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Can Patent Trolls be Stopped Without Interfering with an Individual's Property Rights?

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Abstract

This thesis seeks to analyze patent trolls and how they are able to prey on successful patented innovations to monopolize on profits, all while doing it legally. This research aims to answer the question if patent trolls can be stopped without infringing on an individual's property rights. This study analyzes various legislation enacted to limit the actions of patent trolls, and if they are sufficient in their totality to prevent the trolls from making a profit off a patent(s), they have no intention of utilizing or have never used. The data will be analyzed to show if the enacted reform has impacted preventing patent trolls from flooding the patent litigation system and interfering with innovation. Additionally, the study will analyze if prospective legal reform would impact the hindrance of the actions of patent trolls. Patent trolls will continue to exist as they cannot be stopped without sacrificing an individual's property rights.

Keywords: Patent trolls, non-practicing entities, individual's property rights, reform

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Can Patent Trolls be Stopped Without Interfering with an Individual's Property Rights?

By:

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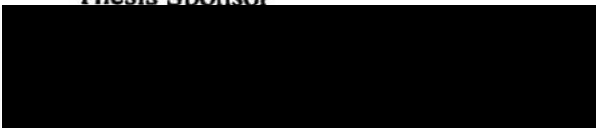
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Table of Contents

Introduction	5
Evaluation	
The Use of the term “Patent Trolls”	6
What Can be Protected by a Patent?...../.....	8
The Right to Property and The Importance of Patents.....	9
The Right to Ownership Should Not Come at a Cost.....	12
Why is it so Difficult to Stop Patent Trolls?	17
Changes Since Reform.....	27
The Profit of Patents.....	29
Alternative Dispute Resolution.....	31
Proposals for Reducing Patent Trolling.....	33
Effective Reform – How Europe Handles U.S. Patent Trolls.....	37
Conclusion	38
Bibliography.....	40

I. Introduction

Patents ensure that citizens enjoy property rights, allowing idea owners to maintain their commercialization rights and block similar inventions for a particular time. As innovation continues to prosper, it is challenging to prevent patent trolls from reaping the financial benefits of innovation without infringing on an individual's property rights. A patent for invention is the grant of a property right to the inventor, issued by the United States patent and Trademark Office. The Patent and Trademark Office does not easily grant patents to anyone. The Patent and Trademark Office only grants patents to those whose claims are novel (have not been made before) and would not be obvious to a person who is skilled in that relevant field.¹ Patents are essential and useful since they promote innovation and enable people to develop new technology by building on the existing innovations.² They allow owners to prevent anyone from the manufacture or sale of an invention as long as the patent exists as a reward for the time, money and effort invested in developing an innovation. While tangible property can only be in one location, at one particular moment in time, ideas can spread and be used in various locations at the same time without depleting the original.³

Patent rights in intellectual property are valuable, and anyone who infringes on the patent can be sued in a court of law. Patent trolls are owners of patents who use their rights to sue alleged infringers to gain an advancement in the market and earn monetary damages or settlements. They purchase patents that can be interpreted in their favor to develop technologies

¹ "Patent Assertion and U.S. Innovation", President's Council of Economic Advisers, the National Economic Council, and the Office of Science & Technology Policy, June 2013, https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf, at 7.

² Lauren Cohen, Umit Gurun, and Scott Duke Kominers. "Empirical Evidence on the Behavior and Impact of Patent Trolls: A Survey." (2015) at 5461-5486.

³ James F. McDonough III. "The Myth of the Patent Troll: An Alternative View of The Function of Patent Dealers in an Idea Economy+." *Emory Law Journal* 56, (January 1, 2006) at 206.

and utilize them maliciously to get licensing fees from the original creators. Alternatively, patent trolls can be referred to as “troll(s).” A “troll” would be an individual or entity who tries to profit off of a patent in which they have no intention of practicing or have never practiced. Many innovative companies are affected by patent trolls or “non-practicing entities.” These entities assert patents but do not manufacture or produce goods and services but make money from licensing production companies. They make it difficult for companies to develop and enjoy their property rights. The United States has witnessed a dramatic increase in patent litigation in the 21st century. Some scholars attribute the fast development of patent litigation to the number of patents, which exposes them to greater risk. If there is no preventive action implemented to stop patent trolls, they will continue to flood the patent litigation system and hinder innovation as many will fear the costly payouts.

II. The Use of the term “Patent Trolls.”

Some judges have expressed their concern with the term “patent troll” in litigation as it is not a legal term. In the matter of *Hynix Semiconductor Inc. v. Rambus Inc.*, judge Whyte excluded the use of “patent troll” during trial, once the defendant brought a suit.⁴ Similarly, in 2014 in the case of *GPNE Corp. v. Apple Inc.*, judge Koh granted GPNE Corp.’s motion to exclude Apple’s use of “patent troll”, “pirate”, “bandit”, or “bounty hunter” at trial.⁵ Instead of these terms, judge Koh allowed Apple to reference GPNE by “non-practicing entity”, “licensing entity”, “patent assertion entity”, “a company that doesn’t make anything”, or “a company that doesn’t sell anything”.⁶ While district courts have been wary of prejudicial references and

⁴ *Hynix Semiconductor Inc. v. Rambus Inc.*, 897 F.Supp.2d 939 (N.D. Cal. 2012).

⁵ Pretrial Order re: Motions in Limine, *GPNE Corp. v. Apple Inc.*, No. 12-CV-02885 (N.D. Cal. June 24, 2014); see Kurt Orzeck, judge Koh Bars Apple from Calling Rival 'Patent Troll' at Trial, LAW360 (June 26, 2014), <http://www.law360.com/articles/552392/judge-koh-bars-apple-from-calling-rival-patent-troll-at-trial>.

⁶ Joel Rosenblatt, Apple Promptly Calls Out "Patent Troll" After Trial Win, BLOOMBERGBUSINESS, Oct. 24, 2014, <http://www.bloomberg.com/news/articles/2014-10-22/apple-says-it-defeated-gpne-patent-infringement-case-at-trial>.

utilizing the term “patent troll”, Supreme Court justices have shown a different position.⁷ In *eBay v. MercExchange L.L.C.*, Justice Kennedy wrote a concurring opinion to suggest that an injunction might not be warranted in some cases where non-practicing entities would prevail.⁸ Although Justice Kennedy did not reference the term “patent troll” in his decision, he stated, “...for these firms, an injunction...can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent. When the patented invention is but a small component of the product the companies seek to produce and the threat of an injunction is employed simply for undue leverage in negotiations, legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest.”⁹ While Justice Kennedy did not reference the term “patent troll”, Justice Scalia was the first justice to use the word “patent troll” in an opinion. In his dissenting opinion in *Commil USA, LLC v. Cisco Systems, Inc.*, Scalia argued “increases the in *terrorem* power of patent trolls.”¹⁰ Despite Justice Scalia’s utilization of the term, the Supreme Court has veered away from its use and the Federal Circuit has refrained from using “patent troll” in its published decision, except for one exception.¹¹ Despite the formality of “patent trolls” used in judicial decisions, the term is commonly used in reference to non-practicing entities that hold large patent portfolios to extract licensing fees from legitimate businesses.

⁷ Edward Lee, “Patent Trolls: Moral Panics, Motions in Limine, and Patent Reform”, 19 STAN.TECH.K.REV.113(2015) at 123.

⁸ *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 126 S. Ct.1837 (2006) (Kennedy, J., concurring).

⁹ *Id* at 396-97.

¹⁰ *Commil USA, LLC v. Cisco Systems, Inc.*, 135 S. Ct. 1920, 1932 (2015) (Scalia, J., dissenting).

¹¹ See *In re Packard*, 751 F.3 1307, 1324 (Fed. Cir. 2014) (Plager, J., concurring) (arguing against ambiguous standards for claim construction because they “encourage[e] the kinds of litigation that have made ‘patent trolls’ dirty words (Patent trolls are also known by a variety of other names: ‘patent assertion entities’ (PAEs), ‘non-practicing entities’ (NPEs))”).

III. What Can be Protected by a Patent?

There are various types of patents – utility patents, design patents, and plant patents.¹²

Utility patents are granted to anyone who invents or discovers any new or useful process, the machine, article of manufacture, or composition of a matter, or any new and useful improvement thereof.¹³ Design patents are granted to anyone who invents a new, original, and ornamental design for manufacture.¹⁴ Plant patents are granted to anyone who invents, discovers, and asexually reproduces any distinct and unique variety of plants.¹⁵ In the most recent years, various companies have developed business method patents to maneuver around copyrights. *Research Corporation Technologies v. Microsoft Corporation*¹⁶, was a noteworthy case with respect to patent eligibility, which is important in order to understand the various avenues of patent trolls. *Research Corp.*, initiated action against *Microsoft* alleging that six related patents of theirs were infringed by them. These six patents related to digital image halftoning which are thousands of pixels arranged in arrays of rows and columns.¹⁷ Each arrangement of pixels, shows a different shade of gray. The Federal Circuit Court found the range of non-abstract, patentable subject matter to be vast. This case meant that computer software was patent eligible. A second case, which set precedent with respect to patent eligibility was *Alice Corporation (Alice) v. CLS Bank*. Alice is a company which owns various patents, all of which have to do with computerized trading platforms dealing with financial transactions. A third party would settle obligations between two primary parties to mitigate a “settlement risk”.¹⁸ Alice’s patents would mitigate that

¹² Description of patent types, accessed December 5, 2021, <https://www.uspto.gov/web/offices/ac/ido/oeip/taf/data/patdesc.htm>.

¹³ Id.

¹⁴ Id.

¹⁵ Id.

¹⁶ *Research Corp v. Microsoft Corp.*, 627 F.3d 859 (Fed. Cir. 2010).

¹⁷ Id.

¹⁸ *Alice Corporation (Alice) v. CLS Bank*. 573 U.S. 208, 134 S.Ct. 2347 (2014).

risk by using the third party as the guarantor.¹⁹ CLS Bank had sued Alice for non-infringement and invalidity of three of their patents, and Alice countersued and claimed infringement. The court noted that patent laws should not restrain abstract ideas that are the “building blocks of human ingenuity” and therefore held that Alice’s claims were not eligible for patent protection because they did not improve any technology or any other technological field.²⁰ Both Research Corp. and Alice demonstrated the wide range of what is patent-eligible while narrowing eligibility requirements. The principle behind patents in intellectual property law is the difficulty in developing innovative products and the time invested therein. After these challenges have been overcome, it becomes easy to reproduce a product.

IV. The Right to Property and the Importance of Patents

Property rights are constructs that determine how goods are used and owned. They exist to protect people and businesses from unfair practices and spur innovation. Intellectual properties are intangible creations of the human mind, and they play a pivotal role in ensuring the proper running of a business without external interference. While other traditional properties like land and goods can be protected with fences and guards, this is not the case with intellectual properties. Property rights lay out the framework for how intellectual property can be used.²¹ Property rights help encourage the creation of more intellectual property but still help ensure such rights are not so strong that they prevent the goods' primary use. Doing so, it helps ensure there is no interference with business practices. An inventor knowing that their idea will be protected stimulates the progression of society as that inventor will be incentivized to innovate.

¹⁹ Id.

²⁰ Id.

²¹ Evenson, R. E. (2019). *Intellectual property rights, R&D, inventions, technology purchase, and piracy in economic development: An international comparative study* at. 325-355.

To understand if the intellectual property can be viewed as “property,” an understanding of property itself must be made. “Locke’s labor theory of property hinges on the notion that the labor of a man ‘increased the value of a thing’ and that for any man ‘...the Labor of his Body, and the Work of his Hands, we may say are property his.’”²² Thus, Locke advocates ownership of property as a “natural right based on an individual’s labor upon materials and resources that are held in common.”²³ Although intellectual property does not encumber physical labor upon its formation, it does require mental labor. Therefore, it can be argued that an individual who labors on knowledge or information held in common to produce an intellectual product should be afforded the same protections as physical property.²⁴ This perspective is not widely shared, but it should be entertained when exploring the avenue of how to combat patent trolls.

It is crucial to ensure economic prosperity when it comes to intellectual property. No one will be willing to invest their money in an industry where they don't have a stake. Property rights in intellectual property set businesses apart from the competition. Intellectual properties are costly to develop and need to be well protected from use by people who did not participate in their creation.²⁵ For example, a company like Microsoft has significantly benefitted from their patents. It helps in keeping competitors at bay. For this reason, other companies are not legally able to manufacture the same products Microsoft creates under their patents to compete with the parent one. Duplicates and counterfeits are prohibited, ensuring the originator of any intellectual property makes a profit and has received the capital invested from the business.

²² John Locke, *Two Treatises of Government*, 1690, Section 27.

²³ Tarun Krishnakumar, “All Your Intellectual Property Are Belong to Us: How Copyright and Patent Trolls Are Questioning the Jurisprudential Foundations of Treating Intellectual Property as Property,” *Indian Journal of Intellectual Property Law* 9 (2018) at 182.

²⁴ Krishmakumar, “All Your Intellectual Property,” at 182.

²⁵ E. Mansfield, *Intellectual property, technology, and economic growth*. “In Intellectual Property Rights in Science, Technology, and Economic Performance”, at 17-30.

Another essential benefit of property rights is protecting intellectual property from confiscation and government control. Governments and authorities can easily take back property rights on intellectual property. Property rights ensure unnecessary disturbance and harassment by officers of the state are stopped.²⁶ Taxes and other remittances to the authorities are also duly stipulated to ensure unfair and unclear remittances do not arise in the course of running businesses.²⁷ Property rights define territories on which specific intellectual properties can be used. This aids in preventing unnecessary political scores by controlling intellectual rights from perceived political enemies.

Patents are one of the most critical pillars of innovation. At the forefront, patents shield the innovator against competitors who attempt to duplicate their ideas.²⁸ This protection gives the innovator the exclusive right over their idea. Secondly, the right to exclude is a transient property right that may be bought, sold, licensed, or exchanged.²⁹ However, often times, those who invent are not as advanced with business practices and are unable to run a business operation around their invention.³⁰ In that event, the inventor, delegates this to others who are skilled in this field and can market the innovation where it seems the best fit. This transition can also be seen within a company. For example, when a research and development department innovates technology in goods manufactured, they would not be the ones who take on the distribution and marketing of a product. Other parts of the company would absorb these roles.

²⁶ Davoudi, S. M. M., Fartash, K., Zakirova, V. G., Belyalova, A. M., Kurbanov, R. A., Boiarchuk, A. V., & Sizova, Z. M. (2018). "Testing the Mediating Role of Open Innovation on the Relationship between Intellectual Property Rights and Organizational Performance: A Case of Science and Technology Park." *Eurasia Journal of Mathematics, Science and Technology Education*, 14(4), 1359-1369.

²⁷ Roh, T., Lee, K., & Yang, J. Y. (2021). "How do intellectual property rights and government support drive a firm's green innovation? The mediating role of open innovation". *Journal of Cleaner Production*, 317, 128422.

²⁸ Stephen H. Haber, and Naomi R. Lamoreaux. *The Battle Over Patents: History and the Politics of Innovation*. No. w28774. National Bureau of Economic Research, 2021.

²⁹ Id.

³⁰ Johan Schot, and W. Edward Steinmueller. "Three frames for innovation policy: R&D, systems of innovation and transformative change." *Research Policy* 47, no. 9 (2018) at 1554-1567.

V. The Right to Ownership Should Not Come at a Cost

A patent troll is an entity attacking the use of a patent to which ownership is claimed but for which the patent has not been practiced.³¹ Many non-practicing entities (NPEs) only exist to actualize their patents and threaten other institutions with civil suits if they do not receive large licensing fees. Non-practicing entities have been around since the 1800s. For example, Charles Goodyear was known for inventing a process to create vulcanized rubber in our automobile tires today.³² However, Goodyear never manufactured or sold his products and instead sold the patent he obtained in 1844 for his invention. He then used the patented process to manufacture, sell and use the rubber products to advance the era of automobile tires.³³ Patent trolls often take the low-risk route since many are only shell entities loosely associated with more prominent companies.³⁴ Therefore, they do not have sufficient assets to give huge awards to the owners if they lose a legal suit. Research shows that these entities do not invest in research and development companies. Patent trolls do not have goods and services that can be patented on their own. For this reason, patent trolls must communicate with other institutions with intellectual property rights.³⁵

Patent trolls attack intellectual property owners and practicing entities who have established their ideas or inventions. These trolls are attacking both the stimulation and progression of innovation and the economy each time they file a lawsuit. Since the economy is the country's engine, this is problematic for economic growth. Patent trolls are in the business to

³¹ Brenda Sandburg, "You May Not have a Choice. Trolling for Dollars, Patent Enforcers are Scaring Corporate America, and They are Getting Rich – Very Rich-Doing It", RECORDER, July 30, 2001.

³² Economist. 2015. 'Patent Trolls: Why no one likes them', <http://www.economist.com/news/business-and-finance/21645604>.

³³ Adam Mossoff., 2015. 'Repetition of Junk Science & Epithets Does Not Make Them True', IPWatchDog, <http://www.ipwatchdog.com/2015/11/19/repetition-of-make-them-true/id=63302/>.

³⁴ Heidi Ledford, "Congress Seeks to Quash Patent Trolls." *Nature News* 521, no. 7552 (2015) at 270.

³⁵ Dorottya Bányai, "Legal responses of the United States of America to patent trolls—A step into the right direction?" (2015) at 18.

benefit themselves. Their ultimate goal is a large settlement after preying on successful innovations. Patent trolls have a goal of maximizing potential settlements and awards for damages. For this reason, non-practicing entities will typically threaten to file suit that has generated significant revenue and after the defendant is locked into the alleged “infringed” product or technology.³⁶ The United States government is growing weary of the increased patent lawsuits against large technology companies in the nation. Patent trolling negatively impacts the United States economy due to legal costs incurred and the cost of award settlement. These patent trolls hinder innovation, which affects the economy as well in the long run. These trolls disincentivize citizens from putting forth the effort and investment toward innovation. Non-practicing entities brought 63% of the United States patent infringement cases to court in 2014, costing large corporations approximately \$12 billion in legal fees.³⁷ Scholars indicate that patent trolls assert patents against various potential infringers and rely on the high cost of filing and settling the case to get fast settlements.³⁸

To put these figures into perspective, in order to complete the summary judgment phase of a patent infringement lawsuit can easily cost over \$1 million dollars.³⁹ A study in 2014 indicated that trolls cost the American society approximately \$30 billion per year and a total of \$500 billion over the past twenty years prior.⁴⁰ However, if a company can settle a patent troll infringement lawsuit for anywhere between \$50,000 to \$500,000, it is more cost-effective than spending \$1-\$4 million, or more, to litigate and defend patent lawsuits.⁴¹ Within a decade, the

³⁶ Grace Heincke, Note: “Pay the Troll Toll: The Patent Troll Model is Fundamentally at Odds with the Patent System’s Goals of Innovation and Competition,” 84 *Fordham L. Rev.* 1153.

³⁷ Ledford, at 270.

³⁸ Sona Karakashian, “A software patent war: The effects of patent trolls on startup companies, innovation, and entrepreneurship,” *Hastings Bus. LJ* 11 (2015) at 138.

³⁹ D. E. Rogers, “Fighting Patent Trolls” (October 16, 2017). Retrieved November 3, 2021.

⁴⁰ Vincent R. Johnson, “Minimizing the Costs of Patent Trolling,” *UCLA Journal Of Law & Technology* 18, no. 2 (Fall 2014) at 4.

⁴¹ Rogers, “Fighting”

number of non-practicing entity litigations has grown from less than 5% of all U.S. patent litigation to over 60%.⁴² These figures are alarming, as they put into perspective how patent trolls continue to be an existing threat and an emerging one. For these reasons, a patent becomes a commodity if a credible threat of litigation arises.⁴³ Banyai supports this argument by indicating that large companies prefer to settle payments outside litigation, as the litigation process is costly.⁴⁴ Contrary to these arguments, some researchers suggest that the “expensive litigation” is not a disadvantage of patent trolls because the high costs could be due to other factors outside the NPE’s undertakings.⁴⁵ Recent research indicates that patent trolls have started targeting businesses, individuals, and institutions that use technology from large companies.⁴⁶ For example, a company of patent trolls sent letters to numerous companies in the hotel and tourism industry, arguing that those businesses infringed their patents by utilizing wireless technology to avail internet connectivity to their customers.⁴⁷ This market has been opportunistic for patent trolls and one they have been taking advantage of for maximum profit.

A surplus of evidence suggests that NPEs navigate and target companies opportunistically. It is estimated that 59% of patents owned by NPEs have at least one invalid claim, compared to 42% for all asserted patents.⁴⁸ Another common opportunistic practice of NPEs is “forum shopping.” For example, innovation hubs, such as Silicon Valley, have large numbers of NPE suits and regions where patent litigation would be favored, such as the Eastern

⁴² Robert G. Harris, "Patent Assertion Entities & Privateers: Economic Harms to Innovation and Competition." *The Antitrust Bulletin* 59, no. 2 (2014).

⁴³ McDonough, “The Myth,” at 206.

⁴⁴ Banyai, "Legal Responses”.

⁴⁵ Jay P. Kesan, "Patent trolls." *Research Handbook on the Economics of Intellectual Property Law* (2019).

⁴⁶ Paul R. Gugliuzza, "Patent trolls and preemption." *Va. L. Rev.* 101 (2015) at 1581.

⁴⁷ *Id* at 1582.

⁴⁸ Lauren Cohen, Umit G. Gurun, and Scott Duke Kominers. “The Growing Problem of Patent Trolling.” *Science* 352, no. 6285 (2016) at 521–22. <http://www.jstor.org/stable/24744845>.

District of Texas.⁴⁹ These regions are where NPEs file their suits strategically.⁵⁰ The Eastern District of Texas accounts for about 43% of all patent litigation cases, as they are perceived as “plaintiff-friendly”.⁵¹ A very large motivator for NPEs is cash. NPEs often sue companies with large cash holdings as they would be more likely to receive their cash settlement quicker and in a larger amount.

It can be argued that the losses to the alleged “infringers”, would be offset by the gains to the patent owners. For reference, PAE’s are businesses which acquire patents from third parties and seek to generate revenue.⁵² As an example, from the years 2000 to 2010, a set of fourteen publicly-traded patent assertion entities (PAE’s) had total revenues of \$7.6 billion.⁵⁴ “Patent suits initiated by those fourteen entities were associated with a decline of \$87.6 billion in defendant company share value over the same period.⁵⁵ This implies that the financial award experienced by winning PAEs amounts to less than 10% of the lost share value in this sample.”⁵⁶ This “event study” was conducted to determine the impact of recession on firm valuation and looked at changes in firm’s share value around the time of a lawsuit filing.⁵⁷ However despite its intended study, this sample analysis concluded that the losses do not offset the gains to patent owners, and in fact, they leave patent owners at a severe deficit. The costs of settlements and awards are not

⁴⁹ Id at 521.

⁵⁰ Id.

⁵¹ Id.

⁵²“Patent Assertion Entities (PAE) Study,” Federal Trade Commission, September 17, 2020, <https://www.ftc.gov/policy/studies>.

⁵⁴ “Patent Assertion and U.S. Innovation” (President’s Council of Economic Advisers, the National Economic Council, and the Office of Science & Technology Policy, June 2013), https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf.

Note that the \$7.6 billion does not include payment streams received after 2010 related to settlements won during the study period. Future payment streams are unlikely to be large given that settlements tend to be paid in lump sums.

⁵⁵ Id.

⁵⁶ Id.

⁵⁷ James E. Bessen, Michael J. Meurer, and Jennifer Laurissa Ford. "The Private and Social Costs of Patent Trolls." Boston University School of Law, Law and Economics Research Paper No. 11- 45, September 19, 2011.

the only economic impact patent trolls have on technology companies. When these technology companies are allocating their monies towards patent litigation, it hinders various other parts of their business, toward which they could have utilized the allocated funds. The impacts of a patent assertion entity's (PAE) demand on technology startups include 40% of one or more significant operational impact, 18% product change, 15% delay in meeting non-headcount milestone, 14% exit business/line or pivoting business strategy, 10% in delay in hiring, and 4% in fundraising impact.⁵⁸

While companies divert funds to pay out patent trolls, critical areas within a corporation fall further behind, such as research and development, which is the driver behind innovation. This is due to the reallocation of monies in the company, but also because companies may shift focus and reduce innovation to prevent future litigation. This is very problematic for the progression of society and future advancements, as patents were created to not only protect an inventor's idea, but to stimulate innovation. These financial impacts further delay innovation and set a company further back. Another defense mechanism some companies use is over-extending their "security" measures to prevent frivolous patent litigation. An example of such would be demonstrated by patent acquisitions and purchasing companies. Google purchased Motorola for \$12.5 billion, largely to prevent patent suits from competitors.⁵⁹ Many companies do not have the financial resources to purchase companies as Google does, therefore it is certainly a possibility that innovation is being hindered due to either the cost of paying out patent troll settlements, or the mere fear of future litigation. The direct cause of research and development hindrance deserves further study.

⁵⁸ "Patent Assertion and U.S. Innovation".

⁵⁹ Brian Womack, and Zachary Tracer. "Google to Buy Motorola Mobility for \$12.5 Billion to Gain Wireless Patents." Bloomberg. August 15, 2011.

Retrospectively, the influx of intellectual property in our markets can become inefficient and overwhelming. “Market efficiency is enhanced when property rights are well-defined, when transaction costs are minimized, and exchange is depersonalized.”⁶⁰ Patent trolls provide liquidity in the market, which increases the efficiency of the patent market, similar to how securities dealers supply capital markets.⁶¹ Increased patent liquidity and reduced risk gives inventors the incentive to create, which results in advancements within that particular industry.⁶² Patent dealers have been on the rise within this market; however, this does not trigger a need for concern; rather, it signals progression, efficiency, and market evolution.⁶³ If patent trolls did not exist, the markets would be overwhelmed with patents - and would remain dormant. The liquidity of the market also stimulates growth and improvement. If an inventor does not have the immediate funds, they are able to sell off their rights. “For instance, Elijah McCoy’s lubricating device in 1872, did not have enough funds to manufacture his improvements in engine lubricators, but he was able to appropriate returns by selling off the rights to most of his patents.”⁶⁴ Although these benefits are substantial, they do not supersede the negative economic impact patent trolls have on the market. More importantly, the power to liquidate is a cause for concern as it diminishes the merits of an individual’s patent protections.

VI. Why is it so Difficult to Stop Patent Trolls?

It is difficult to stop patent trolls through legal reform without taking away an individual’s rights and protections provided by patents. In the recent years, legislators have tried to make it more difficult for trolls to flood the market. Despite the recent efforts, no laws can

⁶⁰ The Battle over Patents (Kindle Locations 8298-8299). *Oxford University Press*.

⁶¹ McDonough, “The Myth,” at 19.

⁶² Id at 223.

⁶³ Id at 227.

⁶⁴ Khan B. Zorina, "Trolls and Other Patent Inventions: Economic History and The Patent Controversy in The Twenty-First Century." *George Mason Law Review* 21, no. 4 (2014).

stop patent trolls from filing suit. Legitimate businesses face unsure futures due to abuse of patent laws. As a result, reforms to the patent litigation system are needed to mitigate the soaring rate of patent lawsuits. Since a patent is a government grant of power to exclude others from the use of an invention, it creates a property right that can be licensed or sold – by selling the title to the patents themselves.⁶⁵ This right must be preserved. The structure of American innovation is more market-oriented because the United States patent system defines property rights in inventions, which reduces transaction costs, thereby creating an incentive such as monetary rewards and prices.⁶⁶ Patent trolls have exposed many weaknesses in the system, including the Patent and Trademark Office’s (USPTO) barrage of patent applications, overly broad patents, and procedural advantages for the filing party in lawsuits, among others.⁶⁷

There has not been much reform in the patent law system. The most recent and significant reform in the past sixty years has been the Leahy-Smith America Invents Act (AIA).⁶⁸ The America Invents Act is a United States federal statute which was passed by Congress and signed into law on September 16, 2011, representing the most substantial change in US patent law since the Patent Act of 1952. This was a long overdue effort of reform to modernize the United States patent laws. The plan for reform is a shift from “first to invent” to “first to file”, which went into effect on March 16, 2013. This system eliminates interference proceedings, and develops post-grant opposition. This reform was critical and overdue as it prevents an applicant from relying on an earlier invention to argue a reference. This assists in slowing the trolls in their

⁶⁵ Harris, "Patent Assertion,".

⁶⁶ Stephen H. Haber, and Naomi R. Lamoreaux. *The Battle Over Patents: History and the Politics of Innovation.*, (Kindle Locations 8290-8291).

⁶⁷ 84 Fordham L. Rev. 1153.

⁶⁸ 11 Hastings Bus. L.J. 119.

act under the AIA law, where a public use or sale anywhere in the world stands as precedence, thus creating uniformity with patent litigation in other parts of the world.

There were two provisions in the AIA Act that drew most of the attention and importance of the act, first-inventor to file and post-grant operations.⁶⁹ Specifically, Section 3 of the AIA enforced the “effective filing date” to be “the actual filing date of the patent or the application for the patent containing a claim to the invention; or (B) the filing date of the earliest application for which the patent or application is entitled.”⁷⁰ This language transformed the U.S. patent litigation system from a first to invent to a first to file system. Congress further made clear in the Act’s language that the shift was not made to simply first to file, but first inventor to file. This distinction meant that a non-inventor might not be awarded the rights to a patent.⁷¹

Another part of the AIA Act reviews the materials of the applicant or the patentee, thus improving the patent quality, reducing the burden on those practicing invalid patents and strengthening the hand of those possessing good patents.⁷² The AIA also incorporated numerous other reforms to the patent law, one of which allows “joinder in patent cases only when all claims arise out of the same set of facts and transactions.”⁷³ Previously, many plaintiffs would just file simultaneous lawsuits against multiple defendants, which would have numerous courts consider the same issue and raise the possibility of inconsistent results.⁷⁴ This Act rejected the joint defendants due to the idea that every defendant infringed a similar patent. This legislation forced many patent trolls to file different suits against different defendants, increasing the

⁶⁹ Bruce D Abramson, “Trolling around the patent-antitrust interface: The roots of the NPE challenge and the role of antitrust in patent reform.” *Antitrust Bulletin* 59, no. 2. at 258.

⁷⁰ AIA § 3(a)(2)(i)(1)(A)-(B), 125 Stat. at 285.

⁷¹ See AIA §§ 3(a)(2)(f), 4(b), 125 Stat. at 293.

⁷² Abramson, “Trolling Around,” at 259.

⁷³ *Id* at 260.

⁷⁴ *Id*.

number of patent cases in courts.⁷⁵ The provisions the AIA Act brought were much needed to strengthen patent law because “the weakening of patent rights always creates a new opening for antitrust enforcement and adjusts the interface between them.”⁷⁶ While the AIA Act was enacted in 2011 to slow down the patent trolls; there have been controversial opinions regarding the Act’s efficacy. It would be an infringement on an individual’s property rights to restrict patent trolls as it would include legitimate claims, which would no longer hold merit. Christopher Beauchamp argued that since the AIA act altered the rules regarding “joinder” by raising the standards, it increased the number of lawsuits filed.⁷⁷ This in turn increased the number of cases within the system.

While the AIA Act was enacted with good intentions to make it more difficult for patent trolls to file frivolous lawsuits with the Court, it was not as effective with its results. In 2010, before the AIA being enacted, patent trolls accounted for 29% of all patent lawsuits filed in America.⁷⁸ In 2011, the same year the AIA was enacted, patent trolls accounted for 45% of all the patent lawsuits filed, a 16% increase from the year prior.⁷⁹ However, what is even more alarming is that in 2012, legislators believed they would see the percentage of patent troll lawsuits decrease, they instead increased to 62% of all patent lawsuits filed.⁸⁰

The change of rules in joinder did not seem to hinder the effects of reducing harsh litigations by non-practicing entities. Instead, it generated an increase in inefficiency and

⁷⁵ Kesan, "Patent trolls," at 3.

⁷⁶ Abramson, at 261.

⁷⁷ Stephen H. Haber, and Naomi R. Lamoreaux. *The Battle Over Patents: History and the Politics of Innovation*. at 397.

⁷⁸ “Patent Assertion and U.S. Innovation ”(President’s Council of Economic Advisers, the National Economic Council, and the Office of Science & Technology Policy, June 2013), https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf. There are limited sources for collection data pertaining to the changes of patent trolling cases.

⁷⁹ Id.

⁸⁰ Id.

shopping forum experienced in pre-trial activities.⁸¹ The AIA implementation history suggests that any implementations made to address non-practicing entities in the patent system should be carefully analyzed to ensure the aftermath does not stifle innovation and patent owners but eliminates non-practicing entities' detrimental behavior. The AIA act has restricted the actions of patent trolls' coercive behavior. Since the passing of the act, there has been an increase in abusive behaviors of non-practicing entities. Post-grant review (PGR) and the Method of business review (CBM) are covered by the Inter Partes Review (IPR) Patent Trial and Appeal Board (PTAB) post-grant proceeding set up under the AIA. These review processes were created to reduce costly litigation of federal monies, which grant anyone, including small businesses, inventors, and cash-strapped individuals, the opportunity to oppose a patent's claim validation. By giving the power for anyone to challenge a patent's validity, the AIA act has advanced to combat patent system abuse and the increase of patent trolls.⁸²

There is limited essential information on the impact of patent trolls on intellectual property law because of the increase of private entities that do not publicize crucial information or confidential settlement agreements. Additionally, most studies do not dig comprehensively into the effects of patent trolls or NPEs on the economy because of the classification of different NPEs into one category despite varying traits. Studies postulate that NPEs have both positive and negative impacts. They outline that NPEs can be effective financial intermediaries capable of enforcing intellectual property and increasing investors' incentives to spearhead innovation.⁸³ To counter these arguments, other studies indicate that NPEs act as patent trolls and unconventionally extract fees from other companies by taking advantage of the gaps in the legal

⁸¹ Jay P. Kesan, "Patent trolls." *Research Handbook on the Economics of Intellectual Property Law* (2019).

⁸² Jay P. Kesan, "Patent trolls." *Research Handbook on the Economics of Intellectual Property Law* (2019).

⁸³ Cohen, "Empirical evidence," at 5461-5486.

system to threaten companies regardless of whether the company has violated patent law.⁸⁴ The protection of patents goes beyond the investor's value of the invention.

Several studies indicate that patent trolls target smaller businesses that do not have sufficient funds to defend themselves in court. Although the AIA established the "inter partes review (IPR)" – a process required to counter the relevance of patent infringement cases - taking such claims to court is expensive for small organizations.⁸⁵ Moreover, this move threatens small businesses from engaging in successful entrepreneurship and innovation.⁸⁶ Patent trolls undertake a legitimized form of extortion and develop inefficiencies in the market. Most patent trolls do not own the patent they want to enforce, therefore asserting a baseless patent. Although some patent trolls benefit from an efficient market for the establishment and use of new technology, some destroy the markets by developing inefficiencies such as barriers to entry and high transaction costs.

Consequently, an emergence of disincentive innovation arises in new technologies. Most patent trolls do not positively impact the economy, and instead curtail legitimate innovation efforts by increasing the costs of commerce. Paying for litigation costs and licensing royalties may increase production costs for the purported infringer.⁸⁷ An increase in production costs is transferred to customers who purchase products at higher prices, creating a loss in economic efficiency in the market.⁸⁸ Patent trolls may drive away investors from highly profitable businesses because they might feel like their interests and investments are not protected.

⁸⁴ Karakashian, "A Software Patent War," at 119.

⁸⁵ Karakashian, at 137.

⁸⁶ Id.

⁸⁷ Jay Pil Choi, and Heiko Gerlach. "A model of patent trolls." *International Economic Review* 59, no. 4 (2018): 2084.

⁸⁸ Cohen, "Empirical evidence," 4.

Following the passing of the AIA in 2011, on December 1, 2015, the Federal Rules of Civil Procedure Form 18 was eliminated.⁸⁹ This meant that plaintiffs suing for patent infringement now have to adhere to *Bell Atlantic Corp.* and be held under the same standard as litigants from other areas of law. In the case of *Bell Atlantic Corp. v. Twombly*, precedent was set concerning the standard for pleading in civil matters to contain “enough facts to state a claim for relief that is plausible on its face.”⁹⁰ From this came “Form 18,” which was required by the moving party. Form 18 requires the moving party to list the patents that had allegedly been infringed along with the defendants it alleged had infringed those patents. The moving party did not have to further explain what was infringed or which products/services were part of the suit. Such low standards allowed the plaintiff to just “get in the courtroom door.” This was problematic for any person or entity faced against NPEs as they were filing meritless, bare Form 18’s in hopes one would stick. As many do not have the cost or resources to litigate the matter, the defendant would settle the issue instead of spending hours and costly monies trying to go through the discovery process to challenge the validity of the complaint.

Some other alternatives which have been proposed, however not yet passed into legislation include the SHIELD Act, the PAR Act, and the PLI Act. The SHIELD Act focuses on lowering the chance for trolls to take advantage of the patent system by making the party bringing forth the suit pay first. The SHIELD Act includes a provision requiring a party bringing a patent infringement or invalidation suit to post a bond to cover litigation costs.⁹¹ The amount of the bond is set by the judge. The PAR Act is another Act created to reform the patent system. “The

⁸⁹ Jay P. Kesan, "Patent trolls." *Research Handbook on the Economics of Intellectual Property Law* (2019).

⁹⁰ patent-litigation-explosion.

Bell Atlantic Corp. v. Twombly., 550 U.S. 544, 127 S. Ct. 1955 (2007).

⁹¹ Daniel A, Tagliente. "Shooting Blanks: The Ineffectiveness of the Executive Branch's Entrance into the Great Patent Troll Hunt." *Seton Hall Law Review* 45, no. 1 (January 2015) at 333-334.

PAR Act introduces advanced pleading requirements, sets forth procedures for joinder of parties, places restrictions on the discovery process, defines relevant evidence, and allows the judge to award the prevailing party reasonable costs and expenses, including attorney's fees, in certain situations."⁹² Overall, the PAR Act enforces stricter policies on the patent litigation system to decrease patent trolling. The third Act, which was created to better the patent litigation system, is the PLI Act. The PLI Act has the purpose and intention of making filing a patent infringement suit more challenging by adding details and making it much longer. "The PLI Act sets forth new standards in pleadings, requiring a plaintiff in a patent infringement case to fully identify the alleged infringer, specify clear instances of infringement, and disclose the 'real party of interest.'"⁹³ Unfortunately, with tighter laws limiting the patent litigation system to deter trolls comes the risk of interfering with legitimate patent litigation entering the system. If a legitimate patent infringement lawsuit comes along, it can be cost-prohibitive. However, these three proposals of patent litigation reformation are potentially effective to eliminate immoral suits of patent infringement.

Of the most threatened categories, the most susceptible to patent trolls is the field of technology. As technology continues to develop, the market becomes more vulnerable to the risk of patent trolls. Approximately eighty-eight percent (88%) of troll litigations involve patents in the information and communications technology sectors, while more than seventy-five percent (75%) of those litigations involve software patents.⁹⁴ Software patents are almost five times more likely to be in a patent lawsuit than a chemical patent.⁹⁵ This is due to the ever-changing and

⁹² Tagliente, at 335.

⁹³ Id.

⁹⁴ Rogers, D. E. (2017, October 16). *Fighting Patent Trolls*. Retrieved November 3, 2021.

⁹⁵ "Patent Assertion and U.S. Innovation" (President's Council of Economic Advisers, the National Economic Council, and the Office of Science & Technology Policy, June 2013), https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf.

daily innovations associated with technology. For example, our phones tell us to update our applications numerous times a month. With each new type of technology advancement and software update, there are patents behind them. The more fluid the market is, the more attractive it is to patent trolls. Firms that produce surplus-generating technologies, on the whole, fight for stricter patent rules because greater property rights boost their negotiation position with businesses in the remainder of the supply chain. On the other hand, other companies in the supply chain prefer to fight for looser patent restrictions to strengthen their bargaining position.⁹⁶

Another reason why technology patents are at more risk to patent trolls is due to the issue of overbroad patents. The prevalence of “functional claiming” in software patents.⁹⁷ The term “functional claiming” involves claiming exclusive rights over any device that performs a given function, regardless of how it is performed, therefore defining it by what it does rather than what it is.⁹⁸ For this reason, a single piece of software would then have several thousand “functions” that could be claimed in various patents.⁹⁹ If you are not the inventor itself, it is difficult to understand what the claim of the patent was intended for and therefore making it difficult to know if one is infringing on patents. Research has also shown that most high-technology startups prefer to opt-out of patent protection altogether as they believe that the technology is not patentable, the cost of litigation to defend the patent against potential patent trolls is too high. There are alternative other forms of protection.¹⁰⁰

⁹⁶ Stephen H. Haber, and Naomi R. Lamoreaux. *The Battle Over Patents: History and the Politics of Innovation.*, at 149.

⁹⁷ “Patent Assertion and U.S. Innovation” (President’s Council of Economic Advisers, the National Economic Council, and the Office of Science & Technology Policy, June 2013), https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf.

⁹⁸ Id at 7.

⁹⁹ Id at 8.

¹⁰⁰ 11 Hastings Bus. L.J. 119.

There are two landmark cases in the technology market which set a precedent for patent trolls within the litigation system. The first case was *eBay v. MercExchange*.¹⁰¹ In this case, MercExchange filed suit against eBay for infringing on their patent, which gave online buyers the “buy now” option at auction. The Supreme Court ruled that eBay was infringing on MercExchange’s patent, and eBay was liable to pay 30 million in damages.¹⁰² MercExchange also sought an injunction to prevent eBay’s continued use of the patent; however, the court denied this request. “Before...*eBay Inc. v. MercExchange, L.L.C.*, many assumed that patent holders were normally entitled to injunctive relief in cases of infringement... The eBay ruling weakened the hands of NPEs...”¹⁰³ When eBay took this case to the Supreme Court, they ruled that a permanent injunction may only be issued in patent cases if the plaintiff can prove that the infringement satisfies a four-factor test. “The test requires a plaintiff to demonstrate: 1) that it has suffered an irreparable injury; 2) that remedies available at law are inadequate to compensate for that injury; 3) that considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and 4) that a permanent injunction would not disserve the public interest.”¹⁰⁴ *eBay v. MercExchange* created precedent that an injunction does not have to be issued simply because an infringement was found. Alternatively, an injunction is not denied because the entity does not practice the patent.

The second case was *Samsung Electronics Co. v. Apple Inc.* In 2007, Apple released its first generation of iPhones. With this release, Apple also released many patents for their design. “Among those patents were the D618,677 patent, covering a black rectangular front face with rounded corners, the D593,087 patent, a rectangular front face with rounded corners and a raised

¹⁰¹ *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 126 S. Ct.1837 (2006).

¹⁰² *Id.*

¹⁰³ Vincent R. Johnson "Minimizing the Costs of Patent Trolling." *UCLA Journal Of Law & Technology* 18:15.

¹⁰⁴ *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 126 S. Ct.1837 (2006).

rim, and the D604,305 patent, covering a grid of 16 colorful icons on a black screen.”¹⁰⁵

Following this, Samsung released a series of smartphones themselves that resembled the Apple iPhone, and in 2011 Apple filed suit against Samsung for the infringement of “Apple’s D593,087, D618,677, and D604,305 design patents.”¹⁰⁶ A jury concluded that, in fact many of Samsung’s smartphones did infringe on Apple’s products and awarded them the entire profit Samsung had made from those smartphones, \$39 million.¹⁰⁷ Samsung brought this case to the court of appeals stating that the “profits awarded should have been limited to the infringing ‘articles of manufacture.’”¹⁰⁸ This was reasoned and argued because the pieces of the smartphone are not sold separately. “The term “article of manufacture” is broad enough to encompass both a product sold to a consumer as well as a component of that product.”¹⁰⁹ This idea of “article of manufacture” put a different outlook on patents, looking at them from individual pieces to a whole object. These two cases were crucial to the patent litigation system. They both set a precedent of how vast the patent world is and, more importantly, that induction does not have to be denied because an entity does not practice a patent.

VII. Changes Since Reform

The patent system has not been “troll” proof despite the ongoing efforts toward keeping the trolls out of the litigation system. The question remains whether the number of patent troll cases has gone down since the most recent and significant reform of the AIA Act. The AIA Act was enacted in 2011. The year immediately following this reform, in 2012, over 5,000 patent suits

¹⁰⁵ *Samsung Electronics Co. v. Apple Inc.*, 137 S. Ct. 429 (2016).

¹⁰⁶ Id.

¹⁰⁷ Id.

¹⁰⁸ Id.

¹⁰⁹ Id.

were filed¹¹⁰ and the number of patents granted increased by 11% for a total of 270,258.¹¹¹ A study from the White House concluded that there were two (2) primary factors due to the increased rates in patent suits, inclusive of patent troll lawsuits. The first factor is due to the fact that technology is on the rise which leads to more computer and communications patents.¹¹² Patent Assertion Entities (PAE), are more focused in the information technology world. As much as 82% of PAE defendants were sued based on software patents, opposed to only 30% of those sued by non-PAE's.¹¹³ The second factor turns the attention to the patent holders. During the 20th century, patents were primarily held by manufacturers.¹¹⁴ PAEs do not have reputational concerns, and they do not manufacture any product. Therefore, PAEs can then develop economies of scale in suing numerous firms at the same time by way of demand letters asserting that said infringer has violated their patent. This way, the PAEs keep their legal costs low by only moving forward when their claim(s) is successful.¹¹⁵

The year 2020 brought great uncertainty to the world when the COVID-19 pandemic hit. Notably the United States faced shortages in every field and department, especially with essential personal protective equipment (PPE). There was great economic uncertainty and times of struggle. Throughout the pandemic, many individuals and businesses struggled to stay afloat. Despite the same, patent trolls still gained momentum with the emergence of Covid-related

¹¹⁰ Chris Barry, Et Al., 2013 Patent Litigation Study: Big Cases Make Headlines, While Patent Cases Proliferate (2013).

¹¹¹ Barry, supra note 2, at 6.

¹¹² "Patent Assertion and U.S. Innovation" (President's Council of Economic Advisers, the National Economic Council, and the Office of Science & Technology Policy, June 2013), https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf.

¹¹³ Colleen V. Chien, *Patent Assertion Entities*, Presentation to the DOJ/FTC hearing on PAEs. Washington, DC, December 10, 2012.

¹¹⁴ Federal Trade Commission (FTC). "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition." March 2011.

¹¹⁵ "Patent Assertion and U.S. Innovation" (President's Council of Economic Advisers, the National Economic Council, and the Office of Science & Technology Policy, June 2013), https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf.

innovation. During a global health crisis, patent trolls still had no mercy and targeted technology and healthcare companies whom were responding to the crisis. Patent trolls were targeting the makers of Covid tests and ventilators with patent suits while healthcare workers were trying to prevent deaths and stop the spread of a deadly virus. Public backlash led to some patent plaintiffs voluntarily dropping claims and offering royalty-free licenses for the purposes of COVID-19 use. Specifically, Labrador Diagnostics LLC, a subsidiary of Fortress Investment Group LLC, filed a lawsuit in March of 2020 against BioFire Diagnostics, LLC, who was deeply involved in developing coronavirus tests.¹¹⁶ What made matters worse was that the patents Labrador filed suit for infringement for, were originally issued to Theranos, a company which was shut down in 2018 due to the company's alleged claims against it for conducting fraudulent blood testing.¹¹⁷ The continuous, if not emerging, patent troll suits which developed during the COVID-19 pandemic raised concerns of patent litigation with respect to a pandemic response effort.

VIII. The Profit of Patents

It is true that patent trolls impact the patent litigation system however, the severity of their impact can be argued. The contributors in the “Battle Over Patents” unanimously agree that the patent system currently being utilized, is defective as the heart of the system is customized to generate an economic surplus.¹¹⁸ Critics of the patent system understand that the rate of patent litigation has recently become “excessive”, which implies that it is in comparison to something.¹¹⁹ Christopher Beauchamp who wrote “Dousing the Fires of Patent Litigation”,

¹¹⁶ “Can Patent Trolls Impact Covid-19 Testing and Treatment?”, (The Dobrusin Law Firm, April 23, 2020), <https://www.patentco.com/can-patent-trolls-impact-covid-19-testing-and-treatment/>.

¹¹⁷ Id.

¹¹⁸ Stephen H. Haber, and Naomi R. Lamoreaux. *The Battle Over Patents: History and the Politics of Innovation*.

¹¹⁹ Id at 398.

utilized a specific dataset of patent lawsuits from the nineteenth century to show that the present-day patent litigation rates are dwarfed by the levels which were reached during the 1840s to 1880s.¹²⁰ This data point holds regardless of the scale of suits, the number of patents in force, the size of the economy, or the total caseload in the federal courts.¹²¹ A demonstration of this was seen in the middle part of the nineteenth century.

Patent litigation rates were sky high and fell dramatically during the final decades and remained at a stagnant low level from around 1900 through the 1980s.¹²² Despite the failure of patent reform, which would have made it more burdensome to enforce patents against infringers, a drop in patent litigation occurred. From this came legal reform, which introduced the concept that patent systems must balance the incentive to invent. The motivation to invent derives from the grant of a temporary property right against the possible discouragements to technological progress that the right to exclude might entail if the patent is too broad or long-lived.¹²³ Beauchamp reaffirmed that although legal rulings helped lower litigation rates, legal rulings were not the sole factor behind the lower litigation rates. In addition to the reform, there were changes in the organization of the economy, which contributed to the decline of litigation rates as well.¹²⁴ The number of manufacturing firms fell, which meant fewer firms could potentially sue for infringement.¹²⁵ Therefore, Beauchamp argues that when discussing the rate of patent litigation suits, the numbers are not rising solely due to patent trolls. An overall assessment needs to be made to see the various factors contributing to the increased numbers. This is a relevant

¹²⁰ Id.

¹²¹ Christopher Beauchamp, “The First Patent Litigation Explosion.” *Yale Law Journal* 125, no. 4 (2016): 848–944. *The Battle over Patents* (Kindle Locations 601-602). Oxford University Press. Kindle Edition.

¹²² Haber at 356.

¹²³ Haber at 356-62.

¹²⁴ Haber at 368.

¹²⁵ Haber at 368.

analysis as patent trolls may not have as harmful impact on the patent litigation system as various critics assume.

IX. Alternative Dispute Resolution

The problem of patent trolls has been litigated extensively within the courtroom; however, outside of the courtroom remains an opportunity for prospective resolution, which is the field of alternative dispute resolution (ADR). “Courts originally did not favor alternative dispute resolution in patent law because strong public policy concerns are present in every patent validity and infringement determination, dictating attention from federal courts exclusively.”¹²⁶ This position changed in 1982 when Congress determined the virtues of arbitration outweighed any risk of threatened public interests and since, alternative dispute resolution has been present in patent law.”¹²⁷ Since the legislation of 35 U.S.C. § 29, voluntary arbitration, arbitration, and mediation have been of more interest amongst parties in the patent field. The attraction to ADR is not only the financial efficacy, but some companies would rather keep out of the public eye where various other issues may arise during the discovery process, potentially tarnishing their reputation.¹²⁸ The three most common and widely utilized alternative dispute resolution methods in patent law include arbitration, mediation, and negotiation.¹²⁹

Arbitration is very similar to a court proceeding where both parties have the opportunity to argue their case and a third party, agreed upon by the parties, makes a binding decision.

Arbitration arises from a contractual agreement, where the arbitration rules are within the

¹²⁶ Steven J. Elleman, Note, Problems in Patent Litigation: Mandatory Mediation May Provide Settlements and Solutions, 12 OHIO ST. J. ON DISP. RESOL. 759, (1997) at 767–68.

¹²⁷ Id.

¹²⁸ See Alan W. Kowalchuk, Resolving Intellectual Property Disputes Outside of Court: Using ADR to Take Control of Your Case, 61 DISP. RESOL. J., Jul. 2006, at 28, 30.

¹²⁹ David A. FitzGerald II., “Saving Alternative Dispute Resolution in Patent Law: Countering the Effects of the Patent Troll Revolution”., Vol. 23:2, at 354.

arbitration clause itself.¹³⁰ The parties to a patent law dispute must notify the patent office of the arbitration award to make the prize fully enforceable by law.¹³¹ As arbitration has a solid rule structure and various benefits, it is a desirable alternative dispute resolution for patent law disputes. Mediation is the following alternative dispute resolution widely utilized concerning patent law disputes. Unlike arbitration, where it seeks to adjudicate disputes, similar to a court proceeding, mediation attempts to negotiate a solution, utilizing a third-party mediator.¹³² Mediation allows for more open dialogue and creative solutions. Identical in the field of matrimonial law, in various post-judgment cases, a mediation clause is incorporated in the parties' Marital Settlement Agreement to attend mediation before any party applying with the court. This is done as an initial attempt to reach an agreement and avoid unnecessary costs. Although both arbitration and mediation do not guarantee a resolution, they can give patent disputants an opportunity to settle their dispute early in the process to avoid trial. The third possibility to prevent litigation is negotiation, which is not as often successful. Negotiation is similar to mediation, with the difference being in the absence of a third-party present, placing the burden on the parties to work with one another.¹³³ In patent troll disputes, negotiation most often involves prelitigation dispute resolution as licensing agreements are worked through in bargaining.¹³⁴ "The terms of a negotiated agreement at the early pre-litigation stage can be much more reasonable than the "reasonable" royalties awarded by courts later on."¹³⁵

Although methods of alternative dispute resolutions such as arbitration, mediation, and negotiation, do not provide for a guaranteed settlement of a patent law dispute, they may

¹³⁰ Id at 355.

¹³¹ Kowalchyk, *supra* note 43, at 34; 35 U.S.C.A. § 294 (2006).

¹³² FitzGerald II at 356.

¹³³ Id at 358.

¹³⁴ Id.

¹³⁵ David B. Conrad, *Mining the Patent Thicket: The Supreme Court's Rejection of the Automatic Injunction Rule in eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 126 S. Ct. 1837 (2006).

undoubtedly help litigants settle. These forms of ADR provide an alternative which companies may view as more time efficient and/or economical than dragging a patent troll dispute through a lengthy trial. The overall problem of patent trolls cannot be resolved using ADR, as if a patent troll is successful; they will be getting their financial award. However, for the “alleged infringers” ADR may be the better alternative to a suit they know does not look as favorable to them. Of the three types of alternative dispute resolution, arbitration may give the parties the most “court proceeding like” experience where they would have presented their case. Mediation and negotiation would mean the parties would be coming to some sort of compromise to reach a resolution, which is more difficult for parties to do. There is room for growth within alternative dispute resolution as an alternative to settling patent troll cases outside of the courtroom.

X. Proposals for Reducing Patent Trolling

Various critics and scholars have analyzed prospective resolutions for solving the ongoing issue of patent trolls in the litigation system. Benjamin Bradford has proposed a mandatory re-examination for all patents before their assertion in litigation.¹³⁶ Bradford’s proposal provides an opportunity for proper allocation of resources to patents that will actually be asserted and an opportunity for the accused infringers to participate in the consideration of a patent application.¹³⁷ The purpose of this proposed resolution is to discourage patent trolls or non-practicing entities from asserting patents solely to extract a nominal license. This is due to the heightened risk that the patent would be found invalid during the re-examination process, while a “good patent” holder would not be deterred.¹³⁸ While various scholars have advocated for solving the issue of patent trolling by lowering the standard of proof for establishing patent

¹³⁶ Benjamin J. Bradford and Sandra J. Durkin., “A Proposal for Mandatory Patent Reexaminations”, https://strategichealthlaw.com/wp-content/uploads/2019/02/Idea_proposal.pdf at 135.

¹³⁷ Id.

¹³⁸ Id. at 136.

invalidity; this would not solve the problem of bad patents or patent trolls because this solution only alters party incentives after litigation has commenced.¹³⁹ An effective solution must limit party incentive before litigation has begun, which is why Bradford's argument for a mandatory re-examination for patents before their assertion in litigation is a strong proposal for reform.¹⁴⁰

A similar approach from various scholars is an early-stage administrative review of patent suits by an expert body, with a proposed name of "Patent Litigation Review Board" (PLRB).¹⁴¹ Upon filing a patent suit, district court cases would automatically be stayed pending a preliminary review by the PLRB so parties to the case could present their arguments to the board before any discovery.¹⁴² Upon the completion of arguments and questions from both sides, the PLRB, under the standard of clear-and-convincing evidence, would determine if a party sufficiently proved their case concerning any of the issues raised for preliminary review.¹⁴³ The PLRB review can provide parties with a quick, cheap, and informative preview of the potential litigation costs they may face while previewing what a court might decide.¹⁴⁴

Another opportunity for reform is to revise already existing legislation. Critics of patent trolling have argued for making revisions to 35 U.S.C. §287(a) (the "marking statute").¹⁴⁵ This reform proposes a revision that would reduce the "pot of gold" a patent assertion entity (PAE) can demand at the outset of a patent case as compensation for past damages.¹⁴⁶ In an effort to achieve this, a PAE would have to give the accused infringer notice before being entitled to any

¹³⁹ Id at 137.

¹⁴⁰ Id.

¹⁴¹ Lauren Cohen, John M. Golden, Umit G. Gurun, and Scott Duke Kominers, "'Troll' Check? A Proposal For Administrative Review of Patent Litigation", <https://www.bu.edu/bulawreview/files/2017/10/GOLDEN.pdf> at 1808.

¹⁴² Id.

¹⁴³ Id.

¹⁴⁴ Id at 1810.

¹⁴⁵ "Change In Marking Statute Would Curtail Troll Litigation" (Law 360, March 3, 2015), <https://www.wsgr.com/a/web/43/elson-0315.pdf>.

¹⁴⁶ Id.

presuit damages.¹⁴⁷ Since PAEs often provide little or no notice before filing their complaint, this can be a significant deterrent to filing suit.¹⁴⁸ Unlike other prospective legislative proposals which mandate how district courts handle patent cases, like mandatory early claim construction hearings, this proposed reform does not pressure the judicial system to interfere at the beginning of a lawsuit.¹⁴⁹

Patents are rights granted to individuals and protected by the United States Constitution as property rights. Therefore, finding a way to legally “ban” patent trolls would interfere with an individual’s fundamental right. Patent trolls are utilizing legitimate property rights to achieve results contrary to the purpose of the patent system. Reforms like the AIA that allows “anyone” to raise patent infringement claims should be amended to reduce the number of people abusing the patent system. What makes patent troll litigation generally so successful is that many companies do not have the time and, more importantly, the money to expend on litigation a patent suit. Fighting a case through discovery and trial would be burdensome on the alleged infringer, so they would find it more economical to settle in the earlier stages of a lawsuit. As a potential reform, if the plaintiffs in patent litigation cases were required to post a bond upon filing, this would deter lawsuits as empty shell companies with no assets would not be able to afford the bond. This would also make the defendant more comfortable knowing the plaintiff asserting the claim would be less likely to have a frivolous lawsuit.

In addition to this, the plaintiff should be the one who is financially responsible for the cost of discovery. The traditional American paradigm is for each party in a case to bear their own costs for discovery. Courts generally refuse to shift the cost of discovery as it is a “foreseeable

¹⁴⁷ Id.

¹⁴⁸ Id.

¹⁴⁹ Id.

expense”.¹⁵⁰ In *Daewoo Electronics Co. v. United States*, the United States Court of International Trade held that “[t]he normal and reasonable translation of electronic data into a form usable by the discovering party should be the ordinary and foreseeable burden of a respondent in the absence of a showing of extraordinary hardship.”¹⁵¹ Courts do not generally consider allocating costs of discovery. Often times, patent trolls drive the cost of discovery into the millions as a tactic to pressure the defendant into a settlement. However, if this burden is shifted, they would be less inclined to pursue lengthy and costly discovery demands. In the end, if the plaintiff does prevail, there may be an option of reimbursement of fees associated with the discovery process to ensure rightful patent suits are not penalized for bringing forth their case.

Lastly, this reform might be more controversial to some however in application it would be effective. In an effort to decrease the rate of patent troll litigation, trolls should be required to provide proof of ownership for what they are filing suit on. For example, in copyright, plaintiffs are required to prove they own the property they are suing based on their registered copyright. On the contrary, patent suits have no such standard and therefore patent suits can be filed without proofs of what they patent trolls are actually making a claim based on. This standard would deter illegitimate and frivolous claims being filed as those filing would not be able to meet the standard requirement and those who then meet the claim would be willing to put the money into pursuing their claim once the standard is met. This may be controversial to some as often times individuals or corporations patent an idea and many years can go by without the idea coming to fruition. The standard would have to be strict enough to keep the frivolous suits out but allow

¹⁵⁰ Vlad Vainberg, “When Should Discovery Come with a Bill? Assessing Cost Shifting for Electronic Discovery”, at 1530-1531.

¹⁵¹ *Daewoo Electronics Co., Ltd v. the United States*, 650 F. Supp. 1003, 1006 (Ct. Int’l Trade 1986).

those who worked hard to create their patent, to show proofs of their plans, etc., from the time of patent filing as a way of ownership.

XI. Effective Reform – How Europe Handles U.S. Patent Trolls

While patent trolls have been successful in the United States, the same cannot be said for Europe. Looking at how a country like Europe handles the issue of patent trolling can give the United States judicial system a perspective of successful reform which can be implemented. While Europe's legal system differs from the United States' legal system in various ways, such as their autonomous legal system for granting and appealing patents, this section focuses on how they handle patent trolls and why their patent troll litigation rates are low. Most of Europe has adopted a "loser pays" rule.¹⁵² This rule, also known as the "English Rule," is a policy of reimbursement where the party who loses in litigation has to pay the winners' attorney fees and related legal expenses.¹⁵³ A fear with this rule is that wealthy litigants would have the upper hand, creating an unfair advantage.¹⁵⁴ Despite this fear, research has shown that the rule significantly deters speculative lawsuits, generally brought by patent trolls, by imposing a potential financial liability.¹⁵⁵ Researchers have looked at the effectiveness of a "loser pays" rule in the United States and have determined that it would decrease the number of weak and nuisance lawsuits, such as those brought to the court by patent trolls.¹⁵⁶ Under 35 U.S.C. § 285, a court may award attorney fees to a prevailing party in an exceptional patent case.¹⁵⁷ To further

¹⁵² Anna Mayergoz, "Lessons from Europe on How to Tame U.S. Patent Trolls.", *Cornell International Law Journal*, Vol. 42., at 266.

¹⁵³ W. Kent Davis, *The International View of Attorney Fees in Civil Suits: Why Is the United States the "Odd Man Out" in How It Pays Its Lawyers?*, 16 *ARIZ. J. INT'L & COMPL. L.* 361, 403 (1999).

¹⁵⁴ Mayergoz at 266.

¹⁵⁵ Jay P. Kesan, *Carrots and Sticks to Create a Better Patent System*, 17 *BERKELEY TECH. L.J.* 763, 787 (2002); Singleton, *supra* note 238, at 3.

¹⁵⁶ Marie Gryphon, "Manhattan Inst. For Policy Research, *Greater Justice, Lower Cost: How A 'Loser Pays' Rule Would Improve the American Legal System*", *supra* note 243, at 17-23 n.43 (discussing various studies proving that under loser pays there will be less dubious lawsuits, lower settlement rates, and overall lower costs of litigation).

¹⁵⁷ 35 U.S.C. § 285 (2012).

define the criteria of “exceptional”, in *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, the Supreme Court held that an exceptional case is one that stands out from all the rest.¹⁵⁸ The decision of *Octane Fitness*, affirmed two ways in which a case may “stand out”. The first is of the litigation position of the parties and second is how the case was litigated.¹⁵⁹ In addition to this, district courts have considered cases as exceptional where vexatious litigation has occurred.¹⁶⁰ One example of a vexatious litigation is when a patentee fails to conduct an adequate investigation prior to their filing of a lawsuit.¹⁶¹ Another example of a vexatious litigation, which is common in not only patent litigation but other areas of litigation, is when a party does not comply with discovery, such as not completely answering interrogatories.¹⁶² While there are strong examples of exceptional cases, cases such as a losing or unsuccessful cases do not constitute an exceptional case.¹⁶³ An examination of the European patent litigation system and its effectiveness in keeping patent trolls at low numbers, along with research in the United States, shows that the United States has the potential to implement a “loser pays” rule to decrease the number of patent trolls.

XII. Conclusion

Patent trolls pose a threat to innovation. It is difficult to enact legislation that prevents the trolls from attacking these patent holders without simultaneously limiting an individual or corporation’s property rights. Being a patent holder should not be impaired at the mere cost to prevent trolls from making a profit off of a patent which they have no intention of practicing. Reform limiting the actions of trolls comes from the AIA Act, SHIELD Act, PLI Act and prior

¹⁵⁸ *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749, 1756 (2014).

¹⁵⁹ *Id* at 1756.

¹⁶⁰ W. Keith Robinson, “Awarding Attorney Fees and Deterring ‘Patent Trolls’”, *Lewis & Clark Law Review*, Vol. 20:1., at 292.

¹⁶¹ *eEltech Sys. Corp. v. PPG Indus., Inc.*, 903 F.2d 805, 810 (Fed. Cir. 1990).

¹⁶² *Loctite Corp v. Fel-Pro, Inc.*, 667 F.2d 577, 584-85 (7th Cir. 1981).

¹⁶³ *Bianco v. Globus Med., Inc.*, No. 2:12-CV-00147-WCB, 2014 WL 1904228, at *2-3 (E.D. Tex. May 12, 2014).

cases which have been decided by the court. Each case plays a critical role in limiting parts of the patent litigation process which makes it more difficult for trolls to file frivolous lawsuits for a financial gain. In an effort to preserve the property rights of patent holders it is therefore critical for further reform to be implemented. The prospective pieces of legislation should be precise to ensure that their purpose is to limit trolls from flooding the patent litigation system and to continue to preserve a patent holders' property right. Without a patent system, there is less economic incentive to invent and innovation would come to a standstill. The preservation of innovation must remain paramount when thinking of prospective avenues of reform when it comes to patents and patent trolls. Therefore, it would be impossible to remove the threat of patent trolls from the patent litigation system without jeopardizing an inventor's rights to their own innovation.

The trends post AIA Act-era have demonstrated that even with reform, it is difficult to slow down patent trolls and keep them out of the litigation system. There are various external factors such as emerging innovation by way of the infinite pockets of technology, as well as the low risk of PAE's which makes it difficult to stop these patent trolls without conservative reform. However, at what cost to an American citizen do these restrictions come? It would be unconstitutional to take away an American's property right for the sole purpose of stopping patent trolls. Patent trolling is a biased practice perpetuated by people who exploit legal operation for personal financial gain. The major obstacle at the legislative level is the lack of substantial examination when issuing patents. Ensuring that an application aligns with all the requirements, including paying for patent receipts, will reduce the number of patent trolls flooding the litigation system. Although prospective reform is a solution to limiting patent trolls, further research will be required to determine the efficacy of potential reform.

Bibliography

Primary sources

AIA § 3(a)(2)(i)(1)(A)-(B), 125 Stat.

Alice Corporation (Alice) v. CLS Bank. 134 S.Ct. 2347 (2014).

Bell Atlantic Corp. v. Twombly., 550 U.S. 544, 127 S. Ct. 1955 (2007).

Bianco v. Globus Med., Inc., No. 2:12-CV-00147-WCB, 2014 WL 1904228, at *2-3 (E.D. Tex. May 12, 2014).

Chien, Colleen V., Patent Assertion Entities, Presentation to the DOJ/FTC hearing on PAEs. Washington, DC, December 10, 2012. "Patent Assertion Entities, Presentation to the DOJ/FTC hearing on PAEs." Social Science Research Network. December 10, 2012.

Commil USA, LLC v. Cisco Systems, Inc., 135 S. Ct. 1920, 1932 (2015).

eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 126 S. Ct. 1837 (2006).

eEltech Sys. Corp. v. PPG Indus., Inc., 903 F.2d 805, 810 (Fed. Cir. 1990).

GPNE Corp. v. Apple Inc., No. 12-CV-02885 (N.D. Cal. June 24, 2014), <http://www.law360.com/articles/552392/judge-koh-barsapple-from-calling-rival-patent-troll-at-trial>.

Hynix Semiconductor Inc. v. Rambus Inc., (N.D. Cal. Dec. 7, 2007).

Loctite Corp v. Fel-Pro, Inc., 667 F.2d 577, 584-85 (7th Cir. 1981).

Octane Fitness, LLC v. ICON Health & Fitness, Inc., 134 S. Ct. 1749, 1756 (2014).

"Patent Assertion Entities (PAE) Study." Federal Trade Commission, September 17, 2020. <https://www.ftc.gov/policy/studies>.

Research Corp v. Microsoft Corp., No. 10-1037 (Fed. Cir. 2010).

Samsung Electronics Co. v. Apple Inc., 137 S. Ct. 429 (2016).

35 U.S.C. § 285 (2012).

Secondary sources

Abramson, Bruce D. "Trolling around the patent-antitrust interface: The roots of the NPE challenge and the role of antitrust in patent reform." *Antitrust Bulletin* 59, no. 2.

- Bányai, Dorottya. "Legal responses of the United States of America to patent trolls—A step into the right direction?." (2015).
- Barry, Chris, Et Al., 2013 Patent Litigation Study: Big Cases Make Headlines, While Patent Cases Proliferate (2013).
- Beauchamp, Christopher. "The First Patent Litigation Explosion." *The Yale Law Journal* 125, no. 4 (February 2016). <https://doi.org/https://www.yalelawjournal.org/article/the-first-patent-litigation-explosion>.
- Bessen, James E., Michael J. Meurer, and Jennifer Laurissa Ford. "The Private and Social Costs of Patent Trolls." Boston University School of Law, Law, and Economics Research Paper No. 11- 45, September 19, 2011.
- Bradford, Benjamin J., and Durkin, Sandra J., "A Proposal for Mandatory Patent Reexaminations," https://strategichealthlaw.com/wp-content/uploads/2019/02/Idea_proposal.pdf.
- "Can Patent Trolls Impact Covid-19 Testing and Treatment?", (The Dobrusin Law Firm, April 23, 2020), <https://www.patentco.com/can-patent-trolls-impact-covid-19-testing-and-treatment/>.
- "Change In Marking Statute Would Curtail Troll Litigation." *Law 360*, March 3, 2015. <https://www.wsgr.com/a/web/43/elson-0315.pdf>.
- Choi, Jay Pil, and Heiko Gerlach. "A model of patent trolls." *International Economic Review* 59, no. 4 (2018).
- Cohen, Lauren, Umit G. Gurun, and Scott Duke Kominers. "Patent trolls: Evidence from targeted firms." *Management Science* 65, no. 12 (2019).
- Cohen, Lauren, Umit G. Gurun, and Scott Duke Kominers. "The Growing Problem of Patent Trolling." *Science* 352, no. 6285 (2016): 521–22. <http://www.jstor.org/stable/24744845>.
- Cohen, Lauren, Golden, John M., Umit, Gurun G., and Scott Duke Kominers, "'Troll' Check? A Proposal For Administrative Review of Patent Litigation", <https://www.bu.edu/bulawreview/files/2017/10/GOLDEN.pdf>
- Davis, Kent W., The International View of Attorney Fees in Civil Suits: Why Is the United States the "Odd Man Out" in How It Pays Its Lawyers?, 16 ARIZ. J. INTI & COMP L. 361, 403 (1999).
- Davoudi, S. M. M., Fartash, K., Zakirova, V. G., Belyalova, A. M., Kurbanov, R. A., Boiarchuk, A. V., & Sizova, Z. M. (2018). Testing the Mediating Role of Open Innovation on the Relationship between Intellectual Property Rights and Organizational Performance: A Case of

Science and Technology Park. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(4).

Description of patent types. Accessed December 5, 2021.

<https://www.uspto.gov/web/offices/ac/ido/oeip/taf/data/patdesc.htm>.

Economist. 2015. 'Patent Trolls: Why no one likes them,'

<http://www.economist.com/news/business-and-finance/21645604>.

Evenson, R. E. (2019). *Intellectual property rights, R&D, inventions, technology purchase, and piracy in economic development: An international comparative study* (pp. 325-355).

Routledge.

Federal Trade Commission (FTC). "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition." March 2011.

Gryphon, Marie, "Manhattan Inst. For Policy Research, Greater Justice, Lower Cost: How A 'Loser Pays' Rule Would Improve the American Legal System."

Gugliuzza, Paul R. "Patent trolls and preemption." *Va. L. Rev.* 101 (2015).

Haber, Stephen H., and Naomi R. Lamoreaux. *The Battle Over Patents: History and the Politics of Innovation*. No. w28774. National Bureau of Economic Research, 2021.

Harris, Robert G. "Patent Assertion Entities & Privateers: Economic Harms to Innovation and Competition." *The Antitrust Bulletin* 59, no. 2 (2014).

Johnson, Vincent R., "Minimizing the Costs of Patent Trolling." *UCLA Journal of Law & Technology* 18.

Karakashian, Sona. "A software patent war: The effects of patent trolls on startup companies, innovation, and entrepreneurship." *Hastings Bus. LJ* 11 (2015).

Kesan, Jay P., Carrots, a and Sticks to Create a Better Patent System, 17 BERKELEY TECH. L.J. 763, 787 (2002); Singleton, *supra* note 238.

Kesan, Jay P. "Patent trolls." *Research Handbook on the Economics of Intellectual Property Law* (2019).

Khan, Zorina B. "Trolls and Other Patent Inventions: Economic History and The Patent Controversy in The Twenty-First Century." *George Mason Law Review* 21, no. 4 (2014).

Krishnakumar, Tarun, "All Your Intellectual Property Are Belong to Us: How Copyright and Patent Trolls Are Questioning the Jurisprudential Foundations of Treating Intellectual Property as Property," *Indian Journal of Intellectual Property Law* 9 (2018).

- Ledford, Heidi. "Congress seeks to quash patent trolls." *Nature News* 521, no. 7552 (2015).
- Lee, Edward, "Patent Trolls: Moral Panics, Motions in Limine, and Patent Reform," 19 STAN.TECH.K.REV.113 (2015).
- Locke, John., *Two Treatises of Government*, 1690, Section 27.
- Mansfield, E. (2019). Intellectual property, technology, and economic growth. In *Intellectual Property Rights in Science, Technology, and Economic Performance*.
- Mayergoyz, Anna, "Lessons from Europe on How to Tame U.S. Patent Trolls.," *Cornell International Law Journal*, Vol. 42.
- McDonough, James F III. "The Myth of the Patent Troll: An Alternative View of The Function of Patent Dealers is in an Idea Economy+." *Emory Law Journal* 56, (January 1, 2006).
- Mossoff, Adam. 2015. 'Repetition of Junk Science & Epithets Does Not Make Them True,' IPWatchDog, <http://www.ipwatchdog.com/2015/11/19/repetition-of-make-them-true/id=63302/>.
- Note: Pay the Troll Toll: The Patent Troll Model is Fundamentally at Odds with the Patent System's Goals of Innovation and Competition, 84 *Fordham L. Rev.* 1153.
- Rep. *Patent Assertion and U.S. Innovation*. President's Council of Economic Advisers, the National Economic Council, and the Office of Science & Technology Policy, June 2013. https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf.
- Robinson, W. Keith., "Awarding Attorney Fees and Deterring 'Patent Trolls'." *Lewis & Clark Law Review*, Vol. 20:1.
- Rogers, D. E. (2017, October 16). *Fighting Patent Trolls*. Retrieved November 3, 2021, from https://www.swlaw.com/assets/pdf/news/2017/10/16/1013_FightingPatentTrolls_.pdf.
- Roh, T., Lee, K., & Yang, J. Y. (2021). How do intellectual property rights and government support drive a firm's green innovation? The mediating role of open innovation. *Journal of Cleaner Production*, 317, 128422.
- Rosenblatt, Joel, Apple Promptly Calls Out "Patent Troll" After Trial Win, BLOOMBERG BUSINESS, Oct. 24, 2014, <http://www.bloomberg.com/news/articles/2014-10-22/apple-says-it-defeated-gpne-patent-infringement-case-at-trial>.
- Sandburg, Brenda, *You May Not Have a Choice. Trolling for Dollars, Patent Enforcers are Scaring Corporate America, and They are Getting Rich – Very Rich-Doing It*, RECORDER, July 30, 2001.

Schot, Johan, and W. Edward Steinmueller. "Three frames for innovation policy: R&D, systems of innovation and transformative change." *Research Policy* 47, no. 9 (2018).

Student Note: A Software Patent War: The Effects of Patent Trolls on Startup Companies, Innovation, and Entrepreneurship, 11 *Hastings Bus. L.J.* 119.

Tagliente, Daniel A., "Shooting Blanks: The Ineffectiveness of the Executive Branch's Entrance into the Great Patent Troll Hunt." *Seton Hall Law Review* 45, no. 1 (January 2015).

The Dobrusin Law Firm | Wednesday, April 22, 2020. "Can Patent Trolls Impact Covid-19 Testing and Treatment?" The Dobrusin Law Firm, April 23, 2020.
<https://www.patentco.com/can-patent-trolls-impact-covid-19-testing-and-treatment/>.

Vainberg, Vlad., "When Should Discovery Come with a Bill? Assessing Cost Shifting for Electronic Discovery". <https://www.law.upenn.edu/live/files/43-vainberg158upalrev15232010pdf>

Womack, Brian, and Zachary Tracer. "Google to Buy Motorola Mobility for \$12.5 Billion to Gain Wireless Patents." *Bloomberg*. August 15, 2011.