000 or more,<sup>32</sup> tech companies accused of infringement in Germany and the U.K. are disproportionately willing to fight to a judgment and, moreover, to initiate litigation and force the patentee's hand. Again, a comparison to related U.S. litigation bears this out—of the 351 patent suits filed in the U.S. by NPEs in our database, 289 (or roughly 82

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<sup>30</sup> In *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749, 1755–56 (2014), the U.S. Supreme Court relaxed the standard for awarding fees in patent suits. Since then, the rate of awards has roughly doubled, but nonetheless remains modest by European standards (Jiam 2015, pp. 15–22; Jones 2015, pp. 523–528).

<sup>31</sup> Helmets & McDonagh (2013b, p. 386) point out that in the UK costs are allocated on an issue-based approach. Since patent cases often deal with multiple issues, the issue-based approach means each party is awarded costs only for the specific issues won. Thus, for example, if an accused infringer pursued both invalidity and non-infringement defenses in a case in which the patent is upheld but found not infringed, the defendant can only claim costs related to the successful non-infringement defense.

<sup>32</sup> According to van Zeebroeck and Graham (2014, p. 664 n.30), European patent litigation typically costs about €100,000 to €400,000.

percent) settled. One explanation for this phenomenon is that accused infringers are more willing to fight, and less willing to settle, because they stand to recoup a large portion of their costs if they win.<sup>33</sup> Together, the high rate of infringer-filed actions and low rate settlement tend to suggest that fee-shifting acts to deter patent monetization by changing the behavior of both plaintiffs and defendants. Accused infringers become more likely to fight and, thereby, more likely to deny patentees a quick, positive settlement based on the cost of litigation and more likely to impose a large, negative penalty following a decision on the merits. As a result, patentees become less likely to file suit in the first place, especially when their cases are weak.

## Conclusion

Though patent assertion entities and other NPEs are indeed rare in Germany and the U.K. compared to their prevalence in the U.S., they nonetheless account for a substantial and largely unrecognized share of patent litigation in those countries. Precisely why that is so, remains uncertain. While various procedural distinctions between litigation in European and American courts likely play a role, the “English rule” of awarding attorney’s fees to the prevailing party in virtually every case stands out to us as a potential lynch pin. Although patent litigation in Europe appears to be sufficiently expensive—and European patent remedies sufficiently strong—to support a business model that thrives on nuisance value suits and hold-up power, for the most part one has not materialized.

Changes underway and on the horizon will soon put these conclusions to the test as the U.S. and E.U. each adopt features of the other’s litigation procedures. In the U.S., recent court rulings have substantially curtailed the scope of software patentability, and recent legislation has created a powerful administrative venue for challenging patents. Moreover, both pending legislation and recent court decisions promise to increase the regularity with which U.S. courts award fees in patent suits.<sup>34</sup> In the E.U., plans are well underway to create a “Unified Patent” system that would, in essence, “federalize” patent enforcement across E.U. member states (European Patent Office, 2015a; European Patent Office, 2015ab). In addition, longstanding bans

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<sup>33</sup> Economic theory suggests that fee-shifting tends to reduce the number of low-probability-of-success suits that are filed, but also to increase the likelihood that suits which are filed will proceed to trial rather than settle (Polinsky & Rubinfeld 1998). For an empirical look at these effects, see Rhode (2004).

<sup>34</sup> For a summary of the numerous patent reform bills introduced in the U.S. in recent years, see Patent Progress (2015).

on contingency fee representation are weakening in Europe<sup>35</sup> and creation of a Unified Patent Court system may well start a “race to the bottom” in which continent-wide claims shift to jurisdictions that are most patentee-friendly (McDonagh 2014, p. 26). As a result, many predict that Europe will see more PAE activity in the coming years and some even foresee it overtaking the U.S. as the worldwide venue of choice. On the other hand, if we are correct that fee shifting is a key driver of the differing U.S. and E.U. experiences with PAEs, things may not change that much after all.

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<sup>35</sup> The U.K. now permits a form of contingency fee representation known as “damages-based agreements” (The Damages-Based Agreements Regulations 2013). Also, in 2007, the German Constitutional Court struck down the nation’s blanket ban on contingency fees (Sebok 2007).

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**Table A-1: NPEs Litigating in the U.S. and Germany or the U.K.**

NPE	No. U.S. Cases	No. U.S. Defs.	U.S. Case Outcomes (W-L-Settled-Ongoing-Procedural)	Filing Date of Parallel Case(s) (Alleged Infringer)	Outcome of Parallel U.S. Case
Ablaise, Ltd.	13	17	0-1-12-0-0	-	-
Asulab, SA	1	3	0-0-1-0-0	-	-
CIF Licensing, LLC (cases filed as sole Plaintiff)	5	8	0-0-5-0-0	-	-
Dataquill Ltd.	8	9	0-2-6-1-0	3/25/2008 (HTC)	Partial S.J. Non-inf., Settled
Differential Weighing, Inc.	3	3	0-0-3-0-0	-	-
DSM IP Assets, BV	1	1	0-0-1-0-0	-	-
E Data Corp.	5	18	0-0-5-0-0	-	-
Golden Trade, SRL	5	33	0-0-5-0-0	-	-
Harold Richter	5	8	1-0-4-0-0	-	-
Inpro Licensing Sarl	3	4	0-0-2-0-1	11/18/2003 (T-Mobile); 10/31/2003 (RIM)	Settled; Procedural Dismissal (lack of jdx)
Interdigital Tech. Corp.	7	6	1-0-5-1-0	1/12/2005 (Nokia); 1/2/2013 (Nokia)	Settled; Ongoing
Inventio AG	2	1	0-0-1-1-0	-	-
Ipcom GMBH	2	2	0-0-1-1-0	11/3/2008 (HTC); 5/8/2008 (RIM)	Partial S.J. of Non-inf, stayed; Settled
Jens Ole Sorensen	5	5	0-1-3-0-1	-	-
Joerg H. Krumeich	1	1	0-0-1-0-0	1/18/2010 (Gebauer)	Settled
John Parkes	1	1	0-1-0-0-0	11/19/2003 (Cintec)	Default Judgment of Invalidity, Non-inf.
Laughlin Prods., Inc.	99	>200	1-0-95-0-3	6/25/2002 (Hollywood Tanning)	Settled
Lex Comp. & Mgmt. Corp.	2	2	0-0-1-0-1	-	-
Mandy Haberman	2	3	0-1-0-0-1	10/4/2000 (Playtex); 4/13/2005 (Playtex)	Procedural Dismissal; Verdict of Non-inf.
Mondis Tech. Ltd.	5	10	1-0-3-1-0	4/14/2010 (AOC); 12/23/2008 (TPV & AOC)	Settled; Verdict of Inf.
MPEG cases (filed jointly by two or more of: CIF Licensing, LLC; GE Tech. Dev., Inc.;	9	9	0-0-8-1-0	-	-

Columbia Univ.; Thomson Licensing)					
Multilyte Ltd.	1	1	0-1-0-0-0	8/13/2003 (Affymetrix)	S.J. of Non-inf.
Papst Licensing GMBH & Co.	26	44	2-1-11-12-0	-	-
Rambus, Inc.	17	14	2-4-11-0-0	8/28/2000 (Micron); 1/13/2006 (Micron); 8/29/2000 (Hyundai); 1/25/2005 (Hyundai); 2/29/2000 (Hitachi); 4/19/2000 (Hitachi); 4/21/2000 (Hitachi); 8/8/2000 (Infineon)	Verdict of Unenforceability; S.J. Non-Inf.; Verdict of Inf., S.J. Inf.; Settled, Settled, Settled; S.J. Non-Inf.
Regents of the Univ. of Cal.	12	34	1-1-9-0-1	12/16/2003 (Dendron)	Settled
Ronald A. Katz Tech. Licensing L.P.	5 <sup>1</sup>	>200	0-1-47-1-2	7/19/2005 (T-Mobile)	S.J. of Invalidity
Rovi Solutions Corp. (cases filed without United Video Properties or Starsight Telecast)	1	1	0-0-1-0-0	-	-
Sandvik Intell. Prop. AB	1	1	0-1-0-0-0	4/27/2009 (Kennametal)	Partial S.J. of Invalidity, Settled
Scico Tec GMBH	1	1	0-0-1-0-0	3/30/2007 (Boston Scientific)	Settled
Smartphone Tech., LLC	16	15	0-0-16-0-0	10/29/2010 (HTC); 10/31/2011 (HTC)	Settled; Settled
Starsight Telecast, Inc. (all cases filed jointly with Rovi Solutions and United Video Properties)	3	3	0-1-2-0-0	-	-
Stephen Tickner & Timothy Woodhouse	1	1	0-1-0-0-0	11/24/2000 (Honda)	Default Judgment of Invalidity, Non-inf.
Stretchline Intell. Prop., Ltd.	1	1	0-0-1-0-0	7/30/2010 (H&M)	Settled
The Mathilda & Terence Kennedy Institute of Rheumatology Trust	6	6	0-2-3-0-1	8/29/2014 (Hospira)	Settled
Thomson Licensing SA	5	8	0-0-3-0-2	-	-
Tip Comm'ns, LLC	1	1	0-0-1-0-0	3/9/2009 (Motorola)	Settled
Trustees of Columbia Univ.	9	20	0-1-8-0-0	12/7/2001 (Dell);	Settled;

(cases filed as sole-P)				11/16/2000 (Compaq)	Settled
United Video Properties, Inc. (all cases filed jointly with Rovi Solutions)	8	8	0-1-7-0-0	8/15/2011 (Sharp)	Settled
Vaelinge Innovation AB	3	4	0-0-3-0-0	1/14/2010 (Classen, Akzenta)	Settled
Vistaprint Tech. Ltd.	1	3	0-0-0-0-1	-	-
Vringo Infrastructure, Inc.	2	2	0-0-2-0-0	-	-
Yozmot 33, Ltd.	1	1	0-0-1-0-0	1/21/2009 (HTC)	Settled
<b>Total:</b>	351	>713	9-21-289-19-14		3-11-21-1-2