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Is There a Patent Troll Problem in the U.K.?

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This Article reports the findings of an empirical study of patent suits involving non-practicing entities (NPEs) in the U.K. between 2000 and 2010. Overall, we find that NPEs are responsible for 11% of all patent suits filed in the U.K. during this period. Though

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this is a small percentage by U.S. standards, our study suggests that patent trolling might not be as uniquely American as conventional wisdom suggests. We also find little support for many common explanations for Europe's relative scarcity of NPE activity. For example, we find that NPEs litigating in the U.K. overwhelmingly assert high-tech patents—even more so, in fact, than their U.S. counterparts—despite higher barriers to software patentability in Europe. Our study does, however, tend to support fee-shifting as a key reason for the U.K.'s immunity to NPEs. We see evidence that the U.K.'s loser-pays legal regime deters NPEs from filing suit, while at the same time encouraging accused infringers to defend claims filed against them. U.K. NPE suits are initiated by potential infringers more often than by NPEs; rarely end in settlement; very rarely end in victory for NPEs; and, thus, result in an attorney's fee award to the potential infringer more often than a damages award or settlement payment to the patentee. Together, these findings tend to support patent reform bills pending in the U.S. that would implement a fee-shifting regime for patent suits, and may also serve to lessen concerns that Europe's forthcoming Unified Patent Court will draw NPEs to Europe.

INTRODUCTION

Conventional wisdom states that "patent trolls"—entities that obtain patents not to facilitate the development of new products, but instead for the purposes of suing those who do—are a uniquely American phenomenon.[1] As the story goes, patent monetization is

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[1] *See, e.g.*, Stefania Fusco, *Markets and Patents Enforcement: A Comparative Investigation of Non-Practicing Entities in the US and Europe*, 20 MICH. TELECOMM. & TECH. L. REV. (forthcoming 2014) (manuscript at 105), *available at* http://ssrn.com/abstract=2156756 ("[P]atent trolls were believed to be almost exclusively confined within US borders . . . . European countries appeared to be immune to the activity of NPEs."); Anna Mayergoyz, Note, *Lessons from Europe on How to Tame U.S. Patent Trolls*, 42 CORNELL INT'L L.J. 241, 244 (2009) ("Europe has remained relatively unscathed by patent trolls."). European policymakers, in particular, have been quick to characterize "patent trolls" as a problem unique to America and absent in Europe. *See Communication From the Commission to the European Parliament, the Council and the European Economic and Social Committee*, at 6, COM (2008) 465 final (July 16, 2008) ("The quality of patents in Europe is generally perceived to be high. Nevertheless, stakeholders are concerned about maintaining and improving patent quality in

rarely pursued in Europe due to some combination of higher barriers to patenting software,[2] steeper cost of enforcement,[3]

Europe . . . . [because] [p]oor quality rights can also contribute to problems with 'patent trolls' that have arisen in the US judicial system"); Comments by Nuno Pires de Carvalho, Director, Intellectual Prop. & Competition Policy Div., World Intellectual Prop. Org (WIPO), Comments on PAEs' Activities (2013), *available at* http://www.justice.gov/atr/public/workshops/pae/comments/paew-0007.pdf ("PAEs-enforcers are a problem, if they can be deemed so, in the United States only . . . . [O]utside the United States to buy and hold patents with the mere purpose of enforcing them is not a financially wise decision."); Gail Edmondson, *European Patent Office Enters New Era: Managing the EU Unitary Patent*, SCIENCE BUSINESS (Mar. 6, 2013), http://www.sciencebusiness.net/news/76068/European-Patent-Office-enters-new-era-managing-the-EU-Unitary-Patent ("'I think patent trolls are linked to . . . injunction powers in the US legal system . . . . If we find a good balance between the interest of the patent holders and the interest of third parties—which is the basis of the European system—I am convinced we will have balanced and appropriate decisions.'" (quoting Benoît Battistelli, European Patent Office President)).

[2] *See, e.g.*, Peter Leung, *Will We See Globe-Trotting Patent Trolls Anytime Soon?*, MANAGING INTELL. PROP. BLOG (June 20, 2013), http://www.managingip.com/Blog/3221150/Will-we-see-globe-trotting-patent-trolls-any-time-soon.html ("In Europe, NPEs are still less active than in the US, perhaps due to key differences such as the unavailability of software and business method patents . . . ."). In the U.S., software has been generally patentable since at least 1998. *See* State St. Bank v. Signature Fin. Grp., 149 F.3d 1368 (Fed. Cir. 1998), *abrogated by In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008). In Europe, the situation is more complex. 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 art. 52, Oct. 5, 1973, 1065 U.N.T.S. 255 [hereinafter European Patent Convention (EPC)]. However, as applied by the European Patent Office and U.K. courts, 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, ¶ 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., ¶¶ 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. *See* Patrick E. King et al., *The Confluence of European Activism and American Minimalism: "Patentable Subject Matter" after Bilski*, 27 SANTA CLARA COMPUTER & HIGH TECH L.J. 247, 255 (2011) ("Over the last twenty years, the EPO has effectively read the restriction against 'programs for computers' out of Article 52(2) in its struggle to find a test that affords the appropriate protection to inventions in the computer age.").

[3] *See, e.g.*, Mayergoyz, *supra* note 1, at 268–70 ("One . . . explanation for the lack of patent trolls in Europe relative to the United States is the European patent enforcement system as a whole; that is, complex and varying national laws may in themselves scare away the patent trolls."). In the U.S., a patent can be enforced nationwide in one district

cheaper cost of defense,[4] smaller damages awards,[5] differing cultures,[6] and more frequent attorney's fee awards.[7]

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court. *See, e.g.*, Charlene Morrow & Sara Jenkins, *Legal FAQ: Introduction to Patent Litigation*, FENWICK & WEST LLP, http://www.fenwick.com/FenwickDocuments/Legal_FAQ_Patent_Litigation.pdf (last visited Nov. 10, 2013) ("A patent infringement case can be filed in any district in the United States that has personal jurisdiction over the defendant . . . ."). A patent can also be enforced for little or no up-front out-of-pocket expense due to the use of contingency fee representation. *See generally* David L. Schwartz, *The Rise of Contingency Fee Representation in Patent Litigation*, 64 ALA. L. REV. 335 (2012). Under the EPC—at least for the time being, *see infra* notes 9–10 (describing proposals to create a Unified Patent Court)—patents are national rights that can only be enforced within the bounds of each member nation. *See, e.g.*, TERENCE PRIME, EUROPEAN INTELLECTUAL PROPERTY LAW 176, 195 (2000). As a result, widespread patent enforcement in Europe generally 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. *See, e.g.*, *Population (Total*), WORLD BANK, http://data.worldbank.org/indicator/SP.POP.TOTL (last visited July 17, 2013) (showing that the U.S. population is roughly 314 million, approximately equal to that of France, Germany, Italy, Spain, and the U.K. combined). In addition, most European nations, including the U.K., prohibit contingency fee litigation. *See, e.g.*, Eric Helland & Alexander Tabarrok, *Contingency Fees, Settlement Delay and Low-Quality Litigation: Empirical Evidence from Two Datasets*, 19 J. L. ECON. & ORGANIZATION 517, 518 (2003) ("In Europe, contingency fees typically are illegal or unenforceable . . . ."). 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. *Cf.* Virginia G. Maurer et al., *Attorney Fee Arrangements: The U.S. and Western European Perspectives*, 19 NW. J. INT'L L. & BUS. 272, 307 (1999).

[4] *See, e.g.*, Mayergoyz, *supra* note 1, at 260 (noting that U.S. patent trolls can "extract exorbitant licensing agreements" from their targets due to "two intertwined hurdles—the overwhelming cost of litigation and a high standard for proving patent invalidity," both of which are less onerous in Europe). Patent litigation is generally less expensive in Europe than it is in the U.S; the median cost of defending a U.S. patent case is about $2.5 million. AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION, REPORT OF THE ECONOMIC SURVEY 2011 at I-155-56 (reporting median litigation costs of $2.5 million among survey respondents involved in mid-sized patent suits, i.e., those with between $1 million and $25 million at stake). In Europe, litigation costs about €100,000 to €400,000, or about $130,000 to $525,000, per party. Nicolas van Zeebroeck & Stuart Graham, *Comparing Patent Litigation Across Europe: A First Look* 5 n.4 (Sept. 8, 2011), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1924124&download=yes. Potential infringers in Europe also have access to stronger, cheaper, and faster administrative alternatives to litigation. *See, e.g.*, Bronwyn H. Hall & Dietmar Harhoff, *Post-Grant Reviews in the U.S. Patent System: Design Choices and Expected Impact*, 19 BERKELEY TECH. L.J. 989, 1002–1007 (2004); Mayergoyz, *supra* note 1, at 260–63.

[5] *See, e.g.*, Fusco, *supra* note 1, at 120 (citing Thomas F. Cotter, Global Perspectives on Patent Law, (July 26, 2012) (unpublished manuscript) (on file with author) ("The most common explanations in the literature for the reduced presence of NPEs in Europe rely

Despite the common refrain, few scholars have studied patent troll litigation outside the U.S. and, as a result, little empirical evidence supports these frequent claims. The lack of data on Europe's experience with trolls is especially surprising today because those findings are now more relevant than ever in both the U.S. and Europe. In the U.S., patent reform efforts targeting trolls are well underway. Over roughly the last year, twelve separate bills have been introduced, many proposing the adoption (or expansion) of procedures long thought to be "troll-killers" in Europe.[8]

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on differences in the US and EU legal systems; in particular, they point to the availability of certain injunctions as well as the different level of damages awarded in patent cases."). The median damages award in a U.S. patent case between 1995 and 2010 was about $5.1 million, substantially higher than the average in Europe. *See* Chris Barry et al., *2011 Patent Litigation Study*, PRICE WATERHOUSE COOPER 9, http://www.pwc.com/en_US/us/forensic-services/publications/assets/2011-patent-litigation-study.pdf (last visited Mar. 4, 2014); Zeebroeck & Graham, *supra* note 4, at 5 n.5 (noting, for example, that the average patent infringement award in France was just over €21,000, roughly $28,000, in 1998); *see also* THOMAS F. COTTER, COMPARATIVE PATENT REMEDIES: A LEGAL AND ECONOMIC ANALYSIS 287 (2013) ("Among the broader structural features that keep damages judgments in check may be the absence of jury trials and limitations on discovery.").

6 *See* Fusco, *supra* note 1, at 125–26; Miquel Montañá, *Obama on Patent Trolls: Will They Be Kept at Bay in Europe?*, KLUWER PATENT BLOG (June 13, 2013), http://kluwerpatentblog.com/2013/06/13/obama-on-patent-trolls-will-they-be-kept-at-bay-in-europe (listing "a less litigious culture" as one reason for less patent troll activity in Europe).

7 *See, e.g.*, Morag Macdonald, *Beware of the Troll*, THE LAWYER (Sept. 26, 2005), http://www.thelawyer.com/beware-of-the-troll/116783.article ("Europe is less attractive to [patent trolls] for a number of reasons. The main one of these is . . . . [i]n the US, if you lose a patent claim, you will only have to bear your own legal costs and not those of the winning party, as is the case to a greater extent in Europe."). Though expressly permitted by law, fee-shifting in U.S. patent cases is quite rare. *See* Colleen V. Chien, *Reforming Software Patents*, 50 HOUS. L. REV. 323, 377 (2012) (reporting that between 2005 and 2011, fees were awarded in just 56 of the approximately 3,000 total patent infringement suits). By contrast, fee-shifting is routine in all types of cases across Europe. *See id.* at 368.

8 *See* Posting of Matt Levy to the Patent Progress Blog, Patent Progress's Guide to Patent Reform Legislation, http://www.patentprogress.org/2014/03/04/patent-progresss-guide-to-patent-reform-legislation (Mar. 4, 2014) (listing, summarizing, and linking to the text of all 12 bills). On December 5, 2013, the U.S. House of Representatives passed the Innovation Act, H.R. 3309, 113th Cong. (2013), sponsored by Rep. Bob Goodlatte, Chairman of the House Judiciary Committee, by a vote of 325 to 91. *See, e.g.*, *id.* The Innovation Act proposes a number of reforms, including presumptive two-way fee-

Europe similarly stands on the precipice of fundamental changes to its patent system. In 2013, twenty-five EU member nations (including the U.K.) agreed to found a Unified Patent Court.[9] If ultimately implemented, the court will allow some European patent owners—those who hold a "unitary patent"—to litigate continent-wide infringement allegations in a single court rather than seeking redress in each individual country, similar to the way in which U.S. patentees can pursue infringement claims in a single federal district court without filing suit in each state.[10] Many fear that this "federalization" of European patent enforcement will attract patent trolls to Europe.[11]

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shifting, a heightened pleading standard, patent ownership disclosure requirements, and codification of the customer suit exception. *Id.* In addition, on June 4, 2013 the President released a set of executive orders and "legislative recommendations" expressing his support for many of the provisions included in pending patent reform bills, including more frequent attorneys fee awards. Press Release, The White House, Office of the Press Secretary, Fact Sheet: White House Task Force on High-Tech Patent Issues (June 4, 2013), *available at* http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-high-tech-patent-issues.

[9] *See Unified Patent Court*, EUROPEAN PATENT OFFICE, http://www.epo.org/law-practice/unitary/patent-court.html (last updated June 3, 2013). The only E.U. members not to approve the court are Poland and Spain. *See Unitary Patent Ratification Process*, EUROPEAN COMMISSION, http://ec.europa.eu/internal_market/indprsop/patent/ratification/index_en.htm (last updated Sept. 25, 2013).

[10] Creation of the Unified Patent Court will coincide with transition to a "unitary patent" giving protection across the continent. *See Unitary Patent*, EUROPEAN PATENT OFFICE, http://www.epo.org/law-practice/unitary/unitary-patent.html (last updated Jan. 28, 2013) (noting that the unitary patent system, which has been provisionally approved by all E.U. members except Italy and Spain (and Croatia, which joined the EU after the agreement was signed), will go into effect on "1 January 2014 or the date of entry into force of the Agreement on a Unified Patent Court, whichever is the later"). Under the current regime, though a single application can be filed with the E.P.O., patents ultimately must issue from (and fees must be paid to) each individual nation state in which the patentee wishes to have protection. *See, e.g.*, Samson Helfgott, *PCT Filing and International Prosecution*, AM. INTELL. PROP. L. ASS'N 8, http://www.aipla.org/learningcenter/library/papers/bootcamps/07patentbootcamp/Documents/Helfgott-paper.pdf (last visited Mar. 4, 2014) ("[The E.P.O.] is a centralized search and examination organization operating on behalf of all of its member states . . . . [that] issues a grant of a European patent. However, such grant does not give any rights. Once granted it is then necessary for the applicant to decide into which of the member states he now wants his patent to be effective . . . . [and] provide the filing fees for entry into that country.").

[11] *See, e.g.*, EUROPEAN SCRUTINY COMMITTEE, THE UNIFIED PATENT COURT—HELP OR HINDRANCE?, 2010–12, H.C. 1799-I, at Ev w2 (arguing that the Unified Patent Court

Compared to the enormity of these proposed changes, relevant empirical evidence is in short supply. Many important questions lack definitive answers. Are trolls as rare in Europe as the conventional wisdom suggests? If so, are they scarce due to the existence of procedural rules—such as fee-shifting provisions—similar to those proposed in patent reform bills presently under consideration in the U.S.? Or is the scarcity due to other reasons entirely—for instance, due to safeguards that a unified patent court might eliminate?

In this Article, we take a first step toward answering these questions by reporting the findings of a study of patent litigation filed in the U.K.[12] between 2000 and 2010 by patent holders that do not sell a product—commonly referred to as non-practicing entities ("NPEs").[13] We find that lawsuits involving NPEs are indeed rare in the U.K., but hardly non-existent. Overall, NPEs account for eleven percent of patent suits litigated in the U.K. over the entire 2000-2010 period.[14]

Taking a closer look at NPE litigation outcomes, we also make tentative assessments of common explanations for the lack of NPE

"will favour non-practising entities (or patent trolls) to the detriment of UK manufacturing companies" (statement of James Hayles, President, IP Federation)), *available at* http://www.publications.parliament.uk/pa/cm201012/cmselect/cmeuleg/1799/1799vw.pdf; Danny Hakim, *Tech Giants Fear Spread of Patent Wars to Europe*, N.Y. TIMES, Sept. 25, 2013, at B1 (reporting that a group of 14 American and European companies sent a letter to European officials expressing "fear that the new [Unified Patent Court] system could be vulnerable to what they call patent assertion entities, less politely known as patent trolls"); Alanna Byrne, *EU to Adopt Unified Patent Court System*, INSIDECOUNSEL (Mar. 4, 2013), http://www.insidecounsel.com/2013/03/04/eu-to-adopt-unified-patent-court-system ("[T]he unified patent court could bring more patent trolls out of the woodwork, since successful plaintiffs will be able to recover damages in nearly all EU countries.").

[12] As we discuss below, the U.K. shares many things in common with the U.S. (both culturally and legally) and, thus, makes a good jurisdiction for comparative purposes. *See infra* note 96.

[13] The reason for not analyzing cases filed post-2010 is that complex patent cases can take several years to pass through the courts system, particularly if there are appeals. For this reason, we only include cases filed up to 2010 in order to ensure as far as possible that we analyze cases that have reached an end point, either via settlement or via court ruling.

[14] We find an additional four cases filed by companies that, though they are not NPEs by our definition, purchased a large portfolio of patents for the purposes of monetization and, as a result, have been referred to as "patent trolls" by others. *See infra* Part II.A.

suits in Europe. Notably, our findings cast doubt on the assertion that NPEs rarely sue in Europe because they are unable to obtain high-tech patents. To the contrary, we find that NPEs litigating in the U.K. overwhelmingly—almost exclusively, in fact—assert high-tech patents, particularly those related to information and communications technology.

Our findings tend to suggest, instead, that attorney's fee awards are a key factor in the scarcity of NPE activities in Europe. We find that U.K. NPEs, like their American counterparts, are extremely unsuccessful in their patent assertion efforts. NPEs fail to prove infringement and have their patents invalidated—"revoked" in U.K. patent parlance—much more often than their product-producing counterparts. Moreover, companies accused of infringement in the U.K. choose to litigate their cases to judgment, rather than settle, at relatively high rates. As a result, we find that U.K. NPEs wind up *paying* large fee awards—generally in excess of £250,000—more often than they receive damages awards and settlement payments from the tech companies they sue. In fact, our data suggests a pattern in which NPEs try their hand at litigation in the U.K., ultimately lose, pay a large fee award, and never attempt to litigate in the jurisdiction again.

Though we caution against drawing broad conclusions from such a small number of cases, our findings tend to suggest that fee-shifting deters NPEs from litigating in the U.K., and thus, fee-shifting may successfully reduce the number of NPE suits in the U.S. as well. Likewise, these findings may indicate that critics of the Unified Patent Court are—so long as the Unified Patent Court routinely awards attorney's fees to winning litigants, which the current agreement states it will[15]—overestimating the court's impact on NPE activity.

This Article proceeds as follows. Part I describes the methodology used in this study, Part II describes our findings with

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[15] *See* Council Agreement on a Unified Patent Court No. 16351/12 of 20 June 2013, art. 69, 2013 O.J. (C 175) 1, 18–19, *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:175:0001:0040:EN:PDF (stating that "[r]easonable and proportionate legal costs and other expenses incurred by the successful party shall, as a general rule, be borne by the unsuccessful party, unless equity requires otherwise, up to a ceiling set in accordance with the Rules of Procedure").

respect to NPE litigation, and Part III explores what our findings suggest about conventional wisdom on trolling in Europe.

I. STUDY DESIGN

To study NPE litigation in the U.K., we set out to identify and gather key information with respect to all patent suits filed in England and Wales between 2000 and 2010 that were settled or litigated to a final adjudication. In this Part, we explain how we constructed our database and what data we collected.

A. Compiling a Database of Patent Suits

The U.K. includes three independent judicial systems: England and Wales, Scotland, and Northern Ireland.[16] In England and Wales, patent suits can be brought in one of two courts—most often in the Patents Court division of the High Court ("PHC") and, far less often, in the Patents County Court division of the Central London County Court ("PCC").[17] Cases from both courts can be appealed to the Court of Appeal and the Supreme Court of the United Kingdom (formerly the House of Lords).[18] Patent suits may also be brought in Scotland and Northern Ireland, but the number actually filed in these jurisdictions is negligible and, thus, they do not play a role in our study.

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[16] *See, e.g.*, *The Justice System and the Constitution*, JUDICIARY OF ENGLAND AND WALES, http://www.judiciary.gov.uk/about-the-judiciary/the-judiciary-in-detail/jud-acc-ind/justice-sys-and-constitution (last visited Nov. 13, 2013) ("The United Kingdom has three separate legal systems; one each for England and Wales, Scotland and Northern Ireland.").

[17] The PCC was created in 1990 to serve as an alternative venue to the PHC offering quicker and less expensive resolution of infringement claims—that is, what might be referred to in the U.S. as a patent "small claims" court. *See* H.M. CTS. & TRIBUNALS SERVICE, THE PATENTS COUNTY COURT GUIDE 3 (2012), *available at* http://www.justice.gov.uk/downloads/courts/patents-court/patents-court-guide.pdf ("[S]et up in 1990[,] . . . . [t]he PCC was intended to provide a less costly and less complex alternative to the High Court, Patents Court. The Patents Court is intended to deal with larger and more complex claims."). On October 1 2013, the PCC was renamed the Intellectual Property and Enterprise Court, but for the entirety of our study it was known as the PCC, and shall be referred to as such throughout this Article.

[18] Interim orders of the PCC cases are appealed to the PHC, but final orders are appealed to the Court of Appeals. *See id.* at 11.

To identify relevant patent cases filed in the PHC, we consulted the H.M. Courts and Tribunals Service's Patents Court Diary.[19] The Diary is a listing of all hearings scheduled before the PHC since December 1997 and, accordingly, contains at least one listing for all cases in which the defendant was served and responded.[20] Claims that are filed, but settle before a defendant responds, are not made publicly available and, thus, are not included in our dataset.[21] The diary entries provide basic information on the pertinent court cases, including the case number, the names of at least one claimant and at least one defendant, their legal representatives, the date of the scheduled hearing, and often whether the hearing was subsequently cancelled because the case was settled or stayed.[22] Using this information, we searched detailed court records available via the British and Irish Legal Information Institute,[23] Lexis,[24] and Westlaw[25] to record additional parties to the cases, the patents-in-suit, and case outcomes.[26] Finally, to ensure that our database reflects only

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[19] *See Patent Courts Diary*, H.M. CTS. & TRIBUNALS SERVICE, http://www.justice.gov.uk/courts/court-lists/list-patents-court-diary (last visited Mar. 4, 2014).

[20] The Diary includes case management hearings, which the plaintiff must apply for within fourteen days of the defendant's answer. *See* H.M. CTS. & TRIBUNALS SERVICE, CIV. P. R., PART 63.8, PRACTICE DIRECTION 5.3, *available at* http://www.justice.gov.uk/courts/procedure-rules/civil/rules/part63/pd_part63#IDAPGAKC ("The claimant must apply for a case management conference within 14 days of the date when all defendants who intend to file and serve a defence have done so."). This means that cases are listed in the Court Diary regardless of whether a hearing eventually takes place; that is, if a case is settled or withdrawn before the first hearing, the case is still listed on the diary.

[21] There is no public data available on the number of cases dropped before an answer is filed. Some cases heard at the Patents Court do not involve patents, but instead solely concern other IP rights such as design rights. These cases were also excluded from our study.

[22] *See supra* note 19.

[23] BRITISH & IRISH LEGAL INFO. INST., http://www.bailii.org (last visited Mar. 1, 2014).

[24] LEXISNEXIS UK, http://www.lexisnexis.co.uk (last visited Mar. 1, 2014).

[25] WESTLAW UK, http://www.westlaw.co.uk (last visited Mar. 1, 2014).

[26] These sources did not provide any court records for a small number of cases that were listed in the diary, but which settled very quickly, often before even a preliminary court hearing. For these cases we searched additional sources, such as media websites, blogs or the websites of parties' legal representatives to gather as much information as

litigation involving issued patents, we excluded cases representing appeals from administrative decisions of the UK Intellectual Property Office (UK IPO).[27]

PCC court records are not publicly available and, thus, are not included in our database.[28] The best data we were able to obtain consisted of anonymized records for PCC cases adjudicated in 2007 and 2008.[29] These records suggest to us that less than ten percent of U.K. patent litigation takes place at the PCC[30] and that NPEs virtually never file suit there.[31]

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possible. In some instances, we were unable to obtain complete information; however, there is a core set of variables that we were able to obtain for all cases.

[27] These cases are the U.K. equivalent of appeals from the U.S. Patent Trial and Appeal Board (formerly the Board of Patent Appeals and Interferences). *Compare* Patents Act, 1977, c. 37, § 8 (U.K.) (establishing a patent applicant's right to "refer" patentability decisions to the Comptroller General), *and* Patents Act, 1977, § 97 (stating that decisions of the Comptroller can be appealed to the PHC), *with* 28 U.S.C. § 1295 (2012) (granting the U.S. Court of Appeals for the Federal Circuit jurisdiction to hear appeals from the Patent Trial and Appeal Board (PTAB)), *and* 35 U.S.C. § 6 (2012) (establishing the PTAB).

[28] The PCC now publishes a case diary, but began doing so only in February 2011. *See* Intellectual Property Enterprise Court (formerly Patents County Court) Diary, MINISTRY OF JUSTICE (Feb. 26, 2014), http://www.justice.gov.uk/courts/court-lists/patents-county-court-diary.

[29] This information was generously provided to us by the UK IPO, which previously received special permission to hand collect a small amount of data directly from the PCC's archives provided it did not reveal the identity of the litigating parties.

[30] Based on our anonymized dataset of 2007-2008 PCC cases, we estimate that less than 10% of U.K. patent suits are filed in the PCC. *Accord* Zeebroeck & Graham, *supra* note 5, at 8 n.11 (noting that "the official Patent High Court diary . . . appeared to include over 90% of all [U.K. patent] cases decided in the period 2000–2009").

[31] For one, cases brought in the PCC are limited in a number of respects for the express purpose of significantly reducing the cost of defense and the possible recovery—both of which patent trolls traditionally try to maximize. *See* Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117, 2128 (2013) (dividing trolls into three primary groups: those that shoot for large damages awards, those that impose litigation costs to extract nuisance-value settlements, and those that aggregate large numbers of patents and rarely litigate). For example, a patentee litigating at the PCC can recover no more than £500,000 in damages and £50,000 in legal costs, *see* THE PATENTS COUNTY COURT GUIDE, *supra* note 17, at 3, and generally will be limited to asserting no more than 3 claims, *id.* at 17. Two of us previously estimated that, in practice, the amount at stake and fees incurred in PCC cases are typically far below these maximums. *See* Christian Helmers & Luke McDonagh, *Patent Litigation in the UK*, 10 LAW SOC'Y ECON., Legal Studies Working Paper No. 13 (2012), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2154939&download=yes (estimating that the average PCC case involves about £50,000 in damages and £10,000 in legal fees).

In all, we located 300 patent suits[32] at the PHC over the eleven-year period 2000-2010.[33]

B. Patent-, Party-, and Suit-Specific Data

For each suit, we gathered a variety of data relating to the outcome of the litigation and the patents and parties involved.[34]

Second, we find that patents enforced at the PCC are relatively young and overwhelmingly cover simple mechanical inventions. *Id.* They are not old high-tech patents, which tend to be trolls' weapon of choice. *See infra* note 71 and accompanying text. This uniformity may result from the fact that the PCC can transfer to the PHC cases that involve complex technology. THE PATENTS COUNTY COURT GUIDE, *supra* note 17, at 18. Finally, though we cannot identify the specific parties to these PCC cases, we can tell from court records that none of the patentees were individuals. *See* Helmers & McDonagh, *supra* (manuscript at 13–14). Rather, they appear to be small companies that have been in business for a number of years in the metals/machinery industry. *See id.* We are aware of just two counter examples. One is an NPE case in our database that was filed in the PHC, but subsequently transferred to the PCC. *See* Envtl. Recycling Techs. Plc v Upcycle Holdings Ltd., [2012] EWHC 2097 (Pat) (Eng.) (transferring an NPE revocation suit originally filed in the PHC to the PCC because the patentee was relatively unsophisticated and unable to afford full-blown litigation expenses). The other, which we discovered by searching media reports, is the only NPE suit we know of that was litigated exclusively in the PCC during the time period of our study. *British Judge Rocks E-Data in Patent Suit*, LONG ISLAND BUS. NEWS (July 1, 2005), http://libn.com/2005/07/01/british-judge-rocks-edata-in-patent-suit ("Last month, E-Data, a 'patent troll' whose revenue hinges on pursuing infringement cases based on its intellectual property, lost a key case [in the PCC] . . . .").

[32] For the purpose of clarity, where a number of separately filed cases involving the same parties were joined and heard together we considered these cases to be "one case." The distribution of cases over the sample period is as follows: 2000: 19; 2001: 22: 2002: 24; 2003: 28; 2004: 27; 2005: 28; 2006: 40; 2007: 31; 2008: 37; 2009: 21; 2010: 23.

[33] Two of us previously published a paper looking at this data for 2000-2008 in greater detail. Helmers & McDonagh, *supra* note 31. By way of comparison, roughly ninety-four times more patent suits were filed in the U.S. during the same period. LEX MACHINA, Districts, https://lexmachina.com/members/courts?filter=Patent (last visited July 19, 2013) (showing that there were 28,180 total patent suits filed in the U.S. between 2000 and 2010). On a per capita basis, the ratio of U.S. to U.K. patent suits shrinks to 19:1. *See Population (Total*), *supra* note 3 (showing that the population of the U.K. is roughly 1/5 of the U.S. population). On a per patent basis, the ratio is even smaller, roughly 5:1. *Compare* U.S. Patent Statistics Chart: Calendar Years 1963-2012, U.S. PAT. & TRADEMARK OFF., http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm (last visited Mar. 4, 2014) (showing that the U.S. issued 2,071,149 patents between 2000 and 2010, including patents granted in 2000 and 2010), *with Statistical Country Profiles: United Kingdom*, WIPO, http://www.wipo.int/ipstats/en/statistics/country_profile/countries/gb.html (last visited Mar. 3, 2014) (showing that the U.K. issued 106,969 patents between 2000 and 2010).

First, for each patent-in-suit, we identified the patent's priority date[35] and technology classifications.[36]

Next, for each suit, we identified all litigating parties and determined whether or not each patentee was an NPE. In this study we define NPE as any patent-asserting[37] entity that did not sell a product or (non-IP related) service at the time of its suit.[38] As a result, our database includes entities that fall outside the scope of other common designations like "patent assertion entity" (PAE)[39] and excludes others that have been hit on occasion with

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[34] In gathering this data we used a standardized case template created in collaboration with Ulrike Till.

[35] As in the U.S., the priority date for a patent in the U.K. is the filing date of the patent's application or of the earliest relevant parent application to which it claims priority. *Compare* Convention on the Grant of European Patents, art. 63, Oct. 5, 1973, 1065 U.N.T.S. 255, *with* 35 U.S.C. § 154(a)(2) (2012). Detailed information on the litigated patents was obtained from the European Patent Office's (EPO) Espacenet and PATSTAT (version October 2011). Since court records are not available for all cases and some court records do not identify the patent numbers, we have information on litigated patents for only 57% of court cases (171 cases) but 91% of all NPE cases (30 cases).

[36] Specifically, we identified the patent's International Patent Classification number. *See International Patent Classification (IPC) Official Publication*, WIPO, http://web2.wipo.int/ipcpub/#refresh=page (last visited July 19, 2013), as listed on PATSTAT.

[37] As discussed in greater detail below, we included both cases in which an NPE is suing a product-producing company for infringement and cases in which a product-producing company is pre-emptively suing an NPE in hopes of invalidating one or more of its patents or showing that they are not infringed. We excluded all other cases involving NPEs; for example, revocation actions filed by NPEs, disputes over patent ownership between NPEs and other parties, and disputes over the terms of already-executed license agreements between NPEs and other parties. Finally, we also excluded cases in which NPEs sued along with their product-producing exclusive licensees.

[38] 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 "non-competing entities," which are "practicing compan[ies] asserting patents that [they] do[] not [themselves] practice." *See* Colleen V. Chien, *Startups and Patent Trolls*, STAN. TECH. L. REV. (forthcoming 2014) (manuscript at A-6, A-6 n.2), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract-id=2146251 (describing the RPX database she and other scholars have used and explaining that she excluded NCEs from her analysis).

[39] Colleen Chien, who coined the term, defined PAEs as "entities . . . focused on the enforcement, rather than the active development or commercialization of their patents." Colleen V. Chien, *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, 62 HASTINGS L.J. 297, 328 (2010). The term "excludes universities, startups and others who seek to commercialize or transfer their

the "patent troll" moniker despite selling products at the time of suit.[40]

Accordingly, we report statistics below for all NPEs, as well as the subset of NPEs that best fit the traditional definition of PAE. We also point out a set of suits brought by patentees that fall outside our definition of NPE and PAE but nonetheless share many characteristics in common with PAEs. In this way, rather than providing our own definition of "patent troll," we invite the reader to decide for him or herself where to draw the line.

To classify among NPEs, we use a modified version of the NPE taxonomy developed by Lemley and Myhrvold.[41] Our classifications are shown below in Table 1. Class 1 includes companies in the business of enforcing patents acquired from others or salvaged from a failed product company or start-up.[42] Class 2 includes companies founded by an inventor for the purpose of holding and enforcing his or her own patents. Class 3 includes universities and spin-offs formed to hold and enforce patents developed by university faculty.[43] Class 4 includes start-up companies suing while their first product is still in development. Class 5 includes individual inventors suing in their own name. Class 6 includes companies formed to hold and enforce a patent pool created by a consortium of product-producing companies. And, finally, Class 7 includes companies formed to hold and

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technology." Chien, *Startups and Patent Trolls*, *supra* note 38, at 1 n.3. Jeruss, Feldman, and Walker use a similar term, "patent monetization entity" (PME), which they define as "entities whose primary focus is deriving income from licensing and litigation, as opposed to making products." Sara Jeruss et al., *The America Invents Act 500: Effects of Patent Monetization Entities on US Litigation*, 11 DUKE L. & TECH. REV. 357, 361 (2012) (internal quotation marks omitted). They exclude universities and individuals from the definition, but do include at least some IP-holding subsidiaries of product-producing companies. *See id.* at 369–70 ("[I]f a computer manufacturer were to spin part of its patent portfolio off into a separate entity . . . the spin-off should be classified as a patent monetization entity.").

40 *See infra* Part II.A.

41 *See* John R. Allison et al., *Extreme Value or Trolls on Top? The Characteristics of the Most-Litigated Patents*, 158 U. PA. L. REV. 1 (2009).

42 Our Class 1 is a combination of Lemley-Myhrvold Classes 1, 3, and 4. *See id*.

43 Our Class 3 is a combination of Lemley-Myhrvold Classes 6 and 2. *See id*. We find no examples of patents asserted by government entities or NGOs.

enforce patents covering technology developed by a product-producing parent company.

Table 1: NPE Types

Entity Class	Description
1	IP Licensing Company, Acquired Patents
2	IP Licensing Company, Owned by Inventor
3	University or Spin-off
4	Start-up, Suing Pre-Product
5	Individual
6	Industry Consortium
7	IP Subsidiary of a Product-Producing Company

To classify the patentees in our database, we combined information obtained from court records, the patents-in-suit, the entities' websites, and third-party databases like Compustat, Bureau van Dijk's FAME and AMADEUS, and the ICC British Company Directory.

Finally, we identified the type and outcome of each suit. English patent suits, like those filed in the U.S., can take one of several forms. In addition to a typical infringement action—in which the patentee is the plaintiff and the defendant is the accused infringer—companies that fear future liability for patent infringement may themselves pre-emptively file suit against the patentee.[44] In the U.K., these suits are known as "revocation" actions because they seek to invalidate, or "revoke," the patent-in-suit.[45] We also observed a second form of declaratory judgment

[44] Patent litigation at the PHC is guided by the Civil Procedure Rules (CPR). *See generally* H.M. CTS. & TRIBUNALS SERVICE, CIV. P. R., *available at* http://www.justice.gov.uk/courts/procedure-rules/civil/rules (last visited Mar. 4, 2014).

[45] *See* UNITED KINGDOM INTELLECTUAL PROPERTY OFFICE, LITIGATION MANUAL, Ch. 14 (March 2013 ed.), *available at* http://www.ipo.gov.uk/litigation-chapter14.pdf. In conjunction with a revocation claim, or as an alternative to such a claim, a party can also seek a "declaration of non-infringement." The analogy between U.S. declaratory

action, one that seeks not to invalidate a patent but rather a declaration that it is not essential to an industry standard and, thus, not infringed by all products that comply with the standard.

In addition to the type of claim underlying each suit, we identified the suit's ultimate outcome. We noted whether the suit settled or reached a final judgment and, if it was adjudicated, whether or not the patent-in-suit was found valid and infringed.[46] If the patent-in-suit was found valid and infringed, we recorded what remedies were awarded.[47] If the patent was revoked or found not-infringed, we instead recorded whether the court awarded the accused infringer attorney's fees and, if so, how much.[48]

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judgment actions and U.K. revocation actions is not a perfect one because the U.S. Constitution limits federal courts' jurisdiction to hear pre-emptive actions like these. *See* Aetna Life Ins. Co. v. Haworth, 300 U.S. 227, 239–41 (1937) (interpreting art. 3, sec. 2 of the U.S. Constitution, which limits juridical power to "cases" and "controversies," as limiting federal courts' jurisdiction to "definite and concrete," as opposed to "hypothetical or abstract," disputes). As applied in the patent context, U.S. courts until recently would only exercise jurisdiction over declaratory judgment actions in which the plaintiff held "a reasonable apprehension of *imminent* suit." Teva Pharm. USA, Inc. v. Pfizer, Inc., 395 F.3d 1324, 1333 (Fed. Cir. 2005), *abrogated by* MedImmune, Inc. v. Genentech, Inc., 549 U.S. 118 (2007). Thus, in theory, revocation actions can be brought more freely in the U.K. than declaratory judgment actions in the U.S. *See* Mark D. Janis, *Rethinking Reexamination: Toward a Viable Administrative Revocation System for U.S. Patent Law*, 11 HARV. J.L. & TECH. 1, 109 (1997) (noting that the U.K. revocation system "employs a liberal standing requirement; no showing of interest is required"). Nonetheless, we find that most revocation/non-infringement actions filed against NPEs in the U.K. (14 of 19 total) were brought close in time to parallel actions filed in the U.S.—i.e., when there did, in fact, appear to be a concrete dispute between the parties. *Cf.* Arkema, Inc. v. Honeywell Int'l, Inc., 706 F.3d 1351, 1357 (Fed. Cir. 2013) (finding jurisdiction to hear a declaratory judgment action brought against a patentee who had previously sued for infringement of foreign-counterpart patents in Germany and of other less-relevant patents in the U.S.); Teva Pharms. USA, Inc. v. Novartis Pharms. Corp., 482 F.3d 1330, 1344–45 (Fed. Cir. 2007) ("Related litigation involving the same technology and the same parties is relevant in determining whether a justiciable declaratory judgment controversy exists on other related patents.").

[46] Our data on case outcomes includes the outcome of any appeals.

[47] As discussed below, no NPE suits were fully successful. For a general discussion of remedies available in UK patent actions, see CHRISTINE GREENHALGH ET AL., STRATEGIC ADVISORY BD. FOR INTELL. PROP. POLICY, INTELLECTUAL PROPERTY ENFORCEMENT IN SMALLER UK FIRMS: A REPORT FOR THE STRATEGY ADVISORY BOARD FOR INTELLECTUAL PROPERTY POLICY 50–51 (2010), *available at* http://www.ipo.gov.uk/ipresearch-ipenforcement-201010.pdf.

[48] H.M. CTS. & TRIBUNALS SERVICE, CIV. P. R., PART 44.3, *available at* http://www.justice.gov.uk/courts/procedure-rules/civil/rules/part-44-general-rules-about-

II. FINDINGS

In this Part, we report our findings with respect to NPE litigation filed in the U.K. We also compare these findings to corresponding data on U.K. patent litigation between product-producing companies and to data on NPE litigation filed in the U.S.

A. Overall Totals and Percentages

Of the 300 total patent suits included in our database, we find that thirty-three, or eleven percent, involve NPEs. A complete list of NPE suits is included at the end of this Article in Appendix A. Those thirty-three suits involve a total of twenty-eight unique NPEs.[49] A histogram of NPEs arranged by classification is shown below in Figure 1. The figure shows that IP licensing entities—the group of NPEs generally viewed as most "trollish"—are the most common type of NPE in the U.K.[50] Excluding suits filed by individuals, universities, and IP subsidiaries—i.e., all NPEs that are traditionally excluded from the definition of terms like PAE—the percentage of "troll" litigation in the UK falls only slightly to eight percent.

Overall, this is a modest amount of NPE litigation relative to the U.S., where studies have estimated that NPEs were responsible for roughly 25% of U.S. patent suits during the same timeframe.[51]

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costs#rule44.3= (stating that the "general rule is that the unsuccessful party will be ordered to pay the costs of the successful party" with the amount awarded reflecting "the conduct of all the parties; whether a party has succeeded on part of his case, even if he has not been wholly successful; and any payment into court or admissible offer to settle").

[49] Of the 28 total NPEs, three are individuals who sued along with their own IP licensing company, and two are individuals who sued along with a co-inventor. Thus, though our list includes 8 total individuals, there were only three total suits involving just individual inventors suing in their own name(s).

[50] IP Licensing entities are also the most common type of NPE in the U.S. *See* Brian J. Love, *An Empirical Study of Patent Litigation Timing: Could a Patent Term Reduction Decimate Trolls Without Harming Innovators?*, 161 U. PA. L. REV. 1309, 1328 (2013).

[51] *See* Colleen V. Chien, *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents*, 87 N.C. L. REV. 1571, 1604 n.168 (2009) (finding, in a study of 2,300 high-tech patent suits filed between 2000 and 2008, that NPEs filed 10% of all suits initiated between 2000-2001, 16% between 2002-2003, 16% between 2004-2005, and 20% between 2006-2008); Jeruss et al., *The America*

Moreover, we find no evidence that the rate of NPE litigation in the U.K. is on the rise. To the contrary, NPE litigation has remained roughly stable in both absolute[52] and relative[53] terms. This finding contrasts sharply with experience in the U.S., where the rate of NPE litigation appears to have increased significantly during the same time period.[54]

That said, our findings show that NPE litigation is hardly non-existent in the U.K. To the contrary, an 11% rate of NPE litigation roughly corresponds to the level of NPE activity present in the U.S. during 2000-2001,[55] a time when U.S. lawyers and scholars were already highly critical of their litigation practices.[56]

Invents Act 500: Effects of Patent Monetization Entities on US Litigation, 11 DUKE L. & TECH. REV. 357, 365, 377 (2012) (finding, in a study of 100 patent suits filed each year from 2007 to 2011, that the percentage attributable to NPEs was roughly 22% in 2007, 27% in 2008, 33% in 2009, 30% in 2010, and 40% in 2011); Robin Feldman et al., *The AIA 500 Expanded: The Effects of Patent Monetization Entities*, UCLA J.L. & TECH., at *9, *55 (forthcoming 2014) (expanding their prior study to find that NPEs filed roughly 59% of patent suits in 2012).

[52] The number of cases oscillates between three cases in 2000 and four in 2010. *See infra* App. A. Though there is some variation among years, much of the variation results from parties filing multiple, near-simultaneous suits against one another. For example, while there were seven cases filed in 2008, five of these seven were part of the same dispute between Nokia and IPCom. *See id.* Thus, viewed in terms of "disputes" between parties, rather than individual cases, the rate of patent litigation has remained rather constant.

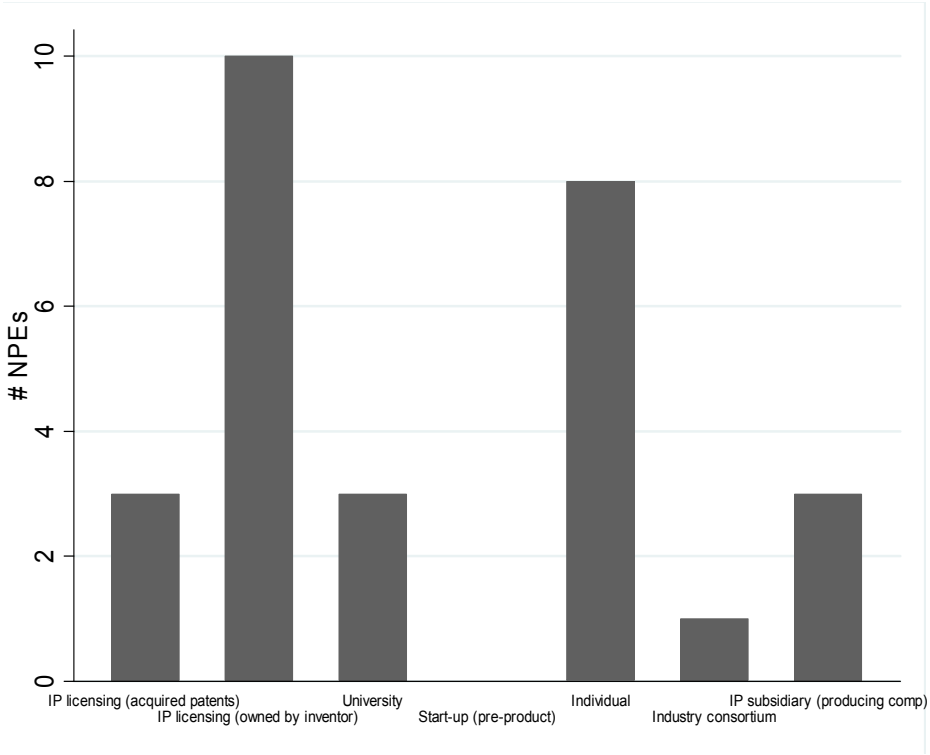
[53] The share of patent suits filed by NPEs was 16% of total cases in 2000 and 17% in 2010. *Compare id. with* n.32 *supra*.

[54] *See supra* note 51.

[55] Chien, *supra* note 51, at 1604 (finding, in a study of 2,300 high-tech patent suits filed between 2000 and 2008, that NPEs filed 10% of all suits initiated between 2000-2001).

[56] *See* Teresa Riordan, *Trying to Cash in on Patents*, N.Y. TIMES, June 10, 2002, at C2; Brenda Sandburg, *Battling the Patent Trolls*, THE RECORDER (July 30, 2001), http://www.law.com/jsp/article.jsp?id=900005522332&slreturn=20131009163157 (noting that, in 1999, patent claims against Intel totaled over $15 billion); Joff Wild, *The Real Inventors of the Term "Patent Troll" Revealed,* INTELL. ASSET MGMT. BLOG (Aug. 22, 2008), http://www.iam-magazine.com/blog (recounting how the term "patent troll" was coined at Intel in 1999 because, among other reasons, the company wanted to develop "a pithy term or phrase" that would help bring public attention to the problem of abusive patent litigation).

Figure 1: NPE Classification Histogram



For the sake of completeness, we also note the presence in our database of three patentees that, though they operated a non-IP-related business during the time of litigation, also filed a large number of suits asserting a portfolio of high-tech patents and, thus, have been labeled a "patent troll" by others in the past. The first, Gemstar, just barely misses our definition of NPE because it still owned and operated TV Guide Magazine and the TV Guide Network when it filed suit against Virgin Media in 2008, alleging infringement of three patents covering various aspects of electronic program guides for TV set top boxes.[57] Gemstar sold its TV Guide businesses just months later but pursued the case until 2011 when the Court of Appeal affirmed the PHC's 2009 decision invalidating

[57] *See* Gemstar-TV Guide Int'l Inc. v. Virgin Media Ltd., [2009] EWHC (Ch) 3068, [1] (Eng.).

all three asserted patents.[58] Now known as Rovi Corp,[59] Gemstar has aggressively asserted its patent portfolio and has been identified as an NPE or PAE by many commentators.[60]

Another serial patent enforcer, Document Security Systems (DSS), also appears in our database, unsuccessfully defending a patent revocation action brought by the European Central Bank.[61] Though DSS maintains a customer base for its products and services, and thus is not an NPE or PAE by our definition, the company has been repeatedly hit with the "troll" label,[62] particularly after merging with NPE Lexington Technology Group and filing suit in the U.S. against the likes of Facebook, LinkedIn, Novell, and Salesforce.com.[63]

A third patentee, Visto Corp, also warrants mentioning. Our database includes two suits between Visto and smartphone maker

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[58] *See* Gemstar-TV Guide Int'l Inc. v. Virgin Media Ltd., [2011] EWCA (Civ) 302, [43] (Eng.).

[59] *See Company Overview of Rovi Guides, Inc.*, BLOOMBERG BUSINESSWEEK (Nov. 9, 2013, 5:10 PM), http://investing.businessweek.com/research/stocks/private/snapshot.asp?privcapId=341789 ("The company was formerly known as Gemstar-TV Guide International, Inc. and changed the name to Rovi Guides, Inc. in May, 2008. The company was founded in 1992 and is based in Santa Clara, California. As of May 2, 2008, Rovi Guides, Inc. operates as a subsidiary of Rovi Corporation.").

[60] *See, e.g.*, Timo Fischer & Jaochim Henkel, *Patent Trolls on Markets for Technology: An Empirical Analysis of Trolls' Patent Acquisitions* 29 (Apr. 28, 2011), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1523102.

[61] *See* European Cent. Bank v. Document Sec. Sys. Inc., [2007] EWHC (Pat) 600, [194] (Eng.); European Cent. Bank v. Document Sec. Sys. Inc., [2008] EWCA Civ 192, [52]. The ECB also filed claims to invalidate the patent in France, Germany, the Netherlands, Austria, Italy, Spain, Luxembourg, and Belgium, in an attempt to completely invalidate the patent in all nine jurisdictions. *See* Press Release, Document Security Systems, Inc., Document Security Systems to Move Forward with Infringement Suit vs. ECB (Dec. 18, 2007), *available at* http://www.thefreelibrary.com/Document+Security+Systems+to+Move+Forward+with+Infringement+Suit+vs-a0172571704.

[62] *See, e.g.*, Maxwell Fisher, *Are Patent Litigations Skewing Earnings Reality?*, MOTLEY FOOL BLOG NETWORK (Nov. 12, 2002), http://beta.fool.com, *available at* http://beta.fool.com/stockcroc1/2012/11/12/are-patent-litigations-skewing-earnings-reality/16210.

[63] *See* Bascom Research, LLC v. Facebook, Inc., No. 3:12-cv-06293 (N.D. Cal); Bascom Research, LLC v. Linkedin Corporation, No. 3:12-cv-06294, 2013 WL 3355736 (N.D. Cal. Jan. 28, 2013); Bascom Research, LLC v. Novell, Inc., No. 3:12-cv-06295 (N.D. Cal.); Bascom Research, LLC v. Salesforce.com, No. 3:13-cv-02891 (N.D. Cal.); Fisher, *supra* note 62.

RIM.[64] Shortly before filing those suits, NTP—an NPE made famous for settling prior U.S. patent claims against RIM for $612 million in 2006[65]—acquired an equity stake in Visto and licensed the company many of its patents.[66] Nonetheless, Visto continued to provide mobile email services during this time and, thus, was not an NPE by our strict definition.[67] Other commentators have come to a contrary conclusion, however.[68] In 2009, Visto acquired

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[64] In 2008, Visto lost a suit against RIM when the PHC held that the patent-in-suit was invalid. *See* Research in Motion UK Ltd. v. Visto Corp., [2008] EWHC (Pat) 335, [187]–[188] (Eng.); Research in Motion UK Ltd. v. Visto Corp., [2008] EWHC (Pat) 819, [1] (Eng.); Research in Motion UK Ltd. v. Visto Corp., [2007] EWHC (Ch) 900, [29] (Eng.); Research in Motion UK Ltd. v. Visto Corp., [2007] EWHC (Pat) 1921, [40] (Eng.). RIM also counterclaimed for patent revocation. *See* Research in Motion UK Ltd v. Visto Corp., [2008] EWHC (Pat) 3025, [2]–[3] (Eng.); Research in Motion UK Ltd v. Visto Corp., [2008] EWHC (Pat) 3026, [12] (Eng.).

[65] *See* Press Release, Research in Motion Ltd., Research in Motion and NTP Sign Definitive Settlement Agreement to End Litigation (Mar. 3, 2006), *available at* http://press.blackberry.com/press/2006/pressrelease-981.html.

[66] *See* Press Release, Visto Corp., Visto and NTP Sign Patent Licensing Agreement (Dec. 14, 2005), *available at* http://www.prnewswire.com/news-releases/visto-and-ntp-sign-patent-licensing-agreement-55539132.html; *NTP Sticks It to RIM*, BLOOMBERG BUSINESSWEEK (Dec. 14, 2005), http://www.businessweek.com/stories/2005-12-14/ntp-sticks-it-to-rim. Visto also brought suit against RIM in the U.S. alleging infringement of four patents related to wireless data transmission. *See* Anne Broache, *Visto Wins Patent Suit, Sues BlackBerry Maker*, CNET NEWS (May 1, 2006), http://news.cnet.com/2100-1039_3-6066898.html?part=rss&tag=6066898&subj=news. That case followed earlier infringement suits against Microsoft, Good Technology, and others—suits that were financed by an investment of $35 million from patent litigation investment firm Altitude Capital Partners. *See* Joe Mullin, *Visto v. Fixmo: Longtime Patent Litigant Kicks off 2012 with a New Suit*, PATENT EXAMINER (Jan. 11, 2012), http://patentexaminer.org/2012/01/visto-longtime-patent-litigant-kicks-off-2012-with-a-new-patent-suit.

[67] *Accord* Victoria E. Luxardo, *Towards a Solution to the Problem of Illegitimate Patent Enforcement Practices in the United States: An Equitable Affirmative Defense of "Fair Use" in Patent*, 20 EMORY INT'L L. REV. 791, 805 (2006) ("NTP's licensing scheme has in turn spawned new second-hand trolling, as exemplified by Visto's suit against Microsoft in December 2005 and RIM in April 2006. Though Visto does not fall under the definition of 'patent troll' because it does in fact practice the art, the chain reaction of litigation sparked by NTP is not optimal for efficient markets and judicial systems.").

[68] *See* Mullin, *supra* note 66 ("Because it formed an alliance with patent-holding company NTP, Visto has been sometimes hit with the moniker 'patent troll,' even though its management has insisted it is a mobile e-mail company, where patent litigation is not the focus."). In a prior working paper, two of us included Visto's suit within a broad category of "patent-assertion entity litigation." Christian Helmers & Luke McDonagh, *Trolls at the High Court?* 10 LAW SOC'Y ECON., Legal Studies Working Paper No. 13 (2012).

Good Technology (of which NTP also owned an equity stake) from Motorola in a deal that settled prior patent litigation between the companies and thereafter adopted the Good Technology name.[69]

These companies epitomize the difficulties inherent in classifying patentees, as well as the lack of uniformity among commentators' rubrics for doing so. Were we to additionally include patent suits involving these companies, the share of PAE litigation would rise to 12.3%. In the remainder of the paper, however, we use the strict definition of NPE introduced above that excludes Gemstar, DSS, and Visto.

B. NPE Patents

Comparing patents asserted in the U.K. by NPEs and product-producing companies, we find that both sets of patents are roughly similar in age at the time of assertion, but that NPE-owned patents are far more likely to cover high-tech subject matter. We also find that, prior to the time of suit, NPE-owned patents were unlikely to be identified as such in U.K. public records. The latter two findings mirror similar results among NPEs litigating in the U.S.

Figure 2 below compares the ages of patents asserted in the U.K. by NPEs and product companies.[70] We find that both groups assert patents of a similar age, about eleven years post-filing on average. U.S. NPEs assert patents on a comparable timeline, while U.S. product-producing companies generally file suit more quickly.[71]

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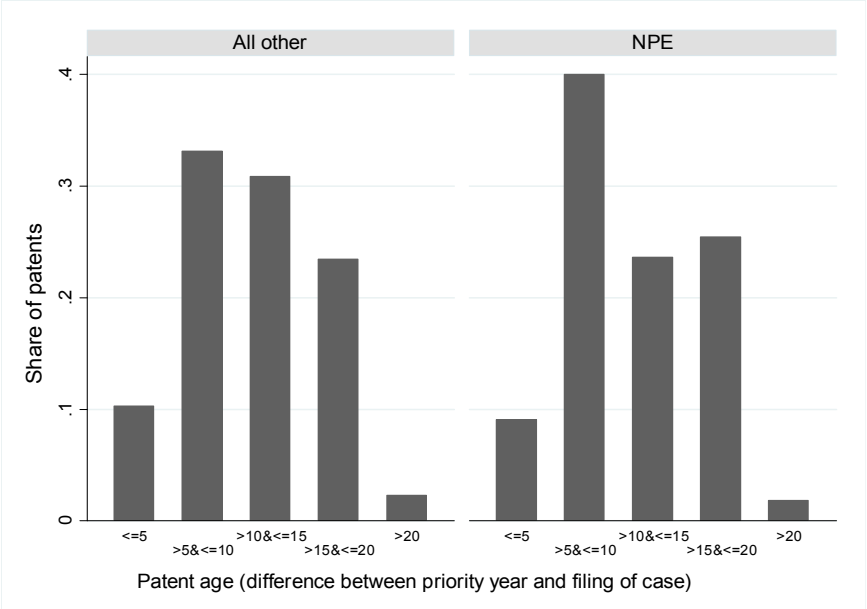
[69] *See* Mullin, *supra* note 66.

[70] Here, by patent "age" we mean the number of years that passed since the patent's priority date and the filing of the law suit in which it was asserted.

[71] *See* Love, *supra* note 50, at 1335 (finding that patents asserted by U.S. NPEs are, on average, asserted about 12 years post-filing, while U.S. product-producing companies assert patents are about 3 years younger on average). The discrepancy between the ages of patents asserted by U.S. and U.K. product-producing companies is likely explained (at least in large part) by the fact that U.K. companies assert a much higher percentage of pharmaceutical patents, which tend to be litigated only when they are relatively old. *See infra* Figure 2 and Table 2; Love, *supra* note 50, at 1351 (noting that pharmaceutical patents are frequently litigated toward the end of the patent term against generic manufacturers seeking a head start in the production of low-cost alternatives to successful name brand drugs).

Figure 2: Comparison of Litigated Patents by Age



Figures 3 and 4 compare the subject matter of patents asserted by NPEs and product companies, and Table 2 compares the industry designations of companies accused of infringing NPE- and product company-owned patents.[72] NPE patents overwhelmingly cover high-tech inventions and are overwhelmingly asserted against high-tech companies, while product-company patents predominately relate to pharmaceuticals. About 70% of U.K. NPE patents were assigned a technology classification directly related to telecommunications or computing, and roughly 76% of companies accused of infringing an NPE patent operate in the high-tech, computer, and telecommunications

[72] Companies' SIC codes were retrieved from various firm-level databases including Compustat, Bureau van Dijk's FAME and AMADEUS, and the ICC British Company Directory. We use the UK Standard Industrial Classification of Economic Activities 2003 published by the U.K. Office for National Statistics. *See* OFFICE FOR NATIONAL STATISTICS, UK STANDARD INDUSTRIAL CLASSIFICATION OF ECONOMIC ACTIVITIES 2003 (2003).

industries.[73] Further, we find that 76% of U.K. NPE patents are "software patents" as defined by Allison and Mann, and that 71% of U.K. NPE suits involve at least one software patent.[74] These findings are consistent with existing studies of U.S. NPEs[75] and tend to suggest that NPEs as a whole strongly favor aging high-tech patents, even in jurisdictions where such patents are considered hard to come by.

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[73] As used below in Table 2, "high-tech" is defined to include the manufacture of electrical and optical equipment (which contains manufacture of office machinery and computers; manufacture of electrical machinery and apparatus not elsewhere classified; manufacture of radio, television and communication equipment and apparatus; and manufacture of medical, precision and optical instruments, watches and clocks). *See id.* at 31–32. The large share of companies sued by NPEs in "other services" is explained by cases HC06C03416 and HC07C03466 where an NPE Cranway Ltd. sued a number of companies in the electronic/video gambling and betting industry which is classified as "other recreational activities (SIC 9271)."

[74] As defined by Allison and Mann, "a software patent is 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." John R. Allison & Ronald A. Mann, *The Disputed Quality of Software Patents*, 85 WASH. U. L. REV. 297, 309 (2007).

[75] James Bessen et al., *The Private and Social Costs of Patent Trolls*, REG., Winter 2011-2012, at 26, 29 (finding that 62% of patents litigated by NPEs between 1990 and 2010 were "software patents" and 75% covered "computer and communications technology"); Love, *supra* note 50, at 1344 Figure 8 (finding that roughly 66% of NPE patent assertions were brought to enforce a software patent and 82% were brought to enforce a high-tech patent).

Figure 3: Tech. Class Comparison of Litigated Patents

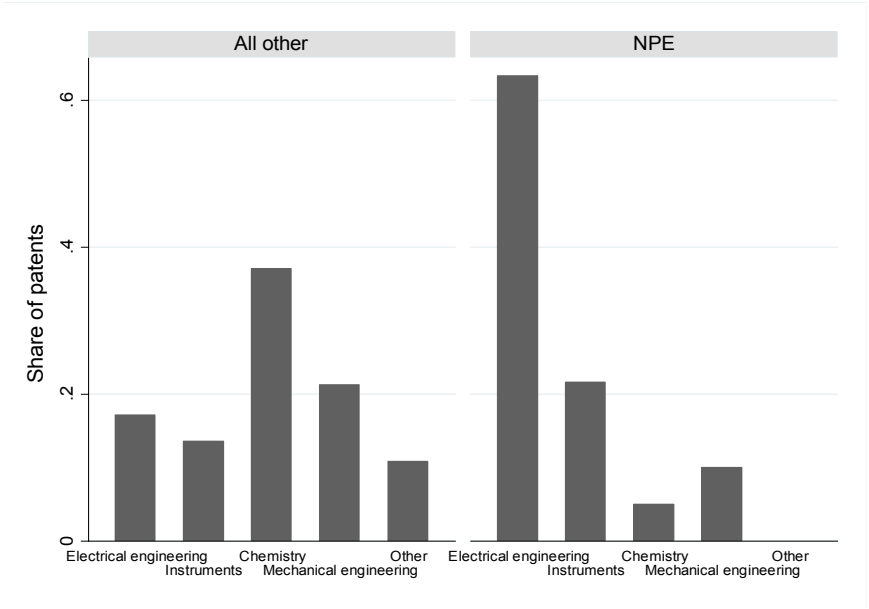

Figure 4: Detailed Tech. Class Distribution of NPE Patents

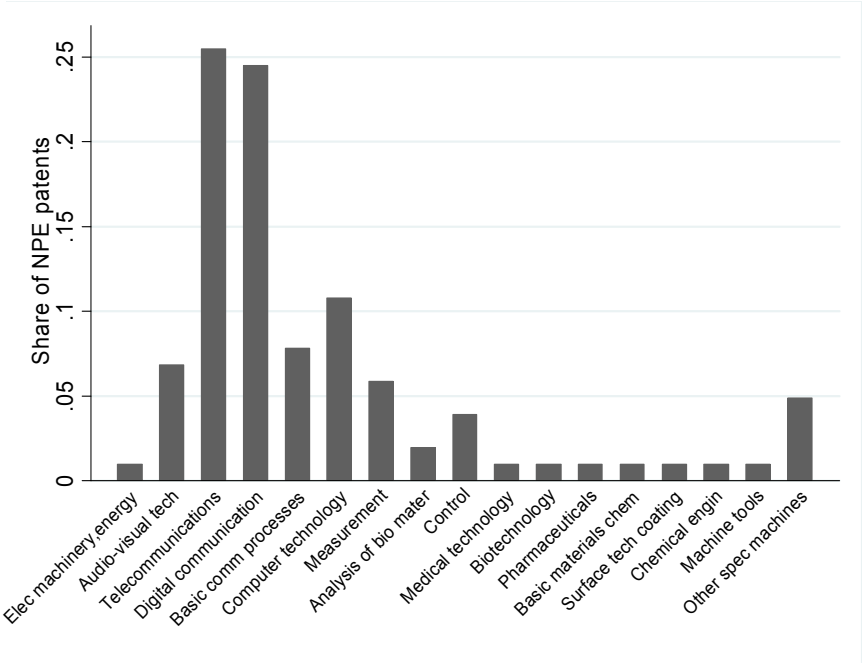

Table 2: Industry Distributions

Sector	*Prod. Co. Cases**		*NPE Cases*[‡]	
	# Firms	%	# Firms	%
Business Services	24	4.5%	1	2.0%
Chemicals/Pharma.	197	37.2%	1	2.0%
Computer Services	18	3.4%	3	6.1%
Construction	4	0.8%		
Finance, Insurance, & Real Estate	4	0.8%		
Food	2	0.4%		
High-tech[§]	82	15.5%	20	40.8%
Metals & Machinery	66	12.5%	8	16.3%
Other Manufacturing	28	5.3%		
R&D Services	12	2.3%	2	4.1%
Textiles & Apparel	7	1.3%		
Trade	42	7.9%		
Transportation	8	1.5%		
Wood & Paper	6	1.1%		
Other Services[¥]	4	0.8%	10	20.4%
Telecommunications	16	3.0%	4	8.2%
Petroleum & Refining	10	1.9%		

Notes: ***** Excludes NPE cases; [‡] Only companies sued by or suing NPEs; [§] High-tech: manufacture of electrical and optical equipment (which contains manufacture of office machinery and computers; manufacture of electrical machinery and apparatus not elsewhere classified; manufacture of radio, television and communication equipment and apparatus; manufacture of medical, precision and optical instruments, watches and clocks); [¥] Other services: including gambling and betting activities as well as other unspecified service activities.

Finally, we also find that companies targeted by NPEs in the U.K. had little reason to suspect *ex ante* that the patents-in-suit were owned by NPEs. For more than half of all NPE-asserted patents in our database, an entity other than the NPE involved in litigation was listed in the European Patent Office's (EPO)

Espacenet online database as the patent's legal owner.[76] We cannot say from this data alone whether these NPEs were actively hiding their patent holdings. However, this finding does match NPE behavior in the U.S.[77] and, accordingly, tends to suggest that NPEs value concealing their activities both in the U.S. and abroad.[78]

C. NPE Litigation

Next, taking a closer look at individual cases, we find that U.K. NPE suits are predominantly revocation actions and rarely end in success for NPEs. As shown below in Table 3, the majority of U.K. NPE cases (61%) were initiated by the accused infringer, rather than the patentee. This rate of revocation/non-infringement claims is high compared to both U.K. product-producing companies and U.S. NPEs. In the U.S., just 14-15% of patent suits are filed by possible infringers, and even that number is inflated by the fact that many are filed after an infringement action for the purposes of forum shopping.[79]

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[76] *Espacenet Patent Search*, EUROPEAN PATENT OFFICE, http://worldwide.espacenet.com (last visited Nov. 10, 2013). A list of these patents is included in Appendix B.

[77] *See, e.g.*, Letter from Ken Wasch, President, Software & Info. Indus. Assoc., to the FTC (Apr. 5, 2013), *available at* http://www.ftc.gov/os/comments/pae/pae-0042.pdf ("Under the present [U.S. patent] system it is too easy for PAE's to hide behind legal fictions . . . . [T]his secrecy makes it very difficult to determine what patents a PAE owns, ... allow[ing] a PAE to increase its market power by acquiring a portfolio containing substitute patents . . . [and] creat[ing] an environment that is ripe for abuse and gamesmanship."). One large U.S.-based NPE, Intellectual Ventures, reportedly holds and enforces its patent portfolio via a network of roughly 2,000 shell companies. *See Method and System for Exposing Multi-Billion Dollar Racketeering Scheme*, PLAINSITE (Dec. 17, 2012), http://www.plainsite.org/articles/article.html?id=2. Legislation presently pending in the U.S. would pressure patentees to disclose patent transfers by limiting patentees' ability to recover damages for infringement that occurred during periods when ownership records were out of date. End Anonymous Patents Act, H.R. 2024, 113th Cong. (May 16, 2013).

[78] *See* Markus Reitzig et al., *Collateral Damage for R&D Manufacturers: How Patent Sharks Operate in Markets for Technology*, 19 INDUSTRIAL & CORP. CHANGE 947, 947 (2010) (noting that patent trolls "exploit information asymmetries in markets for technology").

[79] *See* Chester S. Chuang, *Offensive Venue: The Curious Use of Declaratory Judgment to Forum Shop in Patent Litigation*, 80 GEO. WASH. L. REV. 1065, 1081, 1082 Table 2 (2012) (finding that 13.9% of patent suits filed in 2008 were declaratory judgment actions

Table 3: Comparison of Claim Types

	Prod. Co.		*NPE*	
	# Cases	%	# Cases	%
Infringement	116	43.4%	13	39.4%
Revocation[x]	85	31.8%	17	51.5%
Other**	30	11.2%	3	9.1%
n.a.[‡]	36	13.5%	0	0.0%
Total	267	100.0%	33	100.0%

[x] Includes partial revocation; ** Includes declaration of non-infringement; [‡] Claim unknown.

Moving to case outcomes, shown below in Table 4, we find an unexpectedly large number of invalidity and non-infringement rulings. While 75% or more of U.S. patent suits settle,[80] just 51% (17 out of 33) U.K. NPE cases ended in settlement, and even this number is arguably inflated. Six suits that settled were part of two larger disputes—four were effectively part of the same long-

(335 of 2412) and that 13.4% of declaratory judgment actions were brought by an accused infringer who filed suit after the patentee and moved to transfer venue of the dispute to the court hearing the declaratory judgment action (45 of 335)); *see also* Jeanne C. Fromer, *Patentography*, 85 N.Y.U. L. REV. 1444, 1464 (2010) (finding that 15.5% of utility patent suits filed in 2005, except those filed in the "notoriously patentee-friendly Eastern District of Texas," were declaratory judgment actions); Kimberly A. Moore, *Forum Shopping in Patent Cases: Does Geographic Choice Affect Innovation?*, 79 N.C. L. REV. 889, 921 (2001) (finding that 14% of patent suits that terminated between 1983 and 1999 were declaratory judgment actions).

[80] *See* John R. Allison et al., *Patent Quality and Settlement Among Repeat Patent Litigants*, 99 GEO. L.J. 677, 687–689, (2011) (finding that between 2000 and 2010, patentees that asserted the same patent in eight or more cases settled about 89% of the time, or 1,004/1,134 of all cases in the dataset that were not still pending); Sara Jeruss et al., *The AIA 500 Expanded*, *supra* note 51 (manuscript at 79 Table) (finding that patent suits filed by NPEs in 2007-2008 and 2011-12 settled or ended with a consent judgment about 75% of the time, and only reached a judgment on the merits about 3% of the time); Love, *supra* note 71 at 1346 Table 9 (finding that of litigated U.S. patents issued between May 1993 and May 1994, roughly 80% were never adjudicated on the merits).

running dispute between Nokia and IPCom and two were part of the same dispute between Nokia and Interdigital.[81]

Further, in those cases that proceeded to judgment, U.K. NPEs were surprisingly unsuccessful. Of the twelve NPE cases that ended with a full judgment, infringement was found in just one case, and even that was a partial victory— only one of the four patents asserted in the case was found to be essential to, and thus infringed by, the technological standard at issue.[82] In all other adjudicated NPE suits, the asserted patents were held to be either not-infringed or invalid,[83] giving U.K. NPEs an abysmal eight percent success rate, well below that for U.K. product-producing patentees.[84] That said, these findings are roughly consistent with the performance of U.S. NPEs, which also fail to prove validity and infringement at extremely high rates, both in absolute terms and relative to their product-producing counterparts.[85]

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[81] *See infra* app. A.

[82] *See* Nokia v. Interdigital Tech. Corp., [2007] EWHC (Pat) 3077, [134] (Eng.).

[83] The patent-in-suit in Rambus's suits against Micron and Hynix/Hyundai was first revoked by the EPO, not the PHC. *See* Rambus Inc. v. Hynix Semiconductor UK Ltd, [2004] EWHC (Pat) 2313, [4] (Eng.) ("There were challenges to the patent in the European Patent Office and . . . . [t]he result of that challenge is that the patents were revoked and it is for that reason that Hynix and Micron now seek to have these proceedings dismissed.").

[84] We also find that NPEs are extremely unsuccessful on appeal. In suits between product-producing companies between 2000-2010, judgments were appealed about 45% of the time to the Court of Appeal, and those appeals affirmed the PHC three quarters of the time. NPE suits, by contrast, were appealed just 4 of 12 times, and the PHC decision was affirmed every time in those appeals.

[85] *See* Allison et al., *Patent Quality and Settlement Among Repeat Patent Litigants*, *supra* note 80, at 693 Table 8 (finding that between 2000 and 2010, NPEs that asserted the same patent in eight or more cases lost more than 92% of the time when they litigated to a judgment, while equally-litigious product-producing companies won 40% of time); Love, *supra* note 50, at 1346 Table 9 (finding that, of litigated U.S. patents issued between May 1993 and May 1994, more than 83% owned by NPEs were found not-infringed or invalid, while almost 48% of those owned by product-producing companies were found valid and infringed); Robin Feldman et al., *The AIA 500 Expanded*, *supra* note 51 (manuscript at 87) (finding that, in U.S. patent cases filed in 2007-2008 and 2011-12, product-producing companies won about 44% of the time their patents were adjudicated on the merits, while PMEs and individuals won just 17% and 23% of the time, respectively).

Table 4: Comparison of Case Outcomes

Claim	*Outcome*													
	Infringed		*Valid, not infringed*		*Revoked*[=]		*Settled*		*Other*		*NA*		*Total*	
	Prod. Co.	NPE	Prod. Co.	NPE	Prod. Co.	NPE	Prod. Co.	NPE	Prod. Co.	NPE	Prod. Co.	NPE	Prod. Co.	NPE
Infringement	**16%**	**0%**	**9%**	**15%**	**27%**	**23%**	**35%**	**38%**	**9%**	**23%**	**4%**	**0%**		
	18	0	10	2	31	3	41	5	11	3	5	0	116	13
Revocation[=]	**4%**	**0%**	**20%**	**6%**	**45%**	**24%**	**20%**	**65%**	**11%**	**6%**	**1%**	**0%**		
	3	0	17	1	38	4	17	11	9	1	1	0	85	17
Other**	**3%**	**33%**	**7%**	**33%**	**0%**	**0%**	**33%**	**33%**	**53%**	**0%**	**3%**	**0%**		
	1	1	2	1	0	0	10	1	16	0	1	0	30	3
NA	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**92%**	**0%**	**3%**	**0%**	**6%**	**0%**		
	0	0	0	0	0	0	33	0	1	0	2	0	36	0
	22	1	29	4	69	7	101	17	37	4	9	0	267	33

[=] Includes partial revocation

** Includes declaration of non-infringement

Finally, we report information on fee-shifting awards in U.K. NPE suits. Unfortunately, due to the widespread practice of parties settling fee amounts outside of court,[86] we find publicly available information for just two NPE disputes—and even that information is incomplete. After losing its consolidated suits against Micron and Hyundai, Rambus was ordered to pay its adversaries' fees in 2004.[87] Micron estimated its costs at £698,000 ($1,151,000), and Hyundai estimated its costs at £233,000 ($384,000);[88] however, the parties subsequently settled the issue before the court could make a final ruling on the fee award. Similarly, in January 2010, the PHC ruled in an on-going case between IPCom and Nokia that Nokia had prevailed on enough issues to qualify for a future fee award in the case.[89] At the time, Nokia estimated that its fees in the case were £1.3 million ($2.1 million).[90] In a subsequent hearing, the court estimated Nokia's fees for all cases between the two parties at "close to £3 million" ($4.9 million) and ordered IPCom to pay a two-thirds share.[91]

Overall, the outcome between Nokia and IPCom is a very common one. Across all patent litigation, the "winning" party recovers on average about two-thirds of its requested legal fees,

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[86] *See* Chris Forsyth & Justin Watts, *A Guide to Patent Litigation in England and Wales*, FRESHFIELDS BRUCKHAUS DERINGER LLP 8 (Sept. 2011), http://www.lexology.com/library/detail.aspx?g=6bd0f5bc-df2c-4578-8102-02c6d3c9946f (noting that courts may assess fee awards if "the parties are unable to agree the costs to be paid by the losing party" and that the "assessment procedure may take several months and involves a 'mini-trial'" for which the losing party may also pay).

[87] *See* Rambus, Inc. v. Hynix Semiconductor UK Ltd., [2004] EWHC (Pat) 2313, [47] (Eng.) (ordering "that the claimant shall pay the costs of these actions to the defendants to be assessed, if not agreed").

[88] *Id.* at [6].

[89] Nokia GMBH v. IPCom GMBH, [2010] EWHC (Pat) 790, [12] (Eng.).

[90] *Id.* at [3]. At the same hearing, IPCom's costs were estimated to be £300,000. *Id.*

[91] Nokia GMBH v. IPCom GMBH, [2010] EWHC (Pat) 791, [1] (Eng.). We also observed two fee awards in cases involving companies that almost meet our NPE/PAE criteria. In *Gemstar v. Virgin Media*, Virgin Media won a fee award of 86.5% of the £2.4 million it estimated it has spent on the case (that is, roughly £2 million ($3.3 million)). Gemstar-TV Guide Int'l v. Virgin Media Ltd., [2009] EWHC (Pat) 3552, [4], [35] (Eng.). In *RIM v. Visto*, due to the fact that various issues in the case went both ways, Visto was ordered to 66% of RIM's estimated £6 million ($9.9 million) of costs and RIM was ordered to pay 51% of Visto's estimated £1.6 million ($2.6 million) of costs. Research in Motion U.K. Ltd. v. Visto Corp., [2008] EWHC (Pat) 819, [15], [50] (Eng.). The net result was a fee award in RIM's favor of over £3.1 million ($5.1 million).

depending on how various aspects of the case were won or lost.[92] Further, our prior research suggests that the cost of defending a case to judgment at the PHC runs between £500,000 ($825,000) and £3 million ($4.9 million).[93] Thus, though we lack the data to say so with much additional certainty, we think it is fair to estimate that in the remaining NPE cases that reached judgment, the parties reached a settlement in which the losing patentee agreed to pay the winning accused infringer no less than about £250,000 ($410,000). By contrast, in the U.S., where courts award attorney's fees only in "exceptional" cases,[94] patentees who fail to prove their claims only

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[92] *See* Richard Willoughby, *United Kingdom*, *in* GLOBAL PATENT LITIGATION: STRATEGY AND PRACTICE 32 (Willem A. Hoyng & Frank W.E. Eijsvogels eds., 2008) ("[I]t is usual for the winning party to recover from the loser approximately 60% or 65% of the actual costs incurred by the winning party."); *see also* FORSYTH & WATTS, *supra* note 86, at 8 ("A successful party will recover a proportion of its legal costs from the losing party. This usually works out at about half to two-thirds of its total legal costs.").

[93] *See* Helmers & McDonagh, *supra* note 31 (manuscript at 22); *see also* FORSYTH & WATTS, *supra* note 86, at 8 ("When cases go to trial in the English system, each side will usually incur total costs in the region of €1.5m. Costs in small cases can be much lower. Costs under €0.75m are low and costs will go over €3m only in very large and complex cases."); Michael Burdon, *The UK: Can a High-Cost Country Change Its Way?*, WIPO MAG. (Feb. 2010), *available at* http://www.wipo.int/wipo_magazine/en/2010/01/article_0003.html ("[T]he cost of legal representation and experts in most patent disputes conducted in the U.K. is unlikely to be estimated at less than £350,000."); Garreth Duncan, *Challenging Competitors' Patents in the UK—Patent Revocation*, D YOUNG & CO (Mar. 17, 2010), http://www.dyoung.com/article-patentrevocation ("Typically, infringement/revocation actions in the Patents Court . . . cost in the region of £200,000 to £500,000 for straight-forward cases but can cost up to and more than £1,000,000 for complex cases.").

[94] 35 U.S.C. § 285 (2012) ("The court in exceptional cases may award reasonable attorney fees to the prevailing party."). This term the Supreme Court of the United States granted cert in a pair of cases that challenge the current standard for determining whether a patent case is "exceptional." See Icon Health & Fitness, Inc. v. Octane Fitness, LLC, 496 F. App'x 57 (Fed. Cir. 2012), *cert. granted*, 81 U.S.L.W. 3567 (U.S. Oct. 1, 2013) (No. 12-1184); Highmark, Inc. v. Allcare Health Mgmt. Sys., Inc., 687 F.3d 1300 (Fed. Cir. 2012), *cert. granted*, 81 U.S.L.W. 3562 (U.S. Oct. 1, 2013) (No. 12-1163). As of this Article's publication, the Court had not released an opinion in either case. Fees are, on occasion, also awarded in patent suits under other statutes and rules. *See, e.g.*, Ajeet Pai, *Attorneys' Fee Awards in Patent Litigation*, VINSON & ELKINS, LLP (Aug. 9, 2010), http://www.velaw.com/uploadedFiles/VEsite/Resources/AjeetPaiAttorneysFeeAwardsPatentLitigationCLE_Aug2010.pdf (listing as additional bases for recovering attorney fees F.R.C.P. Rule 37, 28 U.S.C. § 1927, F.R.A.P. 38, and courts' inherent powers).

wind up paying their opponents' attorney's fees about two percent of the time.[95]

III. ANALYSIS

Finally, we make a few broad observations in light of the data reported above. Though we caution against drawing strong inferences from such a small number of cases, we believe our findings suggest that routinely awarding attorney's fees in patent suits will reduce the number of NPE suits filed in the U.S. and that the Unified Patent Court should, like most of its member states, incorporate a generally-applicable fee-shifting mechanism to deter NPE litigation.

Our conclusion is based on several similarities between patent litigation in the U.S. and the U.K. as well as several of our findings. First, many alternative explanations for the relative paucity of NPE litigation in Europe seem especially weak when applied to the U.K. Among European nations, the U.K. is almost certainly the most similar to the U.S. Culturally, the U.K. and U.S. share a common language, a common history, and as a result a traditional (and unique among European nations) body of common law.[96] More specifically, in the realm of patent litigation, the U.K.

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[95] *See* Colleen V. Chien, *Reforming Software Patents*, 50 HOUS. L. REV. 323, 377 (2012) (reporting that between 2005 and 2011, fees were awarded in just 56 of the approximately 3,000 total patent suits in which there was a ruling on the merits). Though similar data has not been collected for U.S. patent cases, in U.S. copyright suits in which attorney's fees were awarded, prevailing copyright holders have received 89% of their fee award requests, and prevailing defendants 61%. *Id.* at 374–75; *see also* Saurabh Vishnubhakat, *What Patent Attorney Fee Awards Really Look Like*, 63 DUKE L.J. ONLINE (forthcoming 2014) (collecting data on attorneys fee award orders issued in patent cases between 2003 and 2013).

[96] *See, e.g.*, Vipin Gupta et al., *Cultural Clusters: Methodology and Findings*, 37 J. WORLD BUS. 11, 13 (2002), *available at* http://wase.urz.uni-magdeburg.de/evans/Journal%20Library/International%20Management%20Models/Cultural%20Clusters.pdf (discussing broad cultural similarity between the U.S. and U.K and finding in a survey of people from 61 nations that there are 10 "cultural clusters" in the world and that the U.K. shares more in common with the U.S., Canada, Australia, and New Zealand than it does with other European nations); FORSYTH & WATTS, *supra* note 86, at 1 (discussing similarities in legal and business culture that make comparisons between the countries particularly apt) ("The English legal system is . . . a common law system and the procedures and practices of English courts differ significantly from those of courts in

has among the largest damages awards,[97] highest costs of defense,[98] and the most onerous discovery requirements in Europe.[99] The U.K. and U.S. also share a great deal in common with respect to substantive Patent law.[100] Accordingly, possible

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other European jurisdiction."); *see also* Christopher M. Bruner, *Power and Purpose in the "Anglo-American" Corporation*, 50 VA. J. INT'L L. 579, 581 (2010) ("In their corporate governance systems, financial structures, and business cultures more generally, the United States and the United Kingdom arguably have more in common than any other pair of developed economies." (internal quotation marks omitted)); James E. Gregory & Jennifer Wheater, *US/UK Tax Issues for Internationally Mobile Executives*, 13 BUS. L. INT'L 279, 279 (2012) ("Because of their common language, culture and financial prominence, the links between the United States and the United Kingdom are especially well-developed and, as a result, there is a constant flow of high-level managerial and executive talent between these two countries."); Lisa Vanhala, *Legal Opportunity Structures and the Paradox of Legal Mobilization by the Environmental Movement in the UK*, 46 LAW & SOC'Y REV. 523, 547 (2012) ("As the only country with a common law legal system in the European environment, the UK can serve as the closest comparator for developments in the U.S.").

[97] *See* Zeebroeck & Graham, *supra* note 4, at 24; *cf.* COTTER, *supra* note 5, at 226 ("[T]he amount of damages awarded [by U.K. courts in patent cases] appears . . . to be relatively modest compared to U.S. standards . . . . Nevertheless, the rules [U.K.] courts apply in calculating monetary awards are hardly stacked against patent owners . . . . [and] tend to favor patent owners to a greater degree than economic reasoning would suggest desirable.").

[98] *See* COTTER, *supra* note 5, at 173 ("The cost of proceeding to trial [in the U.K.] remains high by European . . . standards . . . ."); RUPERT JACKSON, L.J., REVIEW OF CIVIL LITIGATION COSTS: FINAL REPORT 250 (2009), *available at* http://www.ciarb.org/information-and-resources/2010/01/22/Review%20of%20Civil%20Litigation%20Costs%20Final%20Report.pdf ("[R]eviewing costs across different EU states . . . '[t]he UK system is the most costly one . . . .'" (quoting Dietmar Harhoff)); Kimberlee Weatherall, et al., *IP Enforcement in the UK and Beyond: A Literature Review*, STRATEGIC ADVISORY BD. FOR INTELL. PROP. POL'Y 43–44 (May 18, 2009), *available at* http://www.ipo.gov.uk/ipresearch-ipenforcement-200905.pdf (comparing UK patent litigation costs to those in France, Germany, and the Netherlands).

[99] *See* David Perkins & Garry Mills, *Patent Infringement and Forum Shopping in the European Union*, 20 FORDHAM INT'L L.J. 549, 564 (1996) ("The English system, unlike those of its continental European counterparts, involves documentary discovery . . . ."); Karin Retzer & Sherman Kahn, *Balancing Discovery with EU Data Protection in International Arbitration Proceedings*, 3 N.Y. DISP. RESOL. L. 47 (2010) ("[C]ivil law jurisdictions (such as those in continental Europe) generally limit disclosure of evidence to what is proffered by each party as evidence in support of the party's case. In contrast, pre-trial discovery obligations in common law countries, particularly in the United States, but also in the UK, are much broader.").

[100] *See* COTTER, *supra* note 5, at 165 (noting "affinities among the U.K., Canadian, and Australian [patent] regimes . . . , as well as with the U.S. [patent] system"); Donna M. Gitter, *Should the United States Designate Specialist Patent Trial Judges? An Empirical*

explanations for Europe's ability to repel trolls that center on broad differences in culture, law, and litigation practice appear to apply with less force in the U.K.[101]

Further, we find in our data that, despite more restrictions on the patentability of software,[102] U.K. NPEs overwhelmingly assert software patents covering telecommunications and computer technology.[103] In short, it does not appear that the U.K. has a shortage of high-tech patents available for NPEs—as some have postulated[104]—but rather a shortage of companies willing to assert patents, period, regardless of the type of invention they cover. We also find that U.K. NPEs can and do obscure patent ownership before filing suit,[105] and thus have at least one more tactical advantage (in addition to high costs and large damages awards) in common with their U.S. counterparts.[106] Combining these facts

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Analysis of H.R. 628 in Light of the English Experience and the Work of Professor Moore, 10 COLUM. SCI. & TECH. L. REV. 169, 183–85 (2009) (noting a similar origin for U.S. and U.K. patent law, as well as similarities in "the basic requirements of patentability—novelty, utility, and nonobviousness" and claim construction doctrines and procedure).

[101] To be clear, there are other specific differences between the litigation and patent systems in effect in both countries—for example, the widespread use of juries in the U.S. to determine infringement and damages, *see* Philippe Signore, *On the Role of Juries in Patent Litigation (Part 1)*, 83 J. PAT. & TRADEMARK OFF. SOC'Y 791, 794 (2001) ("The U.S. may be the only country in the world that uses juries to decide patent disputes . . . . English juries are not available in patent cases, or in most other civil cases."), and a higher standard for invalidating U.S. patents, *see Patent Law and Regulation*, LEXISNEXIS (UK), http://lexisweb.co.uk/sub-topics/patent-law-and-regulation (last visited Nov 10, 2013) ("There is no presumption of validity for UK patents once they are granted."). However, as discussed below, these differences are arguably irrelevant given NPEs' similar rate of success in both countries. *See supra* note 85 and accompanying text (discussing NPEs' win rate in patent suits filed in the U.S. and in patent suits filed in the U.K.).

[102] *See supra* note 2.

[103] *See supra* notes 72–75 and accompanying text.

[104] *See supra* note 2.

[105] *See supra* note 76 and accompanying text.

[106] Another arguable advantage they share is access to specialized patent courts. *See* Timothy B. Lee, *Specialist Patent Courts Are Part of the Problem*, FORBES TECH BLOG (Aug. 19, 2011), http://www.forbes.com/sites/timothylee/2011/08/19/specialist-patent-courts-are-part-of-the-problem (arguing that specialized patent courts—including the U.S. Court of Appeals for the Federal Circuit as well as de facto specialized trial courts like the Eastern District of Texas that see a large number of patent suits—tend to skew in favor of stronger patent rights because they become captured by the patent attorney bar).

and findings, it would appear that U.K. and U.S. NPEs operate in a roughly similar cultural and legal environment and share many of the same tactical advantages in litigation.

So what, then, accounts for the marked difference in NPE activity between the U.K. and U.S.? At first blush, the low rate of success for U.K. NPE suits may seem like a plausible explanation. However, U.S. NPEs as a whole are not much more successful than those in the U.K.[107] In fact, sophisticated NPEs actually lose slightly *more* often in the U.S.[108] A review of U.S. NPE suits related to those in our U.K. database, included below in Appendix C, provides further confirmation.[109] Fourteen U.K. NPE suits in our database proceeded in parallel to a U.S. action between the same two parties.[110] In all four parallel U.S. actions that have been adjudicated to date, the NPE lost on summary judgment.[111] In fact, among all 138 suits that NPEs in our database filed in the U.S. during the same timeframe, not a single case has been resolved on the merits in an NPE's favor.[112]

In our view, the most likely explanation for differing rates of NPE litigation is not the low rate of success we observe, but rather that lack of success *in a system that routinely awards fees* to the winning party. Unlike those litigating in the U.S., NPEs deciding whether to file suit in 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 an amount approximating two-thirds of the cost of defense. As discussed above, it is unlikely that an unsuccessful NPE could walk away from a case paying less than about £250,000, the equivalent of about $375,000.

Two other observations in our data also tend to support this conclusion. First, we find very few repeat litigants among U.K. NPEs. Virtually every NPE case in our database ended in defeat for the NPE, followed by a hefty payout of fees, and no further

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107 *See supra* notes 84–85.
108 *Id*.
109 *Infra* app. C.
110 *Infra* app. C.
111 *Infra* app. C.
112 *Infra* app. C.

attempts at litigation. By contrast, many of these NPEs filed a large number of suits in the U.S. over a long period of time, despite a similarly abysmal record of success.[113] One explanation for this pattern is that a series of NPEs tested the waters in the U.K., found the experience too expensive, and thereafter chose to direct their resources elsewhere.

Second, as discussed above, we find a surprisingly low rate of settlement in U.K. NPE cases and a surprisingly high percentage of revocation and non-infringement claims. In short, despite an average cost of defense that rivals those in the U.S., tech companies accused of infringement in 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 138 patent suits filed in the U.S. by NPEs in our database, 125 (or roughly 90%) settled.[114] 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.[115] Taken together, these two observations 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 to deny patentees a quick, positive settlement and to impose a large, negative penalty); and,

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[113] *Infra* app. C. (showing that 14 of the 28 NPEs that litigated in the U.K. also filed suit in the U.S. and that, in the U.S., they brought a total of 138 suits against a total of 293 accused infringers).

[114] *Infra* app. C.

[115] 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. *See* A. Mitchell Polinsky & Daniel L. Rubinfeld, *Does the English Rule Discourage Low-Probability-of-Prevailing Plaintiffs?*, 27 J. LEGAL STUD. 141, 141, 143 (1998) ("[T]he English rule of fee allocation (in which the loser pays the winner's litigation costs) is better at discouraging suits by low-probability-of-prevailing plaintiffs than the American rule" but "the English rule causes a greater number of cases to go to trial."). For empirical evidence of these effects, see Deborah L. Rhode, *Frivolous Litigation and Civil Justice Reform: Miscasting the Problem, Recasting the Solution*, 54 DUKE L.J. 447, 475 (2004) (noting that Florida's experience with fee-shifting in medical malpractice cases brought in the early 1980s was that "the threat of additional legal fees did somewhat reduce the number of malpractice cases filed, [but] also increased the number that went to trial").

as a result, patentees become less likely to file suit in the first place.

CONCLUSION

Comparisons of the European and American experiences with NPEs have so far been long on anecdote and short on data. However, with the U.S. presently searching for mechanisms to curb NPE patent enforcement and the E.U. presently considering adopting measures that many expect to do the opposite, hard data is needed now more than ever. With this Article, we take a first step in building an empirical foundation upon which to study patent troll activities on both sides of the Atlantic, and we hope that other scholars will follow suit.

Though patent trolls are indeed rare in the U.K. when compared to the U.S., we find that they nonetheless account for a substantial and consistent share of U.K. litigation between 2000 and 2010. They are, in short, hardly a uniquely American phenomenon, as some policymakers have suggested. Moreover, we find evidence that fee-shifting, more so than other possible explanations, is responsible for the relatively low rate of NPE litigation in the U.K. compared to the U.S.[116] Though we caution against basing international patent policy on the experience of any one country, our results lend support to patent reform measures currently pending in the U.S. that would increase the frequency with which fees are shifted in patent suits. Our findings also suggest that Europe's new Unified Patent Court may not have as much of an impact on NPE litigation in Europe as some contend, so long as it too routinely awards fees to the winning party.

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[116] This finding was discussed during a recent question and answer session in the UK House of Commons concerning the impact of 'patent trolls' on the UK economy. Reference was made in this debate to Helmers & McDonagh, *supra* note 65. This discussion was reported in the UK Parliamentary record (Hansard) on March 20, 2014, http://www.publications.parliament.uk/pa/cm201314/cmhansrd/cm140320/text/140320w0002.htm#14032098000031.

Appendix A
U.K. NPE Cases (2000-2010)

Year[1]	Case No.	NPE Class	Claimant(s)	Defendant(s)	Claim	Outcome
2000	HC00C4176 & HC00C4177	2	***Rambus, Inc.***	Hyundai Elec. U.K. Ltd. Micron Europe Ltd.	Infringement	Stayed*, Dismissed
	HC00C03655	2	***NewTransducers Ltd.***	Labtec Enterprise UK Ltd	Infringement	Settled
	HC00C5233	5 5	***Steven Tickner*** ***Timothy Woodhous***	Honda Motor Europe Ltd Honda Europe N' Honda Motor Company Ltd	Infringement	Valid, Not infringed
2001	HC01C04669	2 5	***Menashe Business Mercantile Ltd.*** ***Julian Menashe***	William Hill Org Ltd.	Infringement	Settled
	HC01CO4779	2	***Frontline Tech. Ltd.***	Tasc Computers	Infringement	Settled
2002	HC02C02968	2	***Laughlin Prods., Inc.***	Hollywood Tanning Sys., Inc	Infringement	Settled
2003	HC03C00915	2	***Ablaise Ltd.***	Nettec PLC Nettec Sol'ns Ltd.	Infringement	Other
	HC03C01066	2	Dep. for Educ. & Skills	***Frontline Tech. Ltd.***	Revocation	Revoked
	HC03C02460	5 5	Cintec International Ltd	***John Parkes*** ***Martin Frost***	Groundless Threats of Infringement	Not infringed
	HC03C02951 & HC03C02952	3	Affymetrix UK Ltd Affymetrix Inc	***Multilyte Ltd***	Revocation	Settled
2004	HC04C01952	2	Nokia Corp.	***Interdigital Tech Corp.***	Revocation	Settled
2005	HC05C00661	5	***Jerome Canady***	Olympus Corp. Keymed Ltd. Erbe Med. UK Ltd. Erbe Elektromedizin gmbh	Infringement	Not infringed
	HC05C01175	1	T-Mobile U.K. Ltd. Research in Motion U.K.	***.Inpro Licensing Sarl***	Revocation	Revoked

	HC05C02026	2	Nokia Corp.	***Interdigital Tech. Corp.***	Non-infringement/ Standard Essentiality	3 out of 4 patents Not Infringed
2006	HC06C00615 & HC06C00835	6	Sandisk	Koninklijke Philips ***Societa Italiana per lo Sviluppo dell'Elettronica spa (SISVEL)*** Institut für Rundfunktechnik GmbH TDF France Telecom SA	Revocation	Settled[x]
	HC06C00823	3	***Univ. of Queensland***	Siemens PLC Siemens Magnet Tech.. Ltd.	Infringement	Revoked
	HC06C03416	1	***Cranway Ltd.***	Horserace Totalisator Bd. Playtech Ltd.	Infringement	Other
	HC06C04422	2	***Interdigital Tech. Corp***	Nokia Nokia Siemens Networks oy	Non-infringement/ Standard Essentiality	Settled
2007	HC07C03177	7	Assa Abloy AB Aontec Teoranta	***Smartrac IP BV***	Revocation	Settled
	HC07C03466	1	***CranwayLtd***	Totesport Alderney Ltd. Totesport NV PTVB Mgmnt. Ltd. Playtech Ltd. Playtech Cyprus Ltd. Techplay Marketing Ltd. Playtech Softwar Ltd. Tote Credit Ltd.	Infringement	Revoked
2008	HC08C00468	2	HTC Corp.	***Dataquill Ltd.***	Revocation	Settled
	HC08C02525	1	Nokia Nokia Germany Gmbh Nokia UK Ltd.	***IPcom Gmbh***	Revocation	Revoked
	HC08C02526	1	Nokia Germany Gmbh	***IPcom Gmbh***	Revocation	Settled

	HC08C02527	1	Nokia Germany Gmbh	***IPcom Gmbh***	Revocation	Settled
	HC08C02528	1	Nokia Germany Gmbh	***IPcom Gmbh***	Revocation	Settled
	HC08C02530	1	Nokia Germany Gmbh	***IPcom Gmbh***	Revocation	Settled
	HC08C04704	7	***Tip Comm'ns LLC***	Motorola Ltd.	Infringement	Settled
2009	HC09C00090	2	HTC Corp.	***Yozmot 33 Ltd***	Revocation	Revoked
	HC09C04868	1	Nokia Germany Gmbh	***IPcom Gmbh***	Revocation	Revoked
2010	HC10C01233	1	Nokia	***IPcom Gmbh***	Revocation	Supreme Court Appeal Adjourned Pending EPO Ruling
	HC10C01969	5 5 2	Environmental Recycling Tech. PLC	***Alfred Rodlsberger*** ***Nicholas Stillwell*** ***Upcycle Holding Ltd***	Revocation	Settled
	HC10C02090	7	***Sandvik Intell. Prop. AB***	Kennametal, Inc. Kennametal Europe Gmbh Kennametal UK Ltd.	Infringement	Revoked
	HC10C04270	3	Shire Pharma. Contracts Ltd.	***Mount Sinai Sch. of Med. of N.Y. Univ.***	Revocation	Settled

Notes:
NPEs marked in bold
[n]Year refers to the year in which the lawsuit was initiated (filing of claim form)
***** Pending EPO opposition (eventually revoked by EPO)
[x] Sandisk took a license from SISVEL
NPE types: 1 IP Licensing Company, Acquired Patents; 2 IP Licensing Company, Owned by Inventor; 3 University o Spin-off; 4 Start-up, Suing Pre-Product; 5 Individual; 6 Industry Consortium; 7 IP Subsidiary of a Product-Producing Company.

Appendix B

All patents of NPE cases

#	*Case reference*	*Patent number*						
1	HC00C4176/HC00C4177	EP0525068						
2	HC00C03655	EP0847659	GB2350008					
3	HC00C5233	GB2303004						
4	HC01C04669	EP0625760						
5	HC01CO4779	EP0664061						
6	HC02C02968	na						
7	HC03C00915	GB2275121						
8	HC03C01066	EP0664061						
9	HC03C02460	GB2289750	GB2335259	GB2337805	GB2314614			
10	HC03C02951&HC03C02952	EP0134215	EP0304202					
11	HC04C01952	GB2174571	GB2208774	GB2224114				
12	HC05C00661	EP0595967						
13	HC05C01175	EP0892947						
14	HC05C02026	EP0515610	EP0855807	EP1062749	EP1210777			
15	HC06C00615/HC06C00835*	EP0402973	EP0599824	EP0599825	EP0660540	EP0400755	EP0708533	EP0751520
16	HC06C00823	GB2308451						

17	HC06C03416	EP0625760					
18	HC06C04422	***EP0717914***					
19	HC07C03177	na					
20	HC07C03466	EP0625760					
21	HC08C00468	na					
22	HC08C02525	EP0540808	EP1186189	EP1273147			
23	HC08C02526	EP1214813	EP1287716	EP1252779			
24	HC08C02527	EP1083758	EP1273147	EP1121760			
25	HC08C02528	EP1238474	EP1240758	EP0880836			
26	HC08C02530	EP0581929	EP0962084	EP1083763	EP1316199		
27	HC08C04704	EP0742989					
28	HC09C00090	EP0909499					
29	HC09C04868	EP1018849					
30	HC10C01233	EP1841268					
31	HC10C01969	GB2460838					
32	HC10C02090	EP0603144					
33	HC10C04270	EP1942189					

Notes:
Shaded gray patents have different assignee name than NPE name in EPO's Espacenet online database
Patent (EP0717914) marked in bold owned by Nokia
* Patents assigned to Philipps.

Appendix C:
NPEs Litigating in the U.S. and U.K.

NPE	# U.S. Cases	# U.S. Ds	U.S. Case Outcomes (W-L-Settled-Ongoing)	Filing Date of Parallel Case(s)	Outcome of Parallel U.S. Case(s)
Ablaise Ltd.	11	14	0-1-10-0		
Dataquill Ltd.	6	8	0-2-4-0	3/25/2008	Partial SJ of Non-Infringement, Settled
Interdigital Tech. Corp.	2	6	0-0-0-2	1/12/2005 (Nokia); 8/7/2007 (Nokia)	Stayed; Stayed
Ipcom Gmbh	2	4	0-0-1-1	11/3/2008	Stayed
John Parkes	1	1	0-1-0-0	11/19/2003	Default Judgment
Laughlin Prod., Inc.	96	210	0-0-96-0	6/25/2002	Settled
Multilyte, Ltd.	1	1	0-1-0-0	8/13/2003	SJ Non-infringement
Rambus, Inc.	12	40	0-1-9-2	8/28/2000 (Micron); 8/29/2000 (Hynix)	Appeal; Appeal

Steven Tickner & Timothy Woodhouse	1	1	0-1-0-0	11/24/2000	SJ Non-Infringement & Invalidity
Tip Comm'ns LLC	1	1	0-0-1-0	3/9/2009	Settled
Yozmot 33 Ltd.	1	3	0-0-1-0	1/21/2009	Settled
Sandvik Intell. Prop.	1	1	0-1-0-0	4/27/2009	Partial SJ Invalidity, Settled
Total:	138	293	0-8-125-5		0-5-3-5 (W-L-Settled-Ongoing)