9-5-2013

Patent Assertion and Startup Innovation

Colleen Chien
Santa Clara University School of Law, colleenchien@gmail.com

New America Foundation

OPEN TECHNOLOGY INSTITUTE

Patent Assertion and Startup Innovation

By Colleen V. Chien
Associate Professor, Santa Clara University School of Law
September 2013

Executive Summary

Lawmakers are contemplating making changes to patent law and procedure to curb abusive litigation and demand practices. One of the most important constituents for them to keep in mind is small, innovative companies. The impact of the patent system on startups, and in particular high-tech startups, is crucial because they are a key source of new jobs and innovation. According to Engine and the Kauffman Foundation, "Though they start lean, new high-tech companies grow rapidly in the early years, adding thousands of jobs along the way."[1]

Startups also have a unique perspective on patent assertion, with the potential to be helped as well as harmed by entities that assert patents as a business, referred to in this report interchangeably as patent assertion entities (PAEs) and non-practicing entities (NPEs).[2] Companies with less than $10M in revenue comprise 55% of unique defendants to PAE suits. Startups, with their slim margins, focused operations, and high rates of innovation, can arguably least afford to engage in expensive litigation to defend against patent claims or stop incumbents from copying their innovations. But they can also gain from being able to monetize their patents through NPEs.[3]

The first part of this report describes the experiences of startups with patent assertion based on surveys of about 300 venture capitalists and venture-backed startups conducted in 2013. It also reports on companion surveys of patent litigators and large-company patent counsel in 2013, and a non-random, non-representative survey of startups conducted in 2012 for a total of over 1,100 respondents. Due to the difficulty of reaching a representative population, these results are not generalizable to all start-ups and startup investors, but instead serve as a window into their experiences and views. The second part of the report describes existing and potential legislative, judicial, and market-based responses and recommends how they may be tailored to better meet the needs of startups and resource-poor companies.

According to survey responses, patents for novel inventions play a generally positive and at times crucial role for startups. They help to transfer technology, enable investment, and improve exits, particularly in bio/pharma industries. But patent assertions by NPEs, which at times hit startups when they are least able to fight them—on the eve of a funding or acquisition event, or, 40% of the time, in the context of the startups' customers—can have significant and at times devastating impacts on companies. Though partnering with NPEs to monetize patents can be beneficial to companies as well, the benefits do not appear to offset the harms, according to survey responses and VC interviewees whose companies had been sold to and been sued by NPEs.[4] Furthermore, many survey respondents do not find these to be socially productive assertions—but rather on the basis of patents that, though they may be valid, are viewed as frivolous or overbroad.

Though the risks associated with patents were described as feeling "unbounded," startups are routinely expected to absorb these risks in their dealings with acquirers, investors, and customers. Overall, these assertions have added friction to technology transactions, reduced the value of pursued startups, and triggered large indemnities, according to study subjects.

More specifically, we found:

Finding 1: Based on survey responses, 75% of surveyed venture capitalists (VCs) and 20% of venture-backed startups with patent experience have been impacted by an NPE demand; nearly 90% of all tech VCs have been impacted. The demand was based on the startup's adoption of another's technology 40% of the time. Low quality and software patents were identified as problematic.

Finding 2: Although NPE assertions are perceived as motivated primarily by money, respondents reported routinely experiencing non-financial consequences including delays in hiring, meeting milestones, and business line pivots and exits.

Finding 3: Most VC respondents believe patents are important for innovation. An estimated 5% of startups have sold their patents to NPEs, experiencing positive benefits from doing so. However, most surveyed VCs, including the small number whose companies have sold to NPEs, believe that NPEs are harmful for innovation.

Finding 4: Startup concerns with patent enforcement go beyond NPEs and extend to the disadvantages startups suffer relative to larger incumbents as a result of poor patent quality, high costs, and delays associated with the patent system, survey respondents told us. The inability of startups to defend their own patents and suits brought by "patent predators," larger companies that sue with anti-competitive motives, also presented specific concerns.

To ameliorate the harms of patent assertion on small companies, we recommend several interventions, keeping in mind the special needs of startups, who, with their fewer resources, less time, and greater focus on building the business, are at a relative disadvantage when patent processes are expensive, slow, or require deep patent expertise (or "patent game"-playing skills). These include:

Recommendation 1: Fully fund the PTO and its quality initiatives including tightening functional claiming and expand low-cost access to the PTO's transitional program and other forms of post-grant review by reducing fees for small and micro entities and supporting and prioritizing collaborative challenges to patents asserted against large numbers of defendants, particularly by downstream users and small entities.

Recommendation 2: Make patent cases about the merits, not about who can outlast or outspend the other side, by permitting more discretion in awarding fees and costs for non-core discovery and promoting uniformity and early dispositive rulings, for example by requiring the Patent Pilot Program to implement and measure the impact of best practices.

Recommendation 3: Make patent risks more manageable for startups by requiring demand letters and complaints to disclose the real-party in interest, claim charts, related litigations and reviews, and licenses that could cover the target.

Recommendation 4: Make startups less attractive targets by limiting the liability of downstream users and the precedential value of the settlements signed by small companies.

The report concludes with a section that covers existing private and civil sector responses and tactics to help small companies in their own dealings with patent assertions, based on extensive research and interviews with defense service providers and experts in dealing with and bringing patent assertions against small companies. Appendix C-1 contains a listing of 17 defense service providers, their offerings, target client profile, and how to engage them. Appendix C-2 describes and provides examples of a variety of different tactics for defending against an NPE demand, including "fighting back," "laying low," and publicity, as well as comments on their effectiveness by experienced in-house, company, and public interest lawyers.

Finally, we include the stories and advice of five individuals—two investors, two startup executives, and one public interest lawyer—who have experienced patent litigation first-hand. Their responses to assertion are varied—one found a market-based solution—"partnering with a troll," others saw their companies devalued and decimated by assertions, and another presents the perspective of his clients who cannot afford to use any of the patent system's protection mechanisms. Through them, the judges and policymakers that form the patent system can get a glimpse of how the patent system is being experienced in the world, and how it may be improved.

About the Author

Professor Colleen Chien is nationally known for her research and publications surrounding domestic and international patent law and policy issues. She has testified before Congress and the DOJ/FTC/PTO on patent issues, frequently lectures at national law conferences and has published several in-depth empirical studies, including of patent litigation, patent amicus briefs, compulsory licensing, patent-assertion entities (PAEs), and the secondary market for patents. She is an expert on the International Trade Commission (ITC), a topic on which she has authored several articles and co-authors a practice guide, The Section 337 Patent Investigation Management Guide.

Before joining the Santa Clara University School of Law faculty in 2007, Professor Chien practiced law at Fenwick & West LLP in San Francisco, as an associate and then Special Counsel, and was a Fellow at the Stanford Center for Law and the Biosciences. She also did stints as a strategy consultant at Dean and Company, a spacecraft engineer at NASA/Jet Propulsion Lab, and an investigative journalist at the Philippine Center for Investigative Journalism (as a Fulbright Scholar). Professor Chien was educated at Stanford and Berkeley and lives in Northern California with her husband and two sons. Her writings are posted to colleenchien.com and publicized @colleen_chien.

In 2013 Professor Chien was named one of the top 50 most influential people in intellectual property worldwide by Managing Intellectual Property Magazine, the inaugural Eric Yamamoto Emerging Scholar, and one of Silicon Valley's "Women of Influence."

Acknowledgments

Thanks to Steve Vicinanza, Jon Potter, Michael Risch, David Schwartz, Leora Lawton, Kate Endress, Ann Fort, Alan Schoenbaum, Lee Cheng, Mary Stich, Ron Lawton, Nicole Shanahan, Christopher Tosetti, Jim Yoon, Stefani Shanberg, Julie Samuels, Edward Goodman, Dane Stangler, Dan Ravicher, Marvin Ammori, Jennifer Dowling, Dirk Calcoen, Jason Mendelson, Brad Feld, Coryn Millslagle, John Neal, Erich Spangenberg, Chris Reohr, PatentFreedom, Seth Besse, and the many VCs and startups who spoke to me confidentially about their experiences with the patent system. Thanks as well to Benjamin Lennett, Hibah Hussain, Danielle Kehl, Patrick Lucey, and Nick Russo, the staff at the New America Foundation's Open Technology Institute. Special thanks to Franklin Pitcher Johnson, founder of Asset Management Company of Palo Alto, a Silicon Valley venture capitalist for 51 years, who has or through funds led by him, invested in the early stages of more than 200 companies, among them Amgen, Tandem Computers (now Hewlett Packard), Boole and Babbage (now BMC Software) and IDEC (now Biogen IDEC), and Brad Burnham, a managing partner at Union Square Ventures (USV), an early stage venture capital firm based in New York City focused on young companies that use information technology in innovative ways to create high growth business opportunities.

Table of Contents

Table of Contents (Continued)

Findings

BACKGROUND

In order to formulate effective policymaking about patent assertion, it is important to understand its prevalence, operations, and impacts. Recognizing this, Congress ordered a study of patent assertions brought by non-practicing entities (NPEs), also referred to as patent assertion entities (PAEs),[5] as part of the America Invents Act.[6] Attempts to quantify patent assertion have focused on the prevalence of suits as a proportion of all patent litigations,[7] the financial impact of NPEs on public and surveyed companies,[8] the impact of NPEs on new product introduction,[9] consumers, and innovation, and the prevalence of software patents among asserted patents.[10]

While these reports have drawn primarily upon operational company data about the patent system, there have been few efforts to systematically collect company-level data about the impact on operations of patent assertion. This creates the risk that the policy making will be overly informed by anecdotal reports about the impacts of patent assertion, both positive[11] and negative.[12]

In addition to the normal barriers that limit company-level data collection,[13] including trade secrecy and the need to keep operational and financial information confidential, there are a number of obstacles to companies publicly "telling their story." Patent "trolling" is disfavored by the popular media and persons affiliated with certain well-known "trolls" have reported receiving threats.[14] As a result, companies that benefit from patent assertion may be reluctant to speak publicly about their experiences.[15]

Those who have been on the receiving end of patent assertions face other barriers. When an assertion is resolved, non-disclosure agreements are typically signed.[16] Speaking publicly about an ongoing dispute is unlikely to draw favor from the court. Those who have spoken negatively about a patent troll in public believe they have been sued as a result of doing so.[17] Stigma can make it difficult for companies to share their experiences.[18] There may be concerns regarding clients and the sharing of sensitive company information.[19]

One of the most important constituents in the patent system are startups, as both generators of innovation and targets of patent suits. Startups are less likely to have the powerful lobbies and deep experience with the patent system than the large companies that typically front patent debates. But what happens to startups matters, and in particular high-tech startups. According to Engine and the Kauffman Foundation, "high-tech startups are a key driver of job creation throughout the United States."[20] Specifically, the high-tech sector has experienced a stronger share of new firm formation as compared to the rest of the private sector during the last three decades.[21]

For this reason, this report focuses on the experience of startups with the patent system, as recounted by venture capitalists and others that invest in and oversee portfolios of startup companies and venture-backed startups themselves. While only a small fraction of companies receive VC funding every year, venture backed companies are a large source of employment, innovation, and new wealth.[22]

To access startup and venture capital experience and opinions about patent assertion, I used anonymous, web-based surveys and conducted phone and email interviews with approximately 50 law-firm lawyers, entrepreneurs, venture capitalists, and large company lawyers. This report builds upon an existing survey of startups I conducted in 2012.[23] That survey generated 223 respondents. Seventy-nine had received a patent assertion demand and several had monetized their patents through patent assertion entities (PAEs). While containing a number of suggestive findings, the survey (referred to throughout the report as 'Chien 2012') was of a non-random, non-probability sample, distributed primarily openly to a universe of readers of technology and law and public interest/academic blogs that had to "opt-in" in order to take the survey.

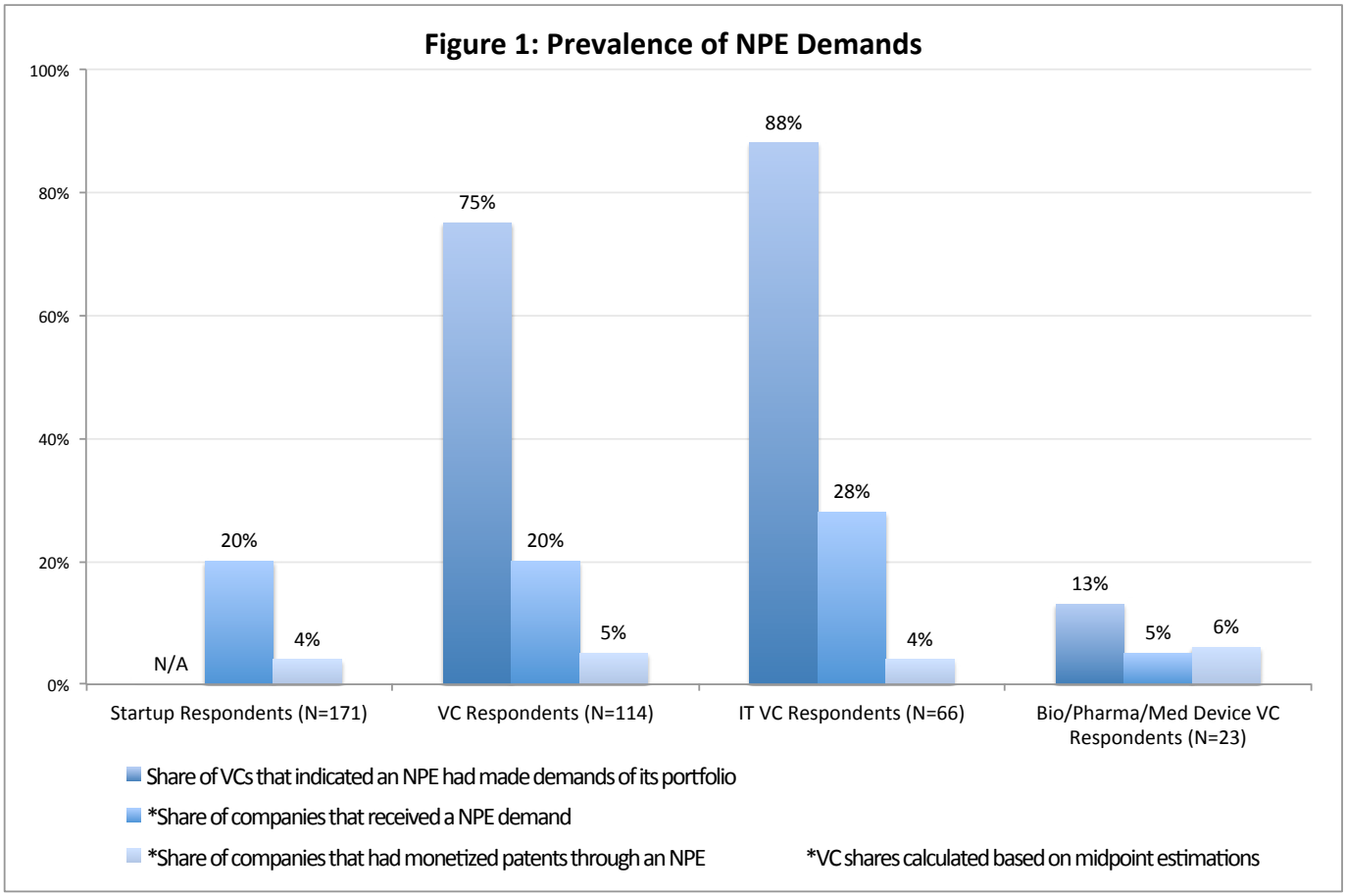
This report draws from a new survey distributed in 2013 primarily to a closed list of VC-backed startup companies and investors in startups generated from the Venture Xpert database and a comprehensive national list of venture capitalists, soliciting their feedback on the patent system and patent assertion. Although referred to throughout this report as a single "survey," one of two versions of the survey was provided to each respondent depending on whether they self-identified as working for a company or investing in companies. To create a more robust understanding of patent litigation dynamics, the report also draws upon companion surveys that were sent to legal counsel in large companies and in patent litigation law firms.

As detailed in the Appendix A (Methodology), the respondent population included 307 venture capitalist or investors ("VCs") and startups. Thirty-five of the startups had received a demand. The surveyed VC population skewed from the national average towards early stage investors and investors in bio/pharma and hardware/semiconductors. Of the startup participants, 73% were founders/executives, 75% of companies reported revenue under $10M, and 93% reported fewer than 500 employees. Due to a low response rate, the results cannot be used to describe all companies. Still, the numeric results in combination with the open-ended comments offered by respondents allow us to provide a rich analysis of how venture-backed companies are experiencing the patent system.

FINDINGS

Finding 1. Based on survey responses, about 75% of venture capitalists and 20% of venture-backed startups with patent experience have been impacted by an NPE demand; nearly 90% of tech VCs have been impacted. The demand was based on the startup's adoption of another's technology 40% of the time. Survey takers identified low quality and software patents as problematic.

One objective of this study was to document how widespread the impacts of NPEs are among productive, innovative companies. Studies estimate the proportion



of NPE lawsuits as a percentage of all patent lawsuits filed recently to range from 45%[24] to around 60%.[25] The share of unique defendants to PAE suits that have annual revenues of $10M or less has been estimated to be around 55%.[26] However, it is not clear what proportion of all companies is actually being impacted.[27] Patent litigants are not representative of the general population of companies, but certain policy interventions could have broad impact.

We asked VCs to estimate what percentage of their portfolio companies, if any, had received NPE demands, and asked startup executives to indicate whether they had received any NPE demands. 75% of VCs (N=114) indicated that at least some share of their portfolios was impacted. The share ranged significantly by industry—close to 90% of technology VCs (N=66), and as few as 13% of bio/pharma or medical device VCs (N=23) reported having an affected portfolio. As reflected in the surveyed population, technology investing has represented the bulk of venture capital investment for some time.[28]

Based on taking midpoints from ranges that VCs gave, we estimated the share of impacted companies to be 20% (N=114). 20% was also the number reported among the surveyed startup population (N=171).

Opportunistic Assertions

VC respondents described several patterns of assertion. Often the timing seemed to be dictated by an event in the company's development—publicity/success, an M&A or funding event, or the company's IPO.[29] The strategy depended on the company's profile—for example "when a Series A or Series B is announced, this puts the company 'on the radar' of NPEs," said one VC respondent. The success of the company exposes the company to higher costs that are cheaper to avoid than pay: "If you are successful you will be sued since it is

"When faced with the second suit, we knew we would spend all this money again to go into this entire process, and we would pay all that money and be worse off. So even though we had won the first time, the second time it was much more attractive to settle—in the low seven figures—than to fight.

"We had run out of cash and were in talks with a Chinese company that didn't want to deal with it. All of the arguments—there's just no way in hell a jury will pay attention it. We had agreed on the price of the company. But then the buyer used the lawsuit as leverage to get the price down on the order of $10 million due to the outstanding lawsuit– 20% of the value of the company. They said this is [a] $20M liability which was bogus. But we didn't have the money to settle it."

-Laura Smith, Intellectual Property Manager
For full testimony, see Appendix B.

cheaper to settle than to fight. Once successful, you are sued with typical $500,000 - 1,000,000 type settlement even if the claim is completely worthless. Cost to defend is $1,500,000 plus, so we settle," said another.

But NPE demands were perceived to be triggered not only by success, but also vulnerability. According to one respondent: "the NPE saw the company had substantial funding, but not enough funding or revenue… to mount a prolonged legal defense. They saw we were vulnerable and eager to settle to avoid distraction and cost." Sometimes the objective is to sue not because there are funds, but because companies need funds: "publicity that our company was raising money prompted a troll to sue for patent infringement. They knew a company ha[d] to buy them off if it is likely to raise new capital. No investor wants to make a new investment in a company charged with patent infringement. It's a pretty common strategy." Having an outstanding patent lawsuit, even when the company's case is strong and the value of the technology is low, can cause a company to be devalued significantly, for example, by 20%.[30]

Whatever the specific motive, a number of NPE assertions appear to be strategically timed in order to obtain settlements. As the Managing Partner of a technology-focused private equity fund said in an interview, "NPEs have… become very adept at suing at opportune times—right as the sale of a company is announced for example—where parties are more likely to settle so as not to jeopardize a good transaction."

Industry-Wide Campaigns

Another category of demands—"blanket suits"—include a large number of targets. In a typical description, a company is "sued by an NPE, along with everyone else in their industry (biometrics)." Industry-wide suits may be staged: one respondent described a strategy in which his company was sued first, in order to "negotiate for the biggest royalty percentage possible without regard to the sales base to which the royalty was applied. They then appeared to use the 'percentage' settlement in negotiations with bigger competitors."[31] Industry-wide campaigns may include only letters, or letters and suits. References to "crazy insane broad patents" and "software patents" were cited in connection with these larger campaigns.

Customer or "End-User" Suits

The industry-wide campaigns that have generated the most numbers of defendants, however, fit a distinct profile—that the startup is being sued because of their use or implementation of another's technology, rather than the startup's own technology.[32] According to an analysis provided by PatentFreedom, which tracks NPE litigations, all 10 of the top patent litigation campaigns of the last three years, as measured by number of defendants, named users or implementers of a technology, and over 100 defendants.[33]

We asked startups who had received NPE demands to identify the basis for the demands they received. Forty

Table 1: The Basis for NPE Demands

Responses to the question: "If you've received a demand from an NPE, what was the basis for the demand?"

Demand Basis	Startup Respondents (that had rec'd a demand) (N=35)	Chien 2012 (N=79 Startup Respondents that had rec'd a demand)
Use or implementation of another's technology	40%	40%
Own technology	80%	66%

(Multiple answers allowed)

percent of the respondents (N=35) indicated that the basis for the demand was the startup's adoption of another's technology, a number that was consistent with the 2012 survey. The technology varied, with survey respondents reported being sued, for example, for their use of "printer [features]" and "Google Play."

Survey respondents also identified the liability startups face as suppliers of technology. Because growing revenue and customers is a critical milestone in a new company's development, startups are particularly sensitive to disruptions to their customer relationships. As one interviewee put it, "[NPEs] also have become adept at going after the customers of software companies—they threaten to sue your customers, who then pressure you to settle." A startup that might otherwise fight a demand cannot do so when being pressed to pay the NPE by its customers.

One prominent campaign, carried out by Lodsys, has targeted manufacturers, ecommerce companies, game developers, website-survey providers, owners of websites with interactive chat, and mobile app developers for implementing click-to-upgrade and in-app purchasing, through Apple iOS and Android development kits and APIs.[34] Another campaign, Geotag, has sued an estimated 544 defendants for having websites that feature locator functionality and organize the results geographically.[35] This functionality does not appear to be provided by a single provider (both Google and Microsoft services, for example, have been implicated) but instead implemented by web designers working for the defendants and others.

The Impact of Customer Assertions on Small Company Suppliers and Adopters of Technology

To understand the strategy behind and impact of customer campaigns on startups in the marketplace, we surveyed and interviewed outside and in-house counsel and purchasers and customers of technology products. Campaigns against customers have impacted startups as customers and suppliers in distinct ways.

As users of others' technology, startups are less likely to be protected from customer suits. Small companies are less likely to negotiate the indemnity terms of their purchase or have the "buying power" of larger customers to demand the protections of technology suppliers than are larger companies, interviewees said.

As suppliers, startups face risks when their customers are sued.[36] Customer suits may be motivated by practical obstacles to suing the supplier: either due to the way the patent is written, or because the supplier is overseas.[37] However, according to the lawyers we surveyed, the motivation is more often strategic: for example, to enlarge the base—"patentee [did] not sue… suppliers because they have wanted the damages base to be the $400/500 price of a phone rather than the $25 price of a chip or the price (sometimes zero) of the software," to "maximize the number of defendants to maximize the 'return,'" or "because [trolls]… seek easy money from defendants who have no idea how the technology works," said survey respondents.

Having a customer involved in the suit can change the dynamic and make it harder to resist settlement. As one venture capitalist said, "we got a nuisance suit from an NPE

Table 2: Top Patent Litigation Campaigns in the Last 3 Years

Data Source: PatentFreedom

Campaign (Plaintiff)	Defendant Count*	Technology	Estimated % of Defendants That Used or Implemented the Technology
GeoTag Inc	544	Website geolocator	100%
PJC Logistics LLC	517	Vehicle tracking	85-90%
Select Retrieval LLC	223	Data display	100%
Lodsys LLC	192	Customer interactive features	100%
LVL Patent Group LLC	158	Database	100%
Webvention LLC	201	Interactive online environment	100%
Blue Spike LLC	224	Digital fingerprinting	~50%
Unified Messaging Solutions LLC	183	Email	~90-95%
MacroSolve Inc	100	Electronic forms	70%
DietGoal Innovations LLC	109	Diet software	100%

(Methodology described in Appendix D)

*Includes administrative duplicates.

who actually sued our clients and given the disruption to our business we choose to settle rather than pay the expense to fight… in the… [Eastern District of Texas]. Spending in the millions to initially fight then settle reduced our hiring and development of new products. …[W]ith expenses already approaching $1 million and nervous customers we had no choice [but to settle]."

The leverage of customers and the threat of suit can harm the startup supplier, even if no suit is actually filed. As a veteran litigator put it, "small companies lose two ways. First, large customers force the suppliers into indemnification agreements that impose uncapped exposure on the supplier for a relatively small amount of revenue. Second, large customers can force suppliers to take over a defense and indemnification obligations even if there is no obligation. The small supplier cannot afford to upset their large customers. As a result, these companies can face legal bills (regardless of merits) that greatly exceed the revenue that they received from selling product to the big customer."

Even when the supplier covers its customer's costs, the incident may cause irreparable harm to the relationship: according to one VC respondent, "[the NPE suit] cost us standing with a large customer who had to deal with the same situation. We had indemnified, but that wasn't good enough…[given] the lost time, lost confidence and the uncertainty." At the supplier selection stage, the perception that a smaller company may not be financially able to stand behind its product has also impacted purchasing decisions—causing customers to drop the technology[38] or choose a larger supplier due to doubts about the small supplier's ability to indemnify them in the event of loss. One interviewee, legal counsel at a large bank, said, "If I have big company on one

hand, and small company on the other hand—this is real—we've gone with the bigger provider because the indemnity would wipe… [the small company] out."

Low Quality Patents

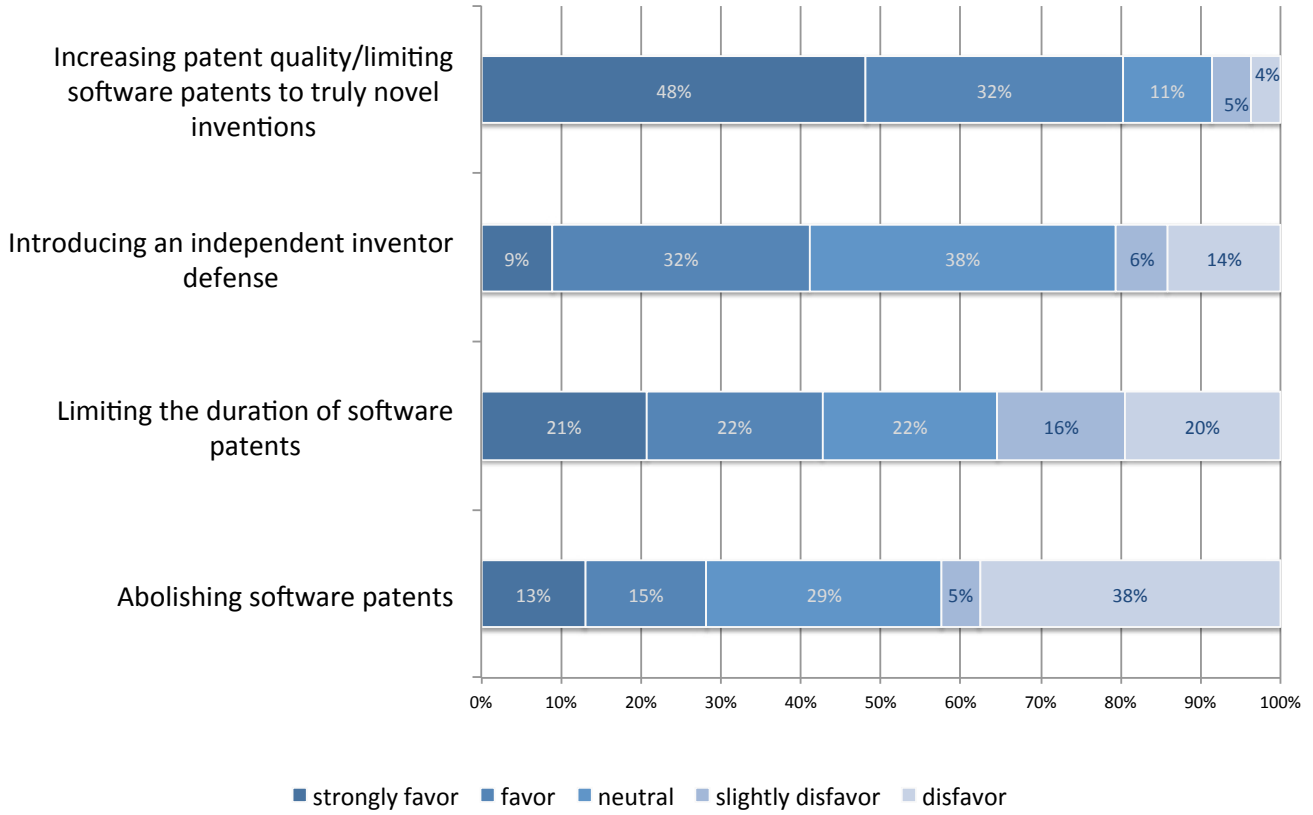
Many responses identified low patent quality, specifically software and business methods patents, as problematic. As one startup respondent put it, "[i]n the case of software patents, not only is there significant prior art in a large percentage of cases, but most software patents are not novel: someone had a need to do something, and created it. That's how software works. These facts are not helpful when faced with an NPE unless you have the resources to wage a legal battle to bring the facts to light." Even if seemingly straightforward from a technical standpoint, resolving a software patent demand was described as "expensive from a legal standpoint." A common sentiment was that "the biggest problem with patents is in the software world, where many obvious things are patented. This makes the whole system weaker."

Poor patent quality harms startups and small companies, said respondents, when "[l]arge companies use their arsenal of patents to file frivolous lawsuits," "[d]eserving patents get same timeline as undeserving ones," and "[obvious] [s]oftware patents hurt innovation and destroy jobs," in the words of respondents.

But if the problem is that it is "[w]ay too easy to get a patent," what is the solution? A significant minority of survey respondents mentioned abolishing software or business method patents or shortening the software patent life to reflect the innovation cycle. Several other responses endorsed doing so if the "problem of frivolous litigation" could not be resolved.

Figure 2: VC Opinions on Software Patent Reform (N=87)

Responses to the question: "Lawmakers are considering fixes to regulate software patents. To what extent do you favor the following?"



But these proposals, which would dramatically change the current patent system,[39] had as many and, in some cases, more detractors than supporters among survey-takers. For example, abolishing software patents was strongly favored by about 13% of surveyed VCs but disfavored by 38% of them (N=87). While opinions were nearly evenly split on the question of whether to shorten patent term, nearly 70% favored or strongly favored limiting software to truly novel inventions (Fig. 2).

Finding 2. Although patent "troll" assertions are perceived as motivated primarily by money, respondents reported routinely experiencing non-financial consequences including delays in hiring, meeting milestones, and business line pivots and exits.

In this survey, we directly asked venture capitalists and startups to describe the impacts on their companies when they received NPE assertions. We compared these results with the findings of Chien 2012,[40] which also asked survey participants about NPE impacts (Fig. 3). The level of agreement varied by the type of impact. However, across them, a significant portion of respondents—close to 50% in each group—reported at least one significant operational impact from the assertions: a delay in hiring or other milestone, change in product, business pivot, exit, or loss of customers or revenue (Fig. 3).

Perception of Unbounded Risk

While starting and running a company carries many different risks, patent demands compare unfavorably to others, according to respondents. A typical sentiment described dealing with a demand as a "very worrying, stressful and soul destroying process." Part of the problem is that the exposure is not known to the parties up front. One interviewee, an entrepreneur who has encountered multiple demands from NPEs, said, "You feel like you missed something. The risks feel unbounded. You could lose the company. You just don't know." Said a founder, "[p]atents are one of the most painful parts of running a startup, and that's saying something."

Impacts Flow from Costs of Defense, Not Loss on the Merits of a Patent Case

The impacts of patent assertion are often experienced regardless of whether or not the startup ultimately prevails on the merits. Patent law is hard, requiring founders and others at a company that gets a demand to spend time and energy finding counsel and getting

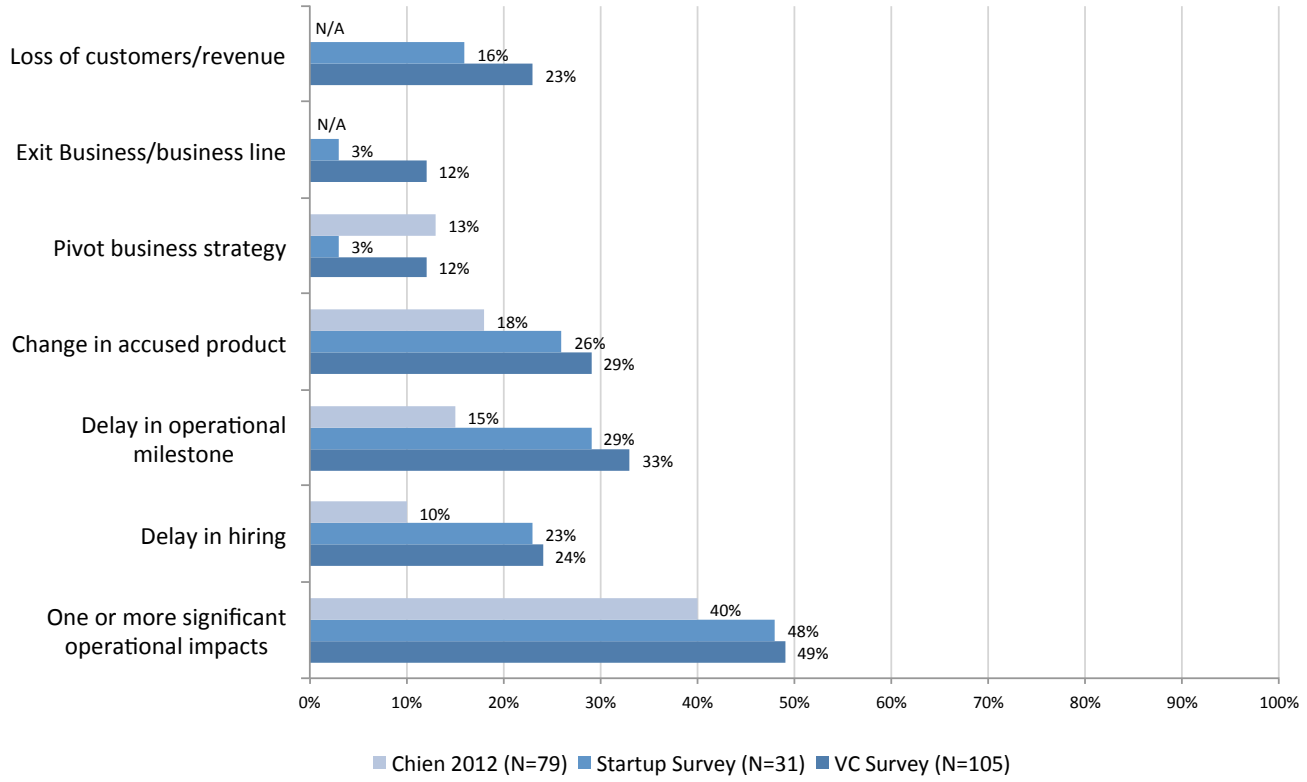
"[O]ne company that is not entirely out of business, but is a tiny shell of its former self as a resultof being subjected to two patent suits in rapid succession by two different entities, neither of which would fit the definition of an NPE or a PAE. Both were failed entrants. Both were failed start-ups. The company was in the business of providing advertising services to major brands. The first suit that we were hit with was from a company that was not in the business of advertising services at all. It was a business-to-business company that was providing software, not services, to a completely different industry—law enforcement. There's no way we could have searched for that patent.

"The second suit we were hit with also was so completely different than what we were doing. That hurt when they sued us. But it didn't have a huge effect. They hadn't gotten an injunction.

"But then they went on to sue our customers. So these are people like American Express and American Airlines, and General Motors. The company in question employed 70 people. We were doing about $10 million in annual revenue, and when they sued our customers, this was a nice to have, not a need to have, it was a marketing program for the customers. The suits cut our revenue in half in three months. And so we couldn't sustain the 70 people that we had on the payroll, and so we had to cut the company in half."

-Brad Burnham, Union Square Ventures
For full testimony, see Appendix B.

Figure 3: Impacts of NPE Assertions



up to speed on the complex, technical, and intricate set of procedures and options available at the patent office and in patent courts. Considerable engineer time is required, for example, to file for patents and conduct depositions. Patent law is also expensive. According to one account, the company knew "within 24 hours of being sued" that it was not infringing. However, it incurred $3M in litigation expenses before the suit was dismissed.[41] Based on disclosures the company made during litigation, the patentee filed for and got new claims issued that it used to sue the company again. Even though it had won the first suit, the company decided to settle the claim rather than endure another lawsuit, by paying the NPE "in the low seven figures." The company was acquired in the interim, and the acquirer reduced the value of the company by 20% due to the suit.[42]

Impacts on Customer Relations, Transactions, and Operations

As described earlier, customer relations present particular vulnerabilities for small companies, as do times of fundraising or acquisition. With respect to the latter, several interviewees and respondents described the friction in the market that the heightened risk of patent lawsuits has created. In the words of one interviewee:

> [B]ecause acquisitions often trigger IP lawsuits from trolls (e.g., Oracle buys company X, so trolls immediately sue Oracle who has lots of money, claiming that company X's product infringes on their patent), acquirers are now putting huge indemnifications in the deals, up to the size of the whole deal in several cases we have seen. That means that the full value of the deal paid to the shareholders of Company X may have to be paid back if Oracle gets sued.

Or as another respondent put it, the motive of a suit may be that the "[p]atent troll [is] seeking to steal escrow money post acquisition of [a] portfolio company," seeming to suggest that the availability of the escrow money makes an acquired company more vulnerable to attack.

Even when these conditions are not present, the demands of a patent lawsuit have the potential to fundamentally alter a company's trajectory. As an interviewee noted, "one of the companies we are invested in was sued by a NPE. The company employs 170 people, many in high paid manufacturing jobs. The company develops and sells novel therapeutic medical devices to treat patients in pain. The suit by the NPE will result in the company changing its hiring and commercialization plans to deal with the suit," or worse "[the current suit] may put company out of business. Litigation is too expensive for such a small company."

> "Imagine you're a small startup business. You have three employees, including yourself, and you make about $500K per year in revenue. You get a patent infringement letter and are referred to some patent attorney who tells you they charge $500 an hour and will take at least 40 to 60 hours to review the matter. Then, if you want this attorney to respond to the patent holder, that's another 20 hours to write letters, do conference calls, etc. Before you know it, you've spent $50K and had to lay off one of your employees. All this time the patent holder is offering to settle for $20 to 40K. What are you going to do?"
>
> -Dan Ravicher, Executive Director of Public Patent Foundation
>
> For full testimony, see Appendix B.

Finding 3. According to survey responses, most VCs, particularly from pharma, biotech, and medical device industries, believe patents to be important to innovation and an estimated 5% of startups have sold their patents to NPEs, experiencing positive benefits from doing so. However, most VC respondents, including the small number whose companies have sold to NPEs, believe that NPEs are harmful for innovation.

The Positive Impacts of NPEs for Some Startups

The perceived negative impacts of patent assertions cannot be viewed in isolation from their potentially positive impacts. Trolls can benefit startups by providing a path to liquidity and enabling further investment and innovation. As litigation becomes more expensive, this path has become increasingly challenging. As one of VC survey respondents described, "patent enforcement has become financially undoable for small startup companies. NPEs provide an avenue to protect assets that would otherwise be lost due to financial constraints." While positive media accounts are relatively rare, it does not mean that NPEs do not produce any benefits.

Based on survey responses, an estimated 5% of startups are monetizing their patents. Sales can have significant positive impacts for companies that sell as the cash infusion brings more resources into the company.[44] A handful of VC respondents and company respondents provided information about how the proceeds of patent monetization were shared with them. According to the 10 responses, 60% were compensated through a lump-sum payment, and the remainder received a share of the proceeds ranging from 10% to 67%, sometimes in combination with an upfront payment.

This money can be used to create significant value for the startup. According to VC responses, startup patent monetizers using the money acquired through NPEs have been able to fund a business pivot (37%), pay for new hiring (20%), and help the company meet milestones (17%). (N=30) As one VC respondent said, the "company would have died without it—instead we grew." One startup founder described the benefit as enabling the company to protect against theft by competitors: "NPEs allow us to take on infringers who steal our work." If a company initiates a patent lawsuit, it risks a countersuit and harm to its reputation. However, by selling the patent to an NPE, the company can reap the benefits without the risk. Because the NPE does not make products, it is invulnerable to countersuit and other potential consequences of initiating suit.

Given the positive impacts associated with patent monetization, why aren't more companies doing it? Those who didn't sell as well as those who did provided

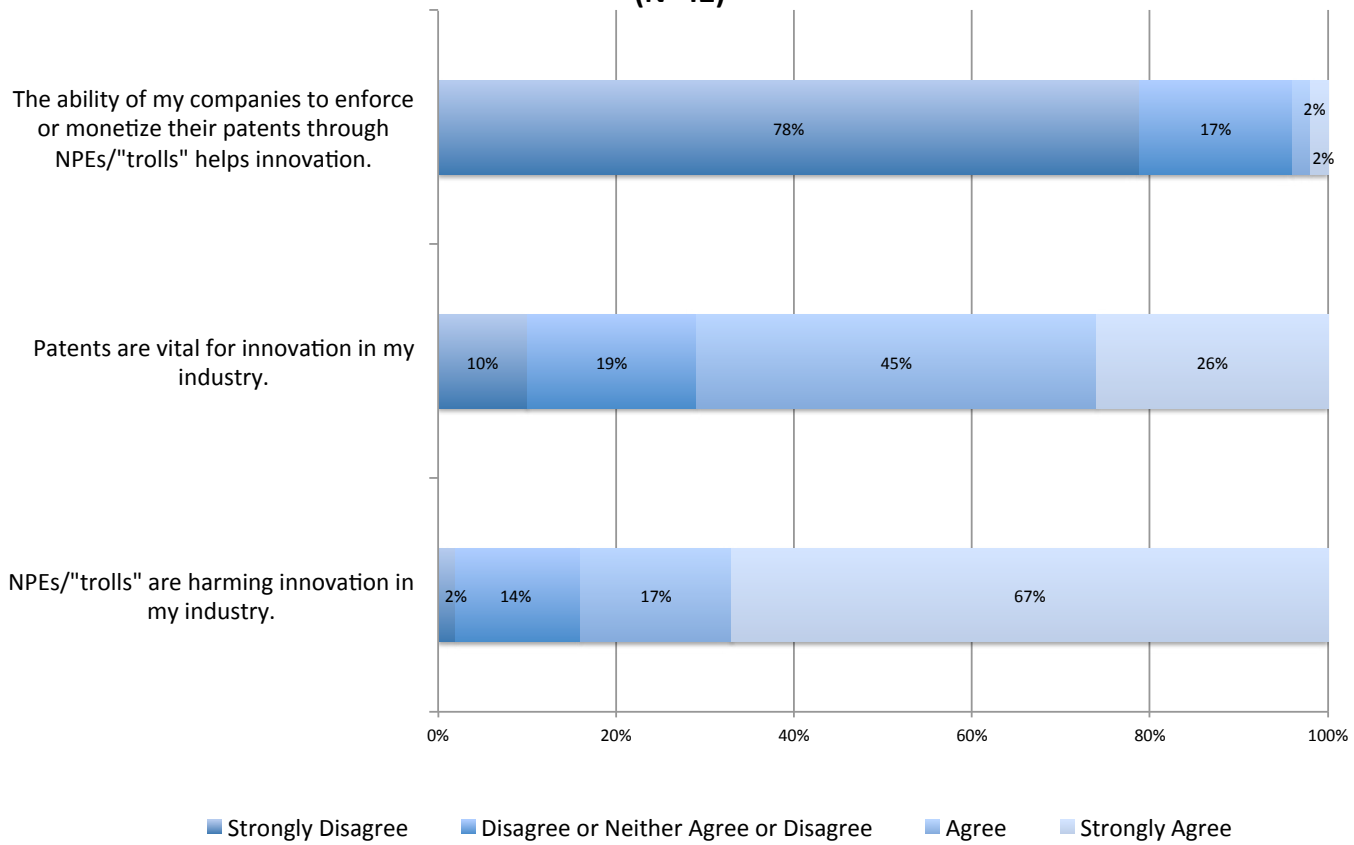
some answers. A number of respondents cited moral opposition to patenting and patent assertion: "workforce philosophically opposed [to patents]," "that's against our business ethic," "most startups are not eager to work with patent trolls." Others saw NPE monetization as a last resort: it was a "last ditch measure of desperation" or done as part of "liquidation"; one VC interviewee said that a seller, from a company in his portfolio, later "regretted it."[45]

Some respondents stressed that the NPE and startup business model were at cross-purposes: "we are in the business of developing products not monetizing patents." "[s]tartups are about execution;" "[w]e make money solving real world problems." "I believe in competition" was one startup executive's answer to the question "[i]f your company doesn't have patents, please indicate why." But practical obstacles also exist: startups have new patents, but NPEs disproportionately assert old patents that cover mature existing technologies.[46] Many startups do not have patents, due to the cost and long gestation, relative to product lifecycles[47] although VC respondents to this survey reported a high level of patenting among their companies (70%).[48] Growing, successful young companies often need their patents for defensive and signaling purposes and can't afford to sell them to a NPE, or can not afford the time or distraction from the main business to engage in licensing campaigns.

VC Opinions about the Impacts of Patents and Patent Assertion on Innovation

The focus of policy discussions should be the social calculus of patent assertion. According to some estimates, the private and social costs of dealing with NPE demands are in the tens of billions of dollars per

Figure 4: VC Views of Patents, NPEs, and Innovation (N=42)



"One suit hit the company at a very vulnerable time and almost put it out of business. The company learned a lot from these experiences and turned around and started licensing to NPEs. The first time they did it, they needed the money.

"But then—this is going to sound like prostitution—they realized this was an opportunity to bring more resources into the company... Since the first sale, they have periodically looked at their portfolio, and sold groups of patents to different litigation entities. Another lawsuit the company had was actually from a NPE that acquired a patent from another one of our portfolio companies. I learned this while in the due diligence process while investing in the company that sold. The person who sold that patent recently told me he regrets selling it, and the company has made a point of not pursuing any additional patent licensing.

"Net-net, I wish we had never been on either offense or defense. I think the company would have been better off had it never been sued for infringement and never sold patents. In fact, the benefit of selling patents—their own use of the system—didn't offset the pain of the lawsuits."

-Don Ellson, Private Equity Investor
For full testimony, see Appendix B.

year,[50] based on extrapolating from survey data, though the representativeness of the data points of those costs which should properly be classified as transfers to innovators is unknown.[51] If most of the money from patent assertion is going from large companies to small innovative ones, even with a high transaction cost, society might benefit through enhanced competition.

VCs are well-poised to understand these flows as both sources and users of technology. To understand how VCs viewed the impacts of patent assertion on innovation, we provided a separate module to about 73 VC survey-takers (about half of the surveyed population) who invest in a variety of technology companies spanning biotech to app development. The survey asked how much survey-takers agreed or disagreed with three assertions (Fig. 4):

1. The ability of my companies to enforce or monetize their patents through NPEs/"trolls" helps innovation.

2. Patents are vital for innovation in my industry.

3. The ability of my companies to enforce or monetize their patents through NPEs/"trolls" helps innovation.

The Positive Role of Patents

Out of 41 respondents, 71% agreed or strongly agreed that patents were vital for innovation in their industry (Fig. 4). While the number of total respondents was too few to break into industry cohorts, many of the positive comments came from the biotech, pharma, and medical device industries. Survey respondents reported, for example, that patents were "critical for raising money for product development," and "crucial for protecting the expensive innovations and product development investments that must be made to bring a novel effective product through the regulatory process." One investor described how "the company achieved a significant increase in acquisition price as a result of their patent portfolio." Another VC commented that patents were a necessity, enabling investment: "[it is] impossible to get financing without a good patent strategy, freedom to operate and good prospects of patentability."

Answers to a related question may partially explain the response: VCs reported that their companies were engaged with the patent system in multiple ways, through patent filings,[52] licensing in the patents of others to access technology,[53] and licensing out of their own patents to transfer technology.[54]

While most surveyed VCs were positive about patents,

startup survey respondents[55] tended to express more anti-patent sentiments, e.g. "abolish software patents" or "business method patents should not be allowed." Yet even among VCs who valued patents, their impressions of the patent system were negatively colored by their NPE experiences:

> I am pro-patent, very pro-patent… because I think in the long-run it helps with innovation in the industry. I think people who innovate deserve to be rewarded. However, if the alternative is having a bunch of NPEs running around increasing the cost of doing business through frivolous lawsuits then I think this country would be better off abolishing software patents.

The Negative Role of Patent Assertion Entities

A mixed view was shared by many VC respondents; a majority of responders viewed patents favorably, but patent assertion negatively: 78% of respondents disagreed strongly that the ability of companies to monetize their patents through NPEs/"trolls" helped innovation, and 83% agreed or agreed strongly that NPEs/"trolls" were hurting innovation (Fig. 4).

While a number of remarks expressed only negative sentiments about NPEs,[56] a number of them openly addressed the difference between patents helping companies defensively and NPEs asserting them offensively:

> Patents are important… Having a decent portfolio allows our companies to build 'stakes' around their solution and make it more difficult for a competitor to replicate the solution without significant work. Trolls, being NPEs are using patents only to monetize, but not create any value as our companies are, so I do see them as being misaligned with how our companies use patents as a defensive (rather than offensive) measure in most cases.

The sense that NPEs did not "fight fair" or contribute to society, even though patents were valuable, pervaded related answers to the question, "Please describe any experiences that you would like to share with lawmakers regarding the positive or negative impact of patents/patent enforcement on your investments and your companies. How have patents helped or harmed transacting and innovation in your industry?"

NPEs negatively colored otherwise positive views of patents. As one respondent relayed: "patents held by legitimate product companies are important to support investment and innovation. NPE's activities should be severely limited - they are not net contributors to society and their contribution to exits is not significant." In the view of another, an investor in advanced manufacturing and industrial technologies who indicated that his portfolio companies had sold patents to NPEs:

> All of our portfolio companies file patents; have had patents issued and are continuing to innovate and consult with their IP Committees about ongoing filing of novel ideas/products. We have been the defendants in three lawsuits by… patent trolls. One of the three… cost our company greatly in the cost of capital—the suit was filed in the midst of a capital raise—as well as the cost to settle the case.

One VC respondent weighed the pros and cons this way:

> [P]atents slightly help: increas[ing] chances investors will back your company ('you have something unique and protectable'). But mostly investors don't care because it is hard for startups to enforce patents, and there are usually ways to work around them. [They] often hurt: the patents out there represent a mine-field for a small company. [It is] expensive to know that you are in the clear, [and there is a] chance of highway robbery by NPEs. Net-net, they are probably a negative these days.

The Views of Those Who Have Benefited From and Been Harmed by NPEs

Those who have sold their patents have more direct experience with the positive impacts of those sales. A small number of the VCs (N=12) who provided their views on innovation also indicated that their companies had monetized their patents. Despite their likely familiarity with the positive impacts of assertions, these VCs had highly negative views of patent "trolls": 83%

strongly disagreed that "the ability of my companies to enforce or monetize their patents through NPEs/'trolls' helps innovation"; 67% agreed or strongly agreed that patents were vital for innovation and 58% strongly agreed that NPEs hurt innovation.

This surprising outcome may be explained by the likelihood that, based on responses, portfolios of surveyed VCs whose companies had monetized through NPEs (5%) likely also included companies that had received demands by NPEs (20% of companies). How did VCs whose companies had both sold patents to NPEs and been sued by NPEs trade off the advantages or disadvantages?

Several venture capitalists described cross-portfolio attacks in which companies in their portfolio had actually been sued on the basis of a patent that another company in their portfolio had previously sold. In one case, the patents were sold when the first portfolio company needed cash. Later the patents resurfaced in a NPE lawsuit against a second portfolio company. The company that had sold also was sued multiple times by NPEs, leading the venture capitalist to conclude: "The benefit of selling patents—their own use of the system—didn't offset the pain of the lawsuits, particularly when they came… I'd rather there be no patents than the current system."[57]

In the case of another investor, a patent was sold in the company firesale. It eventually found its way into the hands of, not an NPE, but a large incumbent who turned around and asserted it against the investor's new portfolio: "IP that was partially funded by our firm was used to sue other portfolio companies… and it is one of the many reasons why I have come to believe that software and business method patents are an enemy of innovation."[58]

A more cynical account was provided by another VC whose companies had sold to NPEs as well as been targeted by them:

> NPEs have no positive impact on innovation. Real innovators don't work long years in order to sell out to an NPE. They are motivated by the hope that they can build an operating business and change the world. NPEs come along like a loan shark after a mass layoff and buy broken dreams for cheap.

Finding 4. Startup concerns with patent enforcement go beyond NPEs and extend to the disadvantages relative to larger incumbents that startups experience as a result of poor patent quality, high costs, and delays associated with the patent system. The inability of startups to defend their own patents, and suits brought by "patent predators," larger companies that sue with anti-competitive motives, also presented specific concerns.

Although the focus of this report is on patent assertions by NPEs, a number of questions on the survey addressed other topics about the patent system, including patent litigation against competitors, the relative position of large and small companies in the patent system, and the administration of the patent system. Previous work has found that delayed venture capital funding characterizes software sectors where incumbents hold large numbers of patents.[59] Among answers to this survey there was a common theme: that small companies are disadvantaged by the costs and delays associated with the patent system because the patent "game" is one that is "too slow" and "too expensive to play for small companies."

Survey respondents described what they felt were disadvantages for small companies across the patent system: in prosecution, "big companies can file huge volume of patents [and] need to have a higher hurdle for patentability;" on the defense, "[t]he power of companies with a lot of assets to sue and harass smaller companies for whom fighting is financially difficult is unfairly detrimental to innovation and new businesses;" and on the offense, when "[l]arge companies largely tell their executives to build whatever product that the markets needs and not to worry about smaller companies' patents because they will be able to outlast them in court."

Across these contexts and comments, VC and company respondents consistently expressed the general sentiment that "[a large company] can outlast and outspend a smaller company."

Missing the Forest for the Trolls[60]

A number of VCs expressed the sense that the patent advantages of incumbents were as great, if not greater, a problem for startups than patent "trolls." According to one respondent:

> IP is not black/white and you cannot simply group us into companies who pursue patents and those who do not. Small companies who file a small number of patents are still outgunned by the bigger corps who can file (or buy/license) more patents and have deeper pockets with which to fight battles. This goes beyond the equally important problem with NPEs…

Others went further, viewing NPEs as a distraction from the real problem of large companies misusing their power:

> Patents are critical for innovation in small companies and small companies are critical for job creation in our country. We should be much more worried about big companies misusing the patent system against small companies rather than fretting about patent trolls using the patent system against big companies. The big company lobby is the consistent 'winner' in this battle and it is hurting our country.

Advantages of Incumbents in Patent Defense

Survey respondents described abuses by large companies in both resisting and bringing demands. In the words of one VC, "[b]ig companies don't take small companies seriously because they know we don't have the resources to start infringement litigation." A number of comments referred to not just ignorance but theft by larger companies, enabled by a slow and cumbersome patent administration system: "I have one company now that developed technology which was described as impossible by large competitors. We have issued patents but now that this technology is winning in the market, those same competitors freely copy it and say that what we did was obvious. Defending our patents takes years and is very expensive. When we finally win they will claim that competition is good for the US economy."

Advantages, Tactics, and Motivations of Incumbents in Patent Offense

A large number of comments also addressed the offensive advantages of large companies when they sue small companies, also known as patent predation[61] or patent bullying,[62] and their apparently anti-competitive motives.

In response to the question, "what triggered the suit/demand,"[63] a few VCs responded that the suit was an overture to an acquisition or licensing ("[p]atentee's strategy was to force a merger (competitor)"; "in some cases, work out a licensing agreement") or to interfere with the startup's operations ("[b]ig company scorched earth tactics … scare a smaller company and make it hard to raise funding"). In extreme cases, to sue a company out of existence appeared to be the object of the suit, according to VC respondents: "drain the start-up of cash to remove a competitor"; "to squash a thinly funded competitor"; "competitor's desire to shut company down." The posture of cases was not necessarily offensive, however, as VCs also cited the defensive concerns of incumbents fearful of the startup's success when asked what triggered the suit or demand: to "thwart company's market share growth or stall market traction of new technology," "competitor does not have this technology but much larger and deeper pockets"; "emerging threat of startup to incumbents"; "[c]ompetitor usually gets scared and usually has no real claim but tries to tie small company up. Competitor is usually very large public corp." Company respondents put it more plainly: "[c]ompetitor is losing and is resorting to spurious business method patents"; "[there] was no basis for [the competitor suit], but their company was going bankrupt so it was probably desperation."

"Competitor" v. "NPE"

In many of these cases, the distinction between a large company competitor and "troll" was unclear—"the difference between NPE and competitor is gray. The competitors were at one point trying to launch a product but clearly never acquired the resources to do so. So they effectively became NPEs" said one VC. Another VC and his portfolio company discussed in survey responses and follow up correspondence that:

> [S]ome operating companies are 'sham companies' that acquire defunct or non-functioning companies for cents on the dollar and uses those patents to attack large and small companies alike or sell a minimal amount to establish some shred of legitimacy. They go after start-up companies to establish case precedent.

While labels were unhelpful to these commenters, what did seem to matter was whether not the company was actually developing or selling a product. Was the patent being "used" appeared to be the yardstick, though this is not a requirement of patent ownership or assertion: "[p]atents that are legitimate serve a useful purpose when owned and used by an operating company. A company should only be able to prosecute a patent if it has a commercial product that relies on that patent or is in active development of one," said one VC survey respondent. Another agreed: "[p]atents held by legitimate product companies are important to support investment and innovation. NPEs activities should be severely limited—they are not net contributors to society and their contribution to exits is not significant."

This distinction is translated into attitudes about the ultimate social value of patent lawsuits. In one VC's opinion, "[i]ts very clear that competitor demands are positive and sharpen the company strategy, troll demands are much more detrimental - pure extortion." But others thought competitor cases were more challenging: "corporate enforcement actions are often more complex and demanding than NPE's because corporate actions are motivated by more than monetization, and often emotion drives litigation decisions. NPEs rarely have these issues." But according to another, "[w]ith competitors you have a business discussion. With an NPE, you are speaking with federally-endorsed organized crime."

"We were planning to raise a Series A round during the summer of 2013 but before we could, we were sued for patent infringement by our biggest competitor, Wellpoint, who owns 1-800-Contacts and Glasses.com. Just like that, we were faced with an 'injunction' threat from a $25B competitor. I was terrified our years of hard work were for naught.

"As it turns out, after seeing our technology, Wellpoint launched its own offering and immediately bought a patent which they are now using to sue us. It took me some time to come to grips with that fact that a $25B healthcare company who carefully crafts the image of being compassionate and caring towards the consumer would go on the aggressive against a 13-person startup. I can only speculate that they fear that the patents we filed (which take years to issue!) will become a weapon towards them down the road. But if they would have just called me before filing a lawsuit against us, they would know we applied for those patents for defensive purposes, not offensive ones. I care more about building a superior customer experience than I do about going after them with patents."

-Kate Endress, Founder and CEO of DITTO.com

For full testimony, see Appendix B.

Proposals and Observations

The second part of this report describes existing and potential legislative, judicial, and market-based responses to patent assertions and how they may be tailored to better meet the needs of startups and resource-poor defendants. According to survey responses, patents for novel inventions appear to be playing a generally positive and at times crucial role for startups, helping to transfer technology, enable investment, and improve exits, particularly in life sciences industries. But patent assertions at times hit startups when they are least able to fight them—on the eve of a funding or acquisition event, or, 40% of the time, in the context of its customer relations—and can have significant and at times devastating impacts on the company. Furthermore, many survey respondents don't find these to be socially productive assertions—but rather involving frivolous or overbroad patents, and frustrating rather than furthering competition.

Among the surveyed VCs, NPE experiences were both common, with nearly 90% of tech VCs reporting experience with NPE assertions, and also highly concerning: two-thirds of VC respondents strongly agreed with the assertion that NPEs/"trolls" were harming innovation in their industry, a sentiment shared even by those who monetized their patents. Though "the risk [associated with patents] feels unbounded," startups are routinely expected to absorb these risks in their dealings with acquirers, investors, and customers. As detailed in the comments and testimony, NPE assertions have added friction to technology transactions, reduced the value of pursued startups, and triggered large indemnities among the surveyed population.

Taken together, these responses make a strong case for patent reforms, but reforms that will work for startups and small companies and their distinct needs and vulnerabilities. Startups, with their fewer resources, less time, and greater focus on building the business, are at a relative disadvantage when patent processes are expensive, slow, and require deep patent expertise. These disadvantages make startups vulnerable to patent "bullies"—incumbents who are threatened by the success of upstarts, as well as "trolls" who bring patent nuisance claims.

These findings have implications both for public actors who seek to improve the patent system and private actors who seek to reduce the business risks that patent assertions pose. The ideas discussed below reinforce existing and proposed efforts and suggest others for improving our patent system. To the extent possible, the recommendations leverage existing laws, programs, and initiatives, making them more tailored to the needs of startups and small companies, rather than creating new private causes of action, new regulatory infrastructure, or onerous compliance burdens for the PTO or courts.

PUBLIC SECTOR PROPOSALS

Recommendation 1: *"Make patents on software only for truly innovative things."*

How: Fully fund the PTO and its quality initiatives including tightening functional claiming and expand low-cost access to the PTO's transitional program and other forms of post-grant review by reducing fees for small and micro entities and supporting and prioritizing collaborative challenges to patents asserted against large numbers of defendants, particularly by downstream users and small entities.

Overbroad and low-quality patents are responsible for a disproportionate amount of the discontent in the patent system, according to VC and startup respondents. To address the perception that bad patents are creating unmanageable patent risk, lawmakers and administrators should:

1. Fully fund, adequately staff, and support the PTO in current and future initiatives to increase patent quality.

The earlier its lifecycle that a low-quality patent can be weeded out, the less it will cost to society. Thus, the PTO must be empowered to act as a true gatekeeper and guardian of the public by preventing the patenting of non-novel inventions. Assuming that this will require a change to how the PTO is currently doing business, however, support will be needed on several fronts.

First, the PTO must be fully funded, adequately staffed, and supported in its current and future patent quality initiatives. These programs include training, guideline development, prior art partnerships for example with Stack Exchange, its Software Patent partnership, and basic infrastructure improvements. Because of their high social return on investment, these sorts of initiatives should be prioritized. Second, and crucially, institutional pressures must not undermine improvement of patent quality. Examiners who reject large numbers of patent applications should not be penalized for doing so.[64] The PTO must be able to rigorously apply the law without jeopardizing its financial outlook. A more gradual process of ratcheting up the standards for granting a patent would give patentees and prosecutors the ability to write higher quality patent applications of narrower and more defined scope. The PTO should focus on quality levers like obviousness, functional claiming,[65] and the other disclosure doctrines, and apply them rigorously, transparently, and consistently.

As the PTO executes, for example, on President Obama's mandate to provide new training to examiners on functional claimin and provide claim clarity,[66] it should have support to do what is necessary to apply the law, including educating patent prosecutors, phasing in guidelines, and adjusting count and incentive systems.[67] The PTO should engage the public through its Software Partnership and make it easy to track its progress and get involved at a patent level.

2. Increase low-cost access to the PTO's administrative review processes, including by giving special priority to "high-impact" patents that have been asserted against a large number of targets.

Improvements in patent quality need to translate into reduced risk and cost, which can be in the millions when startups defend a case.[68] Thus, although improving the quality of patent applications is important, already

"[O]ne of the most critical problems is the issuance of so many invalid patents by the Patent Office. The PTO makes ten times as much money from granting patents as it does from denying patents, and examiners have a much easier time making their quota by granting patents, because no one objects, than from rejecting a patent and defending that rejection repeatedly. Until the incentives placed on the office and its employees to grant, rather than deny, patents are addressed, there will be too many invalid patents issued that can be strategically used by their holders to extract undeserved settlements from others."

-Dan Ravicher, Executive Director of Public Patent Foundation

For full testimony, see Appendix B.

issued patents are an equally urgent target of patent quality initiatives.

The America Invents Act has created promising mechanisms for challenging questionable patents, but there are limits to their usefulness for startups and small companies. The inter partes review (IPR) and the covered business method (CBM) review mechanisms are being used to a much greater extent than previous forms of post grant review.[69] The initiation of such reviews can be effective for slowing patent demands. For example, in the case of the scanner patent assertion entity MPHJ, the entity quieted its campaign following a licensing agreement and the initiation of two inter partes reviews on its patents.

However, two features significantly limit the usefulness of these mechanisms for startups and small companies: cost and scope of review. First, IPR and CBM are expensive and increase upfront costs—estimates of IPR costs range from $200-300K and CBMs have been priced at $350K. For example, to file an inter partes review (IPR) typically requires, according to a seasoned litigator, "a prior art search, detailed filing (akin to a summary judgment brief), and, typically, an accompanying expert declaration… The large upfront cost (e.g., $75,000) discourages small companies from filing an IPR [which] is more expensive in the short term." These costs will not be offset if any accompanying litigation is not stayed.[70] Second, not all procedures are available for all patents on all grounds. For example, the CBM program is limited to business method patents. However, CBM is currently the only post-grant review mechanism that allows challenges to be brought to existing patents on the basis of overbroad functional claiming (Section 112) and related grounds of invalidity.

Low-cost access to administrative review of a patent should be expanded. Small and micro entity fee tiers should be available, and the PTO should support collaborative challenges to empower multiple small parties to take advantage of administrative review. The courts should prioritize those reviews to ensure that they translate into lower costs through stays or limitations on willfulness.

The PTO could also be given authority to prioritize reviews on the basis of public interest, in the same way that it prioritizes the review of patent applications that, for example, cover energy conservation or counter-terrorism inventions.[71] In the case of patent challenges, special treatment could be reserved for patents that are "high impact" because they are asserted, through letters or suit, against a large number of entities or more (e.g. 20 though the right number should be empirically derived), or because they are asserted against a certain number of small entities that have, for example, fewer than 500 employees or nonprofit status. This would likely encompass "en masse" campaigns that have been asserted against large numbers of customers[72] or campaigns that otherwise "blanket the industry." Such treatment would recognize that not all patent campaigns are created equal. When a dispute impacts a large number of members of the public, or disproportionately impacts small entities, the social returns from clarification of the claim scope and patent's validity are high.

These gains would be realized whether the patent is confirmed, invalidated, or clarified. Rather than fighting over the patent's validity in court, the parties could move on and settle the case or focus the dispute. For these types of patents, all grounds of review could be available, and review could be provided on an expedited basis upon petition, as that review arguably impacts more people than an ordinary review. The PTO could also accept "petitions to review" from members of the public and initiate its own post-grant review if it feels like the public interest would be served.

In addition, the PTO should continue its excellent job thus far of bolstering confidence that its reviews are being handled in a timely manner. It should make the status of administrative proceedings transparent and accessible so a court feels confident that when it stays a case and waits for the PTO's review, it will not be delaying justice indefinitely. The PTO should publish target dates for the completion of its proceedings, as does the International Trade Commission (ITC), whose "investigations" proceed in parallel with district court cases.

Recommendation 2: *Make patent cases about merits, not about who can "play the patent game better…[or] outlast or outspend."*

How: Permit more discretion in awarding fees and costs for non-core discovery and promoting uniformity and early dispositive rulings, for example by requiring the Patent Pilot Program to implement and measure the impact of best practices.

If it is the case that "[e]xpensive, bureaucratic systems always favor those with deep pockets", three steps can reduce the costs and risks for small company patent plaintiffs and defendants.

1. Promote fee-shifting and discovery cost-shifting.

A number of comments reflect the perception that plaintiffs bring weak patent cases in part because they will not be penalized for doing so: "the legal costs to running a business are significant. There is no penalty for suing a company even if the claims are completely fraudulent. Therefore, there is nothing to lose from suing any company that you think has money."

Fee-shifting would change this dynamic when the party with fewer resources has the stronger case: "[we] got a nuisance suit…we chose to settle rather than pay the expense to fight. [I]f we knew we'd get our expenses back if we won the suit, we would have continued"; "[e]ven if clearly not infringing, small companies (start-ups) are wasting time and capital defending or settling frivolous suits due to the way our legal system works (both sides pay for legal fees, so [it's] cheaper to settle than fight even if you know you'll likely win)." Commented one founder and CEO who tried to raise money from investors to ward off a patent suit, "the fact that fees are often sunk costs (no fee-shifting in place yet) also made it harder to raise money for this."[73] As discussed earlier, fee-shifting could also encourage small companies, despite their shallower pockets, to bring strong cases against larger competitors by penalizing the large company for resisting a meritorious demand. Fee-shifting is not a panacea, however—it has been the norm for centuries in other settings but its ability to deter frivolous litigation has not been well-documented.[74] In the context of patent litigation, indeterminacy in patent determinations and appeals, as well as the ability of parties to evade judgment without a bond requirement, present real obstacles to the recovery process. Still, two-way fee-shifting will increase the penalty for asserting weak claims, as well as the penalty for resisting meritorious claims, and empower those with strong cases to pursue them.

Courts should use existing and any expanded discretion they are given to shift fees in order to discourage wasteful litigation and litigation practices. Congress should also enable courts to shift fees prior to the resolution of a case as few small companies have the ability to "go all the way" in litigation. Requiring parties to pay for discovery beyond core documents, as has been proposed

"Right after this case, the judge changed his practice. Now he issues claim construction on the day of the ruling. That would have saved us a lot of pain.

"This should be a requirement, that you get it done right then. You'll never have a better understanding of the case than on that day. The longer you wait, the more unfamiliar the material becomes. Even if we had lost, we would have written the check and settled, rather than spending another $1.5M on discovery."

-Laura Smith, Intellectual Property Manager
For full testimony, see Appendix B.

by a number of Congressional bills, would reduce the staggering costs and inefficiencies that can accompany conventional patent litigation.

2. Promote Greater Uniformity Across Patent Courts.

Another recurring theme among the comments was the problem of game-playing, particularly through venue-shopping. Commenters specifically called out particular venues. In one example, a VC respondent described his companies as being sued by three patent "trolls," including one "filed in [the] Eastern District of Texas with Judge Ward [that] cost our company greatly in the cost of capital [and settlement]—a seven figure amount. The settlement was only agreed to once Judge Ward agreed to a change of venue to a court in Ohio. This whole 'gaming strategy' deployed by these trolls is quite disruptive and costly to early stage companies. I am a big supporter of restricting the unbridled activities of these patent trolls." A number of others talked about the additional costs of being sued in venues that were inconvenient to them.[75]

Wide variations in how courts managed patent cases were also described in companion surveys of over 500 in-house and outside patent counsel.[76] "I still see a huge disparity among the courts' e-discovery rules and standards," said one plaintiff's attorney. Asked to comment on the effectiveness of various interventions to increase the efficiency of patent litigation, another replied "ALL of the above depend on the judge."

While discretion is a keystone of our judicial system, Congress should promote greater uniformity across patent courts. This could take place in multiple ways, for example, by Congress mandating specific practices or principles, or by promoting uniform case management practices across initiatives like the Patent Pilot Program, with outcomes measured through different metrics such as cost or time to resolution as a proportion of case value, and party satisfaction. This would anchor the Patent Pilot Program with a deliverable that could be used as the basis for further policymaking.

3. Promote Early Rulings on Dispositive Issues.

In the words of one VC survey respondent, patent litigation is a "war of attrition" that favors those with deeper pockets, more time, and greater expertise. These advantages can be undercut, and considerable savings captured, by focusing issues and promoting early rulings on "dispositive" issues, ones whose resolution would resolve the entire case. As one example of a dispositive issue, if a court ruled that a patent was invalid on any ground, it would moot—or dispose of—the entire case. If a court ruled that a patent should be interpreted in a particular way, the case could continue, making it a non-dispositive issue.

Among over 500 surveyed inside and outside counsel, the highest rated intervention to enhance the efficiency of patent litigation—over fee-shifting, over discovery reform, and over a host of legislative and judicial interventions—was a timely decision on summary judgment (SJ) motions, which provide a judgment for a party to litigation without a full trial. 75% of outside and inside counsel survey takers rated them as "very

"Our clients don't have the financial ability to hire any patent attorneys to represent them, so proposals that merely create more legal mechanisms for challenging patents or deterring them through litigation won't be of any help. Rather, my clients need a system that provides pro bono legal counsel or shelter from such risks, either through an exemption or immunity under patent law, or informally through some private risk sharing arrangement like insurance. Individuals, non-profits, and small businesses don't have the money, or the time, to get involved in protracted patent litigation, so proposals like fee-shifting won't help, because they will never get there."

-Dan Ravicher, Executive Director of Public Patent Foundation

For full testimony, see Appendix B.

effective" at increasing efficiency, far more than any other intervention.

For example, the Lodsys involves app developers who have implemented functionality provided by the iOS App Developer Toolkit. Stepping in on behalf of its implementers, Apple asserted an exhaustion defense that would shield them from liability. Deciding this issue early could dismiss scores of demands and litigants from the challenge or, if decided against Apple, encourage it to sign an additional license with Lodsys to cover its implementers. Other dispositive motions such as standing present low risk, high reward propositions for the court. If the motion is successful, the case goes away. If it is denied, a source of uncertainty is removed for the parties and settling becomes easier. To avoid waste, it makes sense to know whether or not the cases actually pass these basic screens. In cases where a large number of defendants are named, in particular customer or implementer suits, where common questions of fact provide the basis for liability, the savings potential is large.

The ITC's recent innovation of ordering early dispositive motions within the first 100-days of a case is a great example of how such prioritization may align the parties' and courts' interests.[77] By setting aside a period of time to hear dispositive motions as the ITC has, unnecessary delays and abuse can be reduced. Furthermore, by channeling dispositive motions that do not require intensive fact discovery into an early, set period, courts can manage against the risk of endless serially filed dispositive motions, except for good cause. Again, this intervention is something that could be promoted in a variety of ways, including by publicizing the results of the ITC's pilot program and expanding some version of it to the Patent Pilot Program, with its outcomes measured and promoted, if successful.

Where possible, prompt rulings in general can provide relief to parties. To be fair, judges have heavy dockets with many pressing non-patent items. However, ruling from the bench as soon as practicable after a Markman hearing has taken place, rather than months later, can capture considerable savings for the court which does not have to refamiliarize itself with the details of the case, and by helping the parties structure subsequent actions and settlements based on an understanding of what the case is about.[78] Patent risk can also be managed not only through early disposition, but early disclosure, perhaps under seal, of financial information from which damages exposure can be cabined.[79] Companies should be able to tell their boards the exposure from suit they face.

Recommendation 3: *Make patent risks more manageable for startups.*

How: Require demand letters and complaints to disclose the real-party in interest, claim charts, related litigations and reviews, and licenses that could cover the target, and promoting transparency in demand letters.

Heightened Pleading/Demand Standards

Another source of unnecessary expense and perceived risk is generated when a startup receives a demand letter

and cannot tell what claims of the patent form the basis of the demand, what particular product is being accused or the theory of infringement, what licenses the patent is already covered by, who the real party in interest behind the assertion is, whether the patent is in past or present litigation, or whether the patent is subject to an ongoing administrative review. If a company understands that the basis for infringement is another's technology, as survey respondents reported was the case 40% of the time, their set of options—e.g. demanding indemnity from the supplier or design around—changes. Or if they know that the patent is the subject of a patent review, or that the patent has been licensed to certain suppliers of a product, the accused company can use this information to assess its risk. If they know who the real party in interest is, the target can research the other holdings and activities of the party, and better estimate its exposure and its options.

These basic facts can be costly for members of the public, especially those with little experience with the patent system, to obtain. However, they are well within the knowledge and ability of the patent holder to communicate. With that additional information, a target can focus on assessing the risks of infringement on the merits, rather than on bridging the information asymmetry that frequently characterize patent assertions. Congress should consider requiring them.

Congressional proposals to increase the quality of litigation pleadings should apply to demand letters as well.[80] Congress should consider requiring, when a party makes a demand or files suit, the basic information described above. Failure to do so would be tantamount to failing to comply with other administrative requirements for keeping a patent in force, i.e. paying maintenance fees, with the same sort of administrative penalties available for non-compliance. These sorts of requirements would leverage existing regulatory infrastructure and apply narrowly to asserted patents, rather than all patents.

Alternatively or in addition, the PTO and other agencies with patent information should also, in accordance with President Obama's directives, work to provide authoritative information about patents and options for responding that the many companies receiving demand letters can rely upon. Who the real party is behind the assertion, whether the patent is in past or present litigation, or whether the patent is subject to an ongoing administrative review is information that could be made more readily accessible. By promoting transparency in demand letters in partnership with private sector actors, this information can also be shared.[81]

Recommendation 4: *Make startups less attractive targets.*

How: Limit the liability of small defendants and downstream users, and the precedential vale of the settlements signed by small companies.

Companies with shallow pockets are typically not the favored target of lawsuits. However, survey respondents identified two motives that may be present for pursuing startups and small companies for patent infringement, as users and suppliers: (1) nuisance value ("trolls know enough to peg [the] license fee just below [the] cost to fight"), and (2) precedential value ("[Patent holders] go after startup companies to establish case precedent. Startups quickly agree to settle for a low amount because they have no money with which to stand up against an expensive legal battle. [The patent holder] then attacks larger companies for money, using those previously established case precedents").

One thing that would make startups less attractive targets for nuisance demands is for Congress to provide some sort of statutory limitation of liability or immunity—for example that would apply to companies with revenue under a certain threshold[82] in general, or to companies that are pursued because they are downstream users of others' technology.[83] In the latter case, the small company usually has worse access to information, experts, and financial records regarding overall infringement than the supplier of the technology,

who should bear the responsibility for their product. Determining the appropriate threshold would require additional analysis and evaluation, however.

A final idea would be for the precedential value of royalty agreements signed with small companies to be scrutinized and rejected by courts, when appropriate, as a fair indication of royalty rates to be set for larger companies.

PRIVATE AND CIVIL SECTOR OBSERVATIONS

Because this report is primarily intended for policy audiences, it pays great attention to policy development. However, the private and civil sectors have historically played critical roles in curbing litigation abuses brought by "patent speculators," predecessors to modern day patent "trolls."[84] When western farmers in the 1870s found themselves the subject of visits by patent royalty collectors, agricultural publications and newspapers published articles to "educate the farmer so that he would not be so easily duped by the agents" and farmer alliances worked to lobby Congress and the public as a result of their members' dilemmas.[85] After a sustained period of discontent among farmers, the standard for granting an agricultural design patent was changed.

When railroads found themselves under attack by patent sharks, they banded together through professional associations and, for an annual fee, mounted common defenses, received full legal services, shared information and patent references, helped each other avoid patents, and collectively agreed not to settle with patent holders.[86] They also lobbied various members of the government, resulting in public disapproval of patent shark practices and incremental changes in the law.[87] These tactics were successful, effectively ending much of the patent shark problem.

While times have changed, many current private and civil sector responses mirror those of the past. This section of the report seeks to both document existing private and civil sector self-help tactics as well as to share information and disseminate best practices. To gather information about offerings, we consulted with as many providers of patent defense services, both non-profit and for profit, as we could find, and asked them to describe their offerings. The result is reflected in Appendix C-1. To gather information on what tactics are being used to defend against NPE assertions and how effective they are, we did extensive research and asked a host of experts. We provide those in Appendix C-2.

Private and Civil Sector Service Offerings Focused on Reducing Risk from NPE Demands

Millions if not billions of dollars are spent on patent defense and assertion every year, and greater efficiencies certainly could be captured. Discrete private sector and civil sector offerings for reducing risk from NPE demands are largely new—most listed have been launched in the last year—and tend to offer discrete solutions to discrete aspects of the patent assertions as experienced by companies with particular profiles.[88] But questions about the scalability, reach, ability to execute, opportunity cost of experts, and lack of viable exits for investors caution against "leaving it to the private sector," particularly when it comes to small companies and startups.

Short of a comprehensive market-based solution like insurance[89] or the dramatic reduction in the costs and inefficiencies of existing patent litigation, it is unlikely that private sector service solution providers will be able to reduce patent demand risks to a level at which companies will no longer demand change from federal lawmakers. As pointed out by one company, the government has an important role to play as patents are a creature of federal law, issued by a federal agency, and interpreted by federal courts.[90]

Among the solution providers listed, there is an even split between the private and civil sectors. A number

Advice to small companies: Choose a more affordable counsel early on

"We made a huge mistake in choosing our counsel. We picked based on the personality of the lead trial lawyer. From day one, we were choosing based on the person that we wanted representing us at trial and the prestige of the law firm—and go to the board and say, "look we have a fancy lawyer." We should have done the reverse—chosen an unfancy lawyer from a much smaller firm, and [with a] fixed fee. If we got to the point where it looked like trial was likely, we could switch the lawyer 3 to 6 months ahead of time. We're a good example of how not to buy legal services."

"Given all the issues you have to deal with at the beginning, it would be my recommendation to go much cheaper, or even have one that is willing to go for a fixed fee. You don't need the most prestigious firm to handle discovery."

-Laura Smith, Intellectual Property Manager
For full testimony, see Appendix B.

of services are offered by both types of providers—for example demand letter registry (EFF's Trolling Effects and ThatPatentTool), prior art searching (ArticleOne Partners and AskPatents), and defensive litigation counsel (PTLCN, Gerchen Keller Capital, and ipCM).

While these services tend to support or supplement traditional legal services, others offer significantly differentiated value propositions. One set of services aims to work with companies to prevent patents from being used in an "offensive" manner (IPA, DPL, LOT, OPN, OIN). The Open Invention Network (OIN) is the oldest, launched in 2005 and now including 600 licensees. It focuses on protecting Linux and other open source projects through the creation of a patent cross-license among community members. Of the others, two have been spearheaded by Google, one by Twitter, and the fourth by law professors Jennifer Urban and Jason Schultz. These "private ordering" initiatives, depending on the extent of their adoption, can significantly reduce risks for their members; indeed the "patent détente" and norm of non-enforcement that existed before the rise of patent assertion entities[91] did just that for large swaths of the technology industry.

RPX is the only public company focused on patent assertion. They "acquire and clear high-risk patents from the open markets and out of active litigations" but also have developed deep intelligence about the market and patent assertions. They have recently started offering an insurance product for small to mid-sized companies; historically a lack of data on settlements, adverse selection problems, and the difficulty of predicting case outcomes has stymied the development of robust insurance offerings.[92] Unified Patents has also developed an offering to proactively deter risks in certain technology areas.

So far, no company or alliance has tried to offer the sort of "unified front" of companies systematically banding together to resist demands. One problem with that business model when it was practical in the past is that it became "too successful," deterring claims so effectively that it made itself obsolete. In addition, the diversity of actors and interests in patent defense makes unified collaborations more difficult. According to large company in-house counsel respondents to a survey (N=86), 23% had monetized their patents and 28% were thinking of doing so.[93] Defensive fronts covering discrete technologies or sectors are easier to accomplish and are contemplated or offered by a number of the services (e.g. OIN, Unified Patents).

Self-Help Tactics

By far, the largest share of revenue going into defending against NPE demands is captured by law firms. While many firms do extensive amounts of patent defense work, none to our knowledge has identified itself as completely specialized in helping small companies deal

with NPE demands. However, as the share of patent cases brought by NPEs has risen, so has the level of general experience with NPEs within the legal community.

In the popular media, tactics for responding to patent suits like "fighting," "ignorance," and "public shaming" are discussed. To disseminate information about the usefulness of these and other tactics and their ability to reduce costs and risks for startups, we researched different tactics and talked to seasoned litigators at companies, law firms, and nonprofits that have deep experience with patent litigation, often on both sides of assertions against small companies. The tactics, as well as in the collective comments we collected about using them, are summarized in Appendix C-2.

The tactics can be grouped into several different categories: 1) keeping a low profile in demands that are asserted against a large number of companies; 2) the opposite, being a "scorpion"—in other words so "poisonous" by being willing to bring ancillary attention and claims to the case that the plaintiff moves on to other targets; 3) getting help by joining with others, either with respect to the specific assertions or sharing experiences with lawmakers and others in a position to influence the patent system; 4) reducing costs, by carefully managing outside counsel and collaborating where it makes sense to do so.

One size does not fit all and each company needs to assess its own risk and situation; nevertheless the comments provide a window into what those who have tried have found works, and does not work.

References

1. "New Engine/Kauffman Foundation Research Lists Top 10 Metro Areas with Highest Tech Startup Density," *Ewing Marion Kauffman Foundation*, Press Release, August 14, 2013, http://www.kauffman.org/newsroom/young-high-tech-firms-outpace-private-sector-job-creation.aspx (accessed August 29, 2013).
2. We defined a non-practicing entity (NPE) in our survey as "an entity that asserts patents as a business, not including universities or startups."
3. Jon Leibowitz, "Opening Remarks of FTC Chairman Jon Leibowtiz," (opening remarks at Federal Trade Commission Patent Assertion Entity Workshop, Washington, DC, December 10, 2012) available at http://www.ftc.gov/speeches/leibowitz/121210paeworkshop.pdf.
4. *See* Ellson, Burnham, Appendix B.
5. This report uses the terms interchangeably, defining in the survey an NPE as "an entity that asserts patents as a business, not including universities or startups."
6. America Invents Act. 35 U.S.C. § 34 (2012).
7. "Tracking PAE Activity: A Post-script to the DOJ Review," *RPX blog*, January 23, 2013 http://www.rpxcorp.com/index.cfm?pageID=14&itemID=27, (accessed August 29, 2013); Robin Feldman, Thomas Ewing, and Sara Jeruss, "The AIA 500 Expanded: Effects of Patent Monetization Entities," *UC Hastings Research Paper No. 45*, 2013, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2247195.
8. James Bessen and Michael Meurer, "The Direct Costs from NPE Disputes," *Cornell Law Review 99* (forthcoming 2014), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2091210; James Bessen, Jennifer Ford, and Michael Meurer, "The Private and Social Costs of Patent Trolls," *Regulation Magazine*, Winter 2011-2012, 26-35.
9. Catherine Tucker, "Patent Trolls and Technology Diffusion," *Massachusetts Institute of Technology, Management Science Working Paper*, 2011, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1976593; Fiona Scott Morton and Carl Shapiro, "Strategic Patent Acquisitions," (unpublished manuscript, 2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2288911.
10. Colleen V. Chien and Aashish Karkhanis, "Software Patents & Functional Claiming," [presentation to Software PTO Roundtable, Stanford, CA, February 12, 2013], available at http://www.uspto.gov/patents/init_events/software_ak_cc_sw.pdf; U.S. Government Accountability Office, *Intellectual Property: Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality*, GAO-13-465, 2013, available at http://www.gao.gov/products/GAO-13-465.
11. "Testimonials," *Acacia Research Group LLC*, http://www.acaciatechnologies.com/testimonials.htm (accessed August 29, 2013).
12. *This American Life*, NPR, July 22, 2011, available at http://www.thisamericanlife.org/radio-archives/episode/441/when-patents-attack; *This American Life*, NPR, May 3, 2013, available at http://www.thisamericanlife.org/radio-archives/episode/496/when-patents-attack-part-two.
13. Allen I. Kraut, *Organizational Surveys: Tools for Assessment and Change* (San Francisco: Jossey-Bass Publishers, 1996).
14. Zach Honig, "Lodsys Comments on iOS Patent Infringement, Receives Hate Mail, Death Threats," *Engadget*, May 16, 2011, http://www.engadget.com/2011/05/16/lodsys-comments-on-ios-patent-infringement-receives-hate-mail/ (accessed August 29, 2013).
15. Colleen V. Chien, "Startups and Patent Trolls," *Stanford Technology Law Review* (forthcoming 2014), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2146251.
16. Drew Curtis, "TED Talks: How I Beat a Patent Troll," *TED*, April 2012, http://www.ted.com/talks/drew_curtis_how_i_beat_a_patent_troll.html (accessed August 29, 2013).
17. Todd Moore, "Why I'm Not Paying the Troll Toll," *My Random Tech Blog*, July 2, 2013, http://toddmoore.com/2013/07/02/why-im-not-paying-the-troll-toll/ (accessed August 29, 2013).
18. As one interviewee said: "I know for a fact that every single technology entrepreneur deals with [patent assertion risk]... People can't talk about it. If you reveal – even among close entrepreneur friends – that you are being trolled, it's really scary and you don't want to give a real sense of how serious the situation is. …if your company isn't doing well, you don't tell people. You say '[w]e're crushing it' not 'we're getting crushed by it.'"
19. As one lawyer to a several nonprofits that have received demand letters told me in declining my request to share information they had publicly filed with the state, "confidentiality is very important in what [my clients] …do, and they try to avoid doing anything that attracts attention to [their customers]...." While face-blurring and voice modification have been used to anonymize public talks small companies have given on patent assertion (e.g. Application Developer Alliance 2013), they are not readily scalable to a large population.
20. *Ewing Marion Kauffman Foundation*, "New Engine/Kauffman Foundation Research Lists Top 10 Metro

Areas with Highest Tech Startup Density."

21. *Ewing Marion Kauffman Foundation*, "New Engine/ Kauffman Foundation Research Lists Top 10 Metro Areas with Highest Tech Startup Density."

22. Paul A. Gompers and Josh Lerner, T*he Money of Invention: How Venture Capital Creates New Wealth* (Boston, Harvard Business School Publishing, 2001).

23. Chien, "Startups and Patent Trolls."

24. Based on an analysis of 425 cases chosen at random filed between Sept. 17, 2011 and July 30, 2013; Steve Moore, "Probing 10 Patent Troll Myths – A Fractured Fairytale Part 2," *IPWatchdog*, July 30, 2013, http://www.ipwatchdog.com/2013/07/30/probing-10-patent-troll-myths-a-factured-fairytale-part-2/id=43754/ (accessed August 29, 2013).

25. For "PAEs Filed 62% of all Patent Suits in 2012," *see RPX blog*, "Tracking PAE Activity: A Post-script to the DOJ Review." For "patent monetization entities filed 58.7% of the patent lawsuits in 2012," *see* Feldman, Ewing, and Jeruss, "The AIA 500 Expanded: Effects of Patent Monetization Entities."

26. Chien, "Startups and Patent Trolls."

27. Michael Risch, "Patent Troll Myths," *Seton Hall Law Review* 42 (2012): 457.

28. PricewaterhouseCoopers/National Venture Capital Association, "MoneyTree™ Report," Investments by Industry Q1 1995 - Q2 2013 Data. https://www.pwcmoneytree.com/MTPublic/ns/index.jsp (accessed September 3, 2013).

29. The survey asked startup and VC respondents to identify what they thought triggered the suits/demands they had experience with. The top answer was publicity or success (N=21), followed by an M&A event (N=5), IPO (N=6), and funding (N=5).

30. *See* Smith, Appendix B.

31. David L. Schwartz, "The Rise of Contingent Fee Representation in Patent Litigation," Alabama Law Review 64 (2012): 335.

32. *See* Table 2.

33. *See* Table 2.

34. Analysis of case pleadings.

35. *See* Table 2.

36. *See* Burnham, Appendix B.

37. Colleen V. Chien and Edward Reines, "Why Technology Customers are Being Sued En Masse for Patent Infringement & What Can Be Done," *Santa Clara Univ. Legal Studies Research Paper No. 20-13*, 2013, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2318666.

38. *See* Burnham, Appendix B.

39. For addressing concerns about how such industry-specific proposals can pass international trade muster, *see* Colleen V. Chien, "Tailoring the Patent System to Work for Software and Technology Patents," (unpublished manuscript, 2012), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2176520.

40. Chien, "Startups and Patent Trolls."

41. *See* Smith, Appendix B.

42. *See* Smith, Appendix B.

43. Nathan Myhrvold, "The Big Idea: Funding Eureka," *Harvard Business Review*, March 2010, http://hbr.org/2010/03/the-big-idea-funding-eureka/ar/1 (accessed September 3, 2013).

44. *See* Ellson, Appendix B.

45. *See* Ellson, Appendix B.

46. Brian J. Love, "An Empirical Study of Patent Litigation Timing: Could a Patent Term Reduction Decimate Trolls Without Harming Innovators?" *University of Pennsylvania Law Review* 161 (2013): 1309.

47. Stuart J.H. Graham, et al., "High Technology Entrepreneurs and The Patent System: Results Of The 2008 Berkeley Patent Survey," *Berkeley Technology Law Journal* 24 (2009): 255, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1429049.

48. As compared to a 82% share among venture-backed companies that took the Berkeley Patent Survey, see Graham, et al., "High Technology Entrepreneurs and The Patent System: Results Of The 2008 Berkeley Patent Survey."

49. Chien, "Startups and Patent Trolls."

50. Bessen and Meurer, "The Direct Costs from NPE Disputes."

51. David L. Schwartz and Jay P. Kesan, "Essay: Analyzing the Role of Non-Practicing Entities in the Patent System," *Cornell Law Review* (forthcoming), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2117421

52. Approximately 70% of portfolio companies, based on N=150 responses.

53. Approximately 22% of portfolio companies, based on N=148 responses.

54. Approximately 13% of portfolio companies, based on N=147 responses.

55. Startup respondents were not asked the same set of questions.

56. Using terms like "federally supported extortion," or "federally endorsed organized crime," "soul-sucking,"

"highway robbery," "parasitic," or the more polite "asymmetric business model."

57. *See* Ellson, Appendix B.

58. Fred Wilson, "The Twitter 'Patent Hack,'" *AVC: Musings of a VC in NYC*, April 18, 2012, http://www.avc.com/a_vc/2012/04/the-twitter-patent-hack.html, (accessed September 3, 2013).

59. Iain M. Cockburn and Megan J. MacGarvie, "Patents, Thickets and the Financing of Early-Stage Firms: Evidence from the Software Industry," (unpublished manuscript, 2007), available at http://patentability-pending.com/files/COCKBURN%20Iain%20M.,%20Megan%20J.%20MacGARVIE%20-%20Patents,%20Thickets%20and%20the%20Financing%20of%20Early-Stage%20Firms%20-%20Nov%202007.pdf

60. This is the title of a paper by Mark Lemley and Doug Melamed that makes the point that NPEs are a symptom of underlying problems with the patent system.

61. Colleen V. Chien, "Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents," *North Carolina Law Review* 87 (2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1396319.

62. Ted M. Sichelman, "The Vonage Trilogy: A Case Study in 'Patent Bullying'" in *Perspectives on Patentable Subject Matter*, eds. Michael Abramowicz, John Duffy and F. Scott Kieff, (San Diego Legal Studies Paper No. 11-057, 2013) available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1856703.

63. VC Survey Question: If your companies have received demands, what do you think triggered the suit/demand(s) (e.g. IPO, acquisition, publicity) and what was the patentee's strategy? Please include whether the suit was by a competitor or a patent assertion entity/"troll;" Startup Survey Questions: "please describe the motivations you think were behind the competitor demand and how it resolved;" "Please comment, if you know, on what event triggered the [NPE] demand (e.g. acquisition, publicity), and the patentee's strategy, if you can."

64. *See* Ravicher, Appendix B.

65. Mark Lemley, "Software Patents and the Return of Function Claiming," *Stanford Public Law Working Paper No. 2117302*, 2013, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2117302

66. "FACT SHEET: White House Task Force on High-Tech Patent Issues," *The White House*, June 4, 2013, http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-high-tech-patent-issues (accessed September 3, 2013).

67. Chien and Karkhanis, "Software Patents & Functional Claiming" (presentation).

68. *See* Endress, Appendix B.

69. U.S. Government Accountability Office, *Intellectual Property: Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality*.

70. U.S. Government Accountability Office, *Intellectual Property: Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality*.

71. 37 C.F.R. § 1.102.

72. *See* Table 2.

73. *See* Endress, Appendix B.

74. Werner Pfennigstorf, "The European Experience with Attorney Fee Shifting," *Law and Contemporary Problems* 47 (1984): 37.

75. *See* Endress, Appendix B.

76. Colleen V. Chien, et al., "Best Practices in Patent Litigation," (unpublished paper, forthcoming).

77. "Pilot Program Will Test Early Disposition of Certain Section 337 Investigations," *United States International Trade Commission*, http://www.usitc.gov/press_room/documents/featured_news/337pilot_article.htm. (accessed September 3, 2013).

78. *See* Smith, Appendix B.

79. Chief Judge Randall R. Rader, "The State of Patent Litigation,"(lecture at the Eastern District Texas Judicial Conference, Irving, TX, September 27, 2011).

80. House Committee on the Judiciary, Abusive Patent Litigation: The Impact on American Innovation & Jobs, and Potential Solutions, 113th Cong., 1st sess. March 14, 2013, (statement of Mark Chandler, Senior Vice President and General Counsel, Cisco Systems, Inc., available at http://judiciary.house.gov/hearings/113th/03142013_2/chandler%2003142013.pdf.)

81. *See* Appendix C-1.

82. *See* Ravicher, Appendix B.

83. Chien and Reines, "Why Technology Customers are Being Sued En Masse for Patent Infringement & What Can Be Done."

84. Colleen V. Chien, "Reforming Software Patents," *Houston Law Review* 50, no. 2 (2012): 325, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2125515.

85. Earl W. Hayter, *The Patent System and Agrarian Discontent: 1875-1888*, (Cedar Rapids: Torch, 1947).

86. Steve Usselman, "Patents Purloined: Railroads, Inventors, and the Diffusion of Innovation in

Nineteenth Century America," *Technology and Culture* 32 (1991): 1047.

87. Chien, "Reforming Software Patents."

88. *See* Appendix C-1.

89. *See* Ravicher, Appendix B.

90. House Committee on the Judiciary, Abusive Patent Litigation: The Impact on American Innovation & Jobs, and Potential Solutions, 113th Cong., 1st sess. March 14, 2013, (statement of John Boswell, Senior Vice President and General Counsel, SAS, available at http://judiciary.house.gov/hearings/113th/03142013_2/Boswell%2003142013.pdf.

91. Colleen V. Chien, "From Arms Race to Marketplace: The New Complex Patent Ecosystem and Its Implications for the Patent System," *Hastings Law Journal* 62, (2010): 297, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1703557.

92. Colleen V. Chien, "Predicting Patent Litigation," *Texas Law Review* 90 (2011): 283, available at http://www.texaslrev.com/90-texas-l-rev-283/.

93. Colleen V. Chien, et al., "Best Practices in Patent Litigation," (unpublished paper, forthcoming).

Appendix A: Methodology

A. Sampling Frame

In quantitative survey research, the gold standard is to pick a random sample (selection of potential respondents) from a larger frame (list or source of the targeted respondents) that is representative of the target population. The target respondent in this study was either an executive or an investor in a startup with experience with the patent system. Since the subject of the study was patent assertion, which not all startups have experienced, I sought a sufficiently large number of responses from which to observe and analyze the subject of study.

To leverage previous research efforts, I worked with a team of research assistants and a statistics consulting firm, Tech Society Research, to develop a sample of startups and their investors based on the steps described in the Berkeley Patent Study.[1] That study drew from two primary sources: Thompson's *Venture Xpert* database and Dun and Bradstreet's company listings with emails. Building upon the steps carried out by the Berkeley Patent Survey, we included in our sample companies less than 10 years old with at least one email address. However, rather than limit our search to particular industries, as did the authors of the Berkeley Patent Survey, we included companies in any industry, for a total of 6,636 addresses, not counting opt-outs or bounced emails. In addition, we could not include the Berkeley Patent Survey's other key source, Dun and Bradstreet, because as part of transferring the business line to Mergent Intellect, academic licenses to company email lists were discontinued in 2012.

Table A: The Surveyed Population – Venture Capitalists and Startups

Survey Branch	Primary Sampling Frame and Source*	Completed Responses	Respondent Profile
Startup	6,636 Employees and Investors affiliated with companies younger than 10 years old (Venture Xpert database)	173**	73% founders/executives; 75% of companies with revenue under $10M, 93% with fewer than 500 employees.
Venture Capitalist	Venture Xpert database; Directory of 2,373 venture capitalists	134***	52% seed/early stage investor, skew from national average towards bio/pharma and hardware/semiconductor industries

*Excluding opt-outs and bounced emails. See below for full description of sampling frame.
**Excluding 27 disqualifications.
***Excluding 14 disqualifications.

Table B: Companion Surveys – Large Company and Law Firm Lawyers

Survey Branch	Primary Sampling Frame and Source*	Completed Responses	Respondent Profile
Large Company IP Lawyers Survey	262 in-house members of Santa Clara University Law School High-Tech Community, attendants at 2013 IP Counsel Café Conference	122**	95% from public companies or companies with $100M annual revenue
Law firm Lawyers Survey	12,052 litigation counsel randomly selected out of ~40,000 counsel identified on litigation pleadings in the last 10 years (Academic Experts Group database)	394***	65% of qualified respondents had more than 10+ years of litigation experience, the rest had 5-10 years.

*Excluding opt-outs and bounced emails. See below for full description of sampling frame.
**Excluding 34 disqualifications. 53% of the completed responses were from the closed list.
***Excluding 105 disqualifications.

Thus, to supplement the *Venture Xpert* sample we added 2,373 additional email addresses, not counting opt-outs or bounced emails, of venture capitalists provided based on a privately-held proprietary directory of investors. We cannot confirm how many respondents received the email, and at least some of the messages were caught by respondent spam filters. We also encouraged a handful of respondents who took the survey and contacted us expressing interest in its results to endorse the survey and invite colleagues to participate. We do not know the precise number of survey-takers that took the survey in response to these solicitations. The startup survey was also provided to listeners of a webcast that I did for Engine Advocacy, a Silicon Valley startup advocacy group. We received 14 survey responses from this source.

We distributed the surveys via web survey. Web surveys are increasingly the 'go-to' method for data collection because they are much less expensive than conventional methods, and the results are immediate. However, web surveys also suffer from low response rates—single digit response rates where no relationship exists between the surveyor and the surveyed population are not unusual.[2]

Given our low response rate and the fact that the sampling frame included only those companies and investors whose e-mail addresses were known through the methods described above, the survey results should not be generalized to the general population. Rather, our sample reflects a hybrid of sampling methods—a convenience sample (available lists) and snowball sample (direct contacts for inviting people into the study). We also employed a mixed methods approach[3] for analyzing the data. That is, we used the numeric results to set a context and the open-ended comments provided by respondents as thick description behind these numbers. The resulting analysis is a meld of qualitative analysis that is informed by quantitative results. While not generalizable, the results are instructive for describing concerns and impacts of patent demands. The yield from these efforts is presented in Table A, above.

B. Data Collection

We distributed the survey via SurveyMonkey, and sent up to eight reminder emails in the case of the startup branch of the survey, and up to four reminder emails in the case of the VC branch. To encourage participation in the study, we gave survey respondents the option to receive a copy of the survey results and also told them that the purpose of the survey was to gather input for a report intended for lawmakers and the members of the startup community. However, given cost and related constraints, we did not provide additional incentives. We did not precede or follow-up email invitations by postal mail or telephone.

C. Survey Design

We invited recipients of the survey solicitation to participate if they had experience with patents or patent assertion, positive or negative. We asked questions pertaining to a variety of aspects of the patent system, ranging from the reading of patents, to sources consulted to obtain information about patents, to licensing and patenting behavior and attitudes, to experiences with patent assertion. We asked questions pertaining to "NPEs" (non-practicing entities) which we defined in the survey as "an entity that asserts patents as a business, not including universities or startups" or "a company that asserts patents, rather than makes products, as a business."

This paper focuses on the impacts of assertions on innovation and young companies; reports on other topics will be released at a later date. In the case of the startup branch of the survey, question modules were provided based on the companies' experiences – for example if a company answered "no" to the question of whether it had reserved an assertion, it would not get questions about the impacts and its responses to the assertions. In the case of the venture capitalist branch of the survey, question modules were developed for better response rates; the version of the questions received depended solely on when the respondent took the survey.

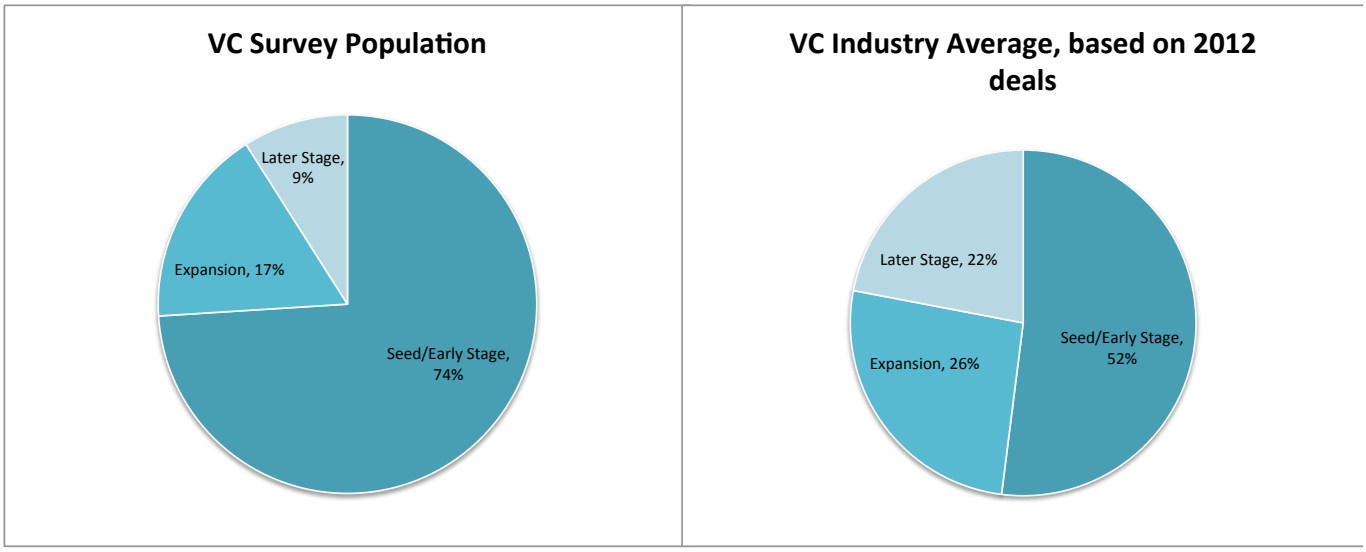
D. Respondent Profiles

a. Venture Capitalist Respondent Profiles

We asked venture capitalists to identify their areas of investment and the stage of company of primary investment. Normalizing the numbers to add to 100% (multiple responses were allowed), the highest share of respondents among company types were seed or early stage investors (74%) (Fig. 1), and among industries, were investors in software/internet (46%) (Fig. 2).[4]

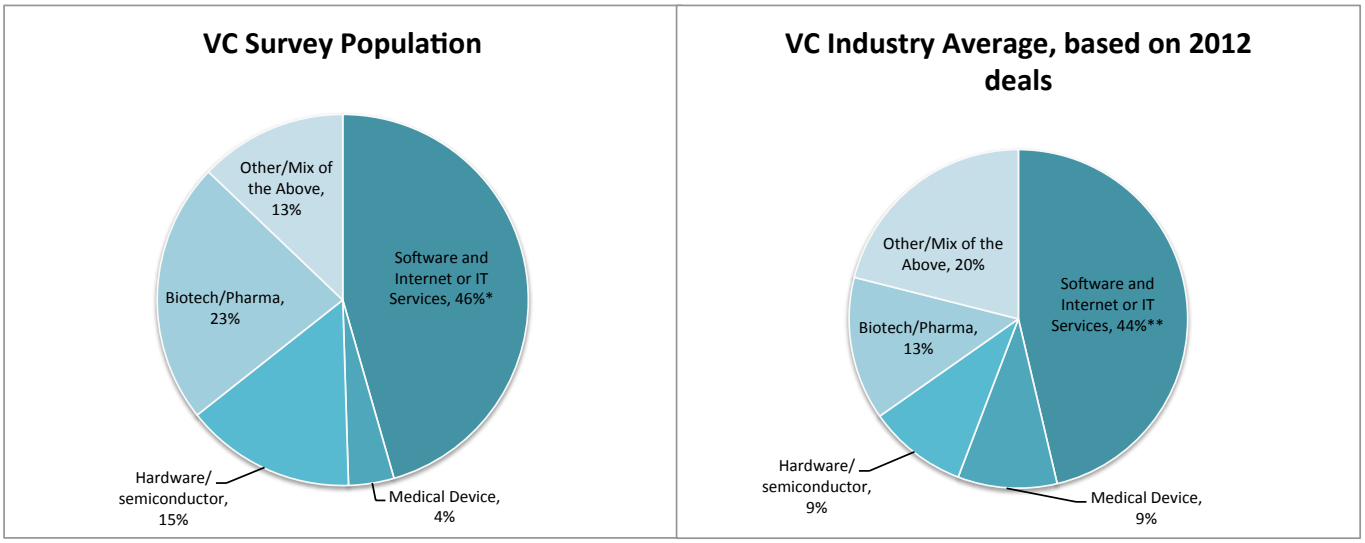
The respondent group was skewed from the national average in two ways: it had a higher percentage of seed and early stage investors (74% in the sample vs. 52% on average) (Fig. 1), and an overrepresentation of biotech and pharma (23% vs. 13% on average) and hardware/semiconductor investors (15% vs. 9% on average), relative to the number of 2012 deals (Fig. 2). The skew in these industries may be explained by the known importance of patents to the biopharma industry, relative to others and the prevalence of patents in the semiconductor and hardware industries.[5]

Figure 1: In what stage are the companies in which you primarily invest?



N= 158
Source of Industry Averages: MoneyTree

Figure 2: In what industry do you primarily invest?



N= 157
*Software and Internet
**Software and IT Services (the Software and Internet share of VC deals in 2012 is likely larger than this number)
Source of Industry Averages: MoneyTree

In order to observe any industry effects, for certain views we reported the responses of IT (software/internet, hardware/semiconductor) and biopharma (biotech/pharm and medical devices) VCs separately. If a VC identified as investing in both, we excluded them from both populations.

b. Startup Survey Respondents

We asked survey respondents to answer questions about themselves and their companies. 73% responded that they were founders or executives, and 12% were managers. 93% of the surveyed companies were privately held, and the industry of the respondents, similar to the population of the VC survey, slightly skewed towards the biopharma (17% v. 13%, on average) and hardware/semiconductor industries (11% v. 9%, on average) (Fig. 3).

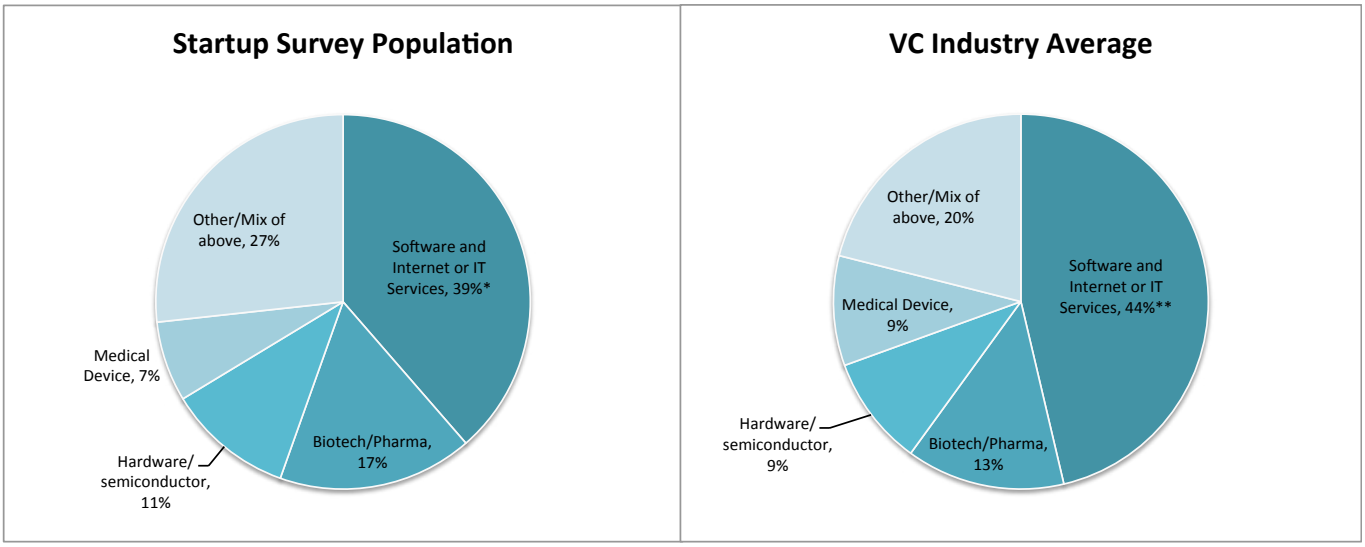
E. Survey Reporting

This study reports on the responses of startups and VCs to the current survey. However, at times we also report (but do not combine) the results from the companion surveys described above as well as an earlier study I produced in 2012[6] based on a survey of 223 respondents, 79 of whom had received a patent assertion demand and several of whom had monetized their patents through patent assertion entities (PAEs). While containing a number of suggestive findings, the survey was a non-random, non-probability sample, distributed primarily, openly to a universe of readers of technology and law and public interest/academic blogs that had to "opt-in" in order to take the survey. This study is denoted as 'Chien 2012' and serves as a point of comparison for the current study.

In accordance with standard statistical practice as applied to this study, we report results with at least 30 respondents except in the case of smaller sub-samples.[7] Where we asked the respondent to select a range for ease of answering, we recalculated the range to a midpoint and derived averages based on that number.

In this report, we refer interchangeably to NPE and PAE, which we understand and believe our survey respondents to understand does not include universities or startups. We quote liberally from survey responses, and have removed obvious spelling errors in order to improve readability. We also include data on customer

Figure 3: In what industry is your company?



N= 158
*Software and Internet
**Software and IT Services (the Software and Internet share of VC deals in 2012 is likely larger than this number)
Source of Industry Averages: MoneyTree

suits shared with us by Patent Freedom. Its methodology is provided in Appendix D.

References

1. Stuart J.H. Graham, et al., "High Technology Entrepreneurs and The Patent System: Results Of The 2008 Berkeley Patent Survey," *Berkeley Technology Law Journal* 24 (2010): 1255.
2. Roger Tourangeau, Frederick Conrad, and Mick Couper, *The Science of Web Surveys* (New York: Oxford Univerity Press, 2013).
3. Charles Teddlie and Abbas Tashakkori, *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences* (Thousand Oaks, CA; Sage Publications, 2009).
4. See 2012 Year-End VC Investment Stats – MoneyTree, National Venture Capital Association, "Industry Stats by Date," http://www.nvca.org/index.php?option=com_content&view=article&id=78&Itemid=102; (accessed August 30, 2013). See Fig. 1 above.
5. Bronwyn H. Hall and Rosemarie Ham Ziedonis, "The Patent Paradox Revisited: An Empirical Study of Patenting the U.S. Semiconductor Industry, 1975-1995," *RAND Journal of Economics* 32, no. 1 (2001): 101, available at http://www.jstor.org/discover/10.2307/2696400?uid=3739560&uid=2&uid=4&uid=3739256&sid=21102566963011.
6. Colleen V. Chien, "Startups and Patent Trolls," *Stanford Technology Law Review* (forthcoming 2014). Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2146251.
7. Jason W. Osbourne, ed, *Best Practices in Quantitative Methods* (Thousand Oaks, CA; Sage Publications, 2008).

Appendix B: Views from the Trenches

VCs, Startups, and Small Business Stories

Dan Ravicher, Executive Director of Public Patent Foundation (PUBPAT)

Dan Ravicher is Executive Director of the Public Patent Foundation (PUBPAT), a non-profit founded in 2003 whose mission is to protect freedom in the patent system. PUBBAT advocates for improvements to the patent system and educates the public about how the patent system impacts everyday life. It also undertakes specific litigation and reexamination matters to defend individuals, non-profits, and small businesses from invalid patents. Many of its matters have been against patents held by "trolls," and it has resolved matters for parties in litigation against Lodsys and Arrivalstar.

What's it like for a small startup to receive a patent demand?

Imagine you're a small startup business. You have three employees, including yourself, and you make about $500K per year in revenue. You get a patent infringement letter and are referred to some patent attorney who tells you they charge $500 an hour and will take at least 40 to 60 hours to review the matter. Then, if you want this attorney to respond to the patent holder, that's another 20 hours to write letters, do conference calls, etc. Before you know it, you've spent $50K and had to lay off one of your employees. All this time the patent holder is offering to settle for $20 to 40K. What are you going to do?

Which of the different ideas out there would make a difference to your clients?

Our clients don't have the financial ability to hire any patent attorneys to represent them, so proposals that merely create more legal mechanisms for challenging patents or deterring them through litigation won't be of any help. Rather, my clients need a system that provides pro bono legal counsel or shelter from such risks, either through an exemption or immunity under patent law, or informally through some private risk sharing arrangement like insurance. Individuals, non-profits, and small businesses don't have the money, or the time, to get involved in protracted patent litigation, so proposals like fee-shifting won't help, because they will never get there.

What private sector solution do you favor?

In most other areas of the law we have a solution called insurance. A small business buys liability insurance to protect against customers who get injured in their store or using their products. They get insurance for workman's comp, discrimination claims, etc. If and when they get sued, the insurance company has the deep pockets to defend them. And since the patent holder may be targeting many of the insurance company's clients, they have an incentive to play hardball. That alone will cause the nickel and dime trolls (as I call them) who focus on small companies to go away. There are many benefits risk consolidation can provide, including overall risk reduction though policy and doctrinal changes that only an insurance company can have sufficient resources and incentives to effectively pursue. But, the mere aggregation of risk produces an efficiency gain as well while effectively allowing disparate small businesses to

work together to fight common enemies.

For example, in the automobile context, you have thousands of potential plaintiffs suing thousands of potential defendants. So, the insurance companies can use actuarial data to assess value of claims and realize the benefits of spending more to fight a case than it is worth because the overall deterrent effect to other minor claims resulting from that reputation they establish for themselves. Similarly, if there was an insurer offering patent infringement defense insurance either as an add-on or part of general business liability insurance, then those insurers will have the resources and incentives to fight any minor claim made against any of their insured so as to establish a habit of not paying out minor claims.

Insurance is critical for businesses to survive the gamut of tort and employee suits they're constantly subject to. So long as there are plenty of small claims being made to make the transaction cost of insurance worthwhile, it can solve the patent nuisance claim problem, too. Also, with IP claims, insurers could offer only policies to cover the cost of defense, not any underlying liability or loss of business resulting from an injunction. They could also cap their payments to $1M in expenses. That's enough to mount a defense to a nuisance suit troll and make them go away.

What public sector solution(s) do you favor?

Much like states are immune from patent infringement under the 11th Amendment, Congress could establish an exemption for micro businesses (revenues under, say, $1 to 10M per year) from patent infringement. Any business that small can't afford to hire patent attorneys to defend themselves, and it isn't really worth it to the patent holder to litigate either, as the potential damages is less than $10 to 100K. For trolls suing or threatening such businesses, their purpose is solely to extract a nuisance payment, and while that violates Rule 11, no small business will be able to afford to hire an attorney to pursue a Rule 11 claim on their behalf. It would cost at least $100K and take at least two years to pursue a Rule 11 finding, which no small business is ever going to be able to take advantage of.

So, why not just categorically exempt micro businesses from patent infringement? To implement that, the law could require any notice letters or complaints alleging patent infringement to specifically inform the recipient/defendant that the exemption exists along with a form declaration that can be returned by the recipient swearing they qualify for the exemption. Any letter that doesn't include the notice and form of declaration does not qualify for purposes of putting the recipient on notice and any complaint served without the notice and form of declaration is to be dismissed by the Court on its own initiative without motion or appearance by the defendant. A party filing a lawsuit, when they file the affidavit of service, must also file an affidavit that the notice of exemption and form declaration was served on the defendant as well.

Also, one of the most critical problems is the issuance of so many invalid patents by the Patent Office. The PTO makes ten times as much money from granting patents as it does from denying patents, and examiners have a much easier time making their quota by granting patents, because no one objects, than from rejecting a patent and defending that rejection repeatedly. Until the incentives placed on the office and its employees to grant, rather than deny, patents are addressed, there will be too many invalid patents issued that can be strategically used by their holders to extract undeserved settlements from others.

What advice would you give to lawmakers about reforming patent law?

As you think about proposals, really ask yourself how what you're considering would help the small businesses who

can't afford legal work. Focus on that person, who's being targeted by the nickel and dime trolls (as I call them), which are a completely different beast from the home run tolls (as I call them) who want to sue deep pockets on purpose to get a big judgment. I'm not worried about the deep pocket trolls so much because the deep pockets they sue will be able to hire lawyers and defend themselves.

Eliminate injunctions entirely, as the patent system is an economic tool, not a civil liberty. There is always some amount of money that can adequately compensate a patentee for infringement (i.e. a trillion dollars would never be declined by a rational patentee). Thus, courts should not be focused on whether to grant an injunction, but instead what amount of ongoing royalty to require the infringer to pay.

Change the incentives at the PTO to grant patents. The decision to grant or deny a patent should be entirely uninfluenced by any macro or micro level economic concern. The fee structure and quota system both need substantial revision.

Laura Smith, Intellectual Property Manager

Names and details have been been changed to protect the identity of the author.

I was Intellectual Property Manager of a Boston-based venture backed company with around 500 employees and $40M/year revenue at its peak competing in a fast-paced environment. We were sued by an individual inventor, father-son team. They had filed a large number of patents and weren't doing anything with the technology.

We knew within about 24 hours of the original suit being filed that we did not infringe, because the inventor included a strongly worded disclaimer in his specification. So we did not settle upfront. From our perspective it was an open and shut case.

But it took a year to get to a claim construction where we could make the case. In this first year we spent about 100K a month. That was bad enough. But then the judge sat on it. During this time we went through discovery at a run-rate of $200k per month. We were a startup not making a profit. But if we were, that amount would have been a significant portion of it.

A year and a half later, the judge FINALLY issued our claim construction ruling. He was not able to provide any reasoning or analysis in his opinion and stated that, "with trial in this matter rapidly approaching, the court does not wish to add further delay to the constructions by its preparation of a complete opinion setting forth its reasoning and analysis." So, he realized he was taking way too long and decided to simply issue his ruling without a full opinion.

To make matters worse, his ruling made it infinitely clear that we CANNOT POSSIBLY INFRINGE. We knew this from the start. So not only did we spend $3 million in fees waiting around for a claim construction, but when it finally arrived it was clear the plaintiff had no case and the whole exercise was a waste. The plaintiff immediately stipulated to non-infringement.

Meanwhile, the guys filed suit over another two patents. They filed for these patents after the benefit of the Markman hearing during which the inventor sat there and got an eight hour tutorial on how to write a better patent on our

technology. He then went home and did it. Of course, he claimed priority to much earlier applications with 70 to 80 page disclosures.

When faced with the second suit, we knew we would spend all this money again to go into this entire process, and we would pay all that money and be worse off. So even though we had won the first time, the second time it was much more attractive to settle—in the low seven figures—than to fight.

We had run out of cash and were in talks with a Chinese company that didn't want to deal with it. All of the arguments—there's just no way in hell a jury will pay attention it. We had agreed on the price of the company. But then the buyer used the lawsuit as leverage to get the price down on the order of $10 million due to the outstanding lawsuit– 20% of the value of the company. They said this is a $20M liability which was bogus. But we didn't have the money to settle it.

What can be done?

Issue claim construction on the day of the ruling

Right after this case, the judge changed his practice. Now he issues claim construction on the day of the ruling. That would have saved us a lot of pain.

This should be a requirement, that you get it done right then. You'll never have a better understanding of the case than on that day. The longer you wait, the more unfamiliar the material becomes. Even if we had lost, we would have written the check and settled, rather than spending another $1.5M on discovery.

Advice to small companies: Chose a more affordable counsel early on

We made a huge mistake in choosing our counsel. We picked based on the personality of the lead trial lawyer. From day one, we were choosing based on the person that we wanted representing us at trial and the prestige of the law firm—and go to the board and say, "look we have a fancy lawyer." We should have done the reverse—chosen an unfancy lawyer from a much smaller firm, and with a fixed fee. If we got to the point where it looked like trial was likely, we could switch the lawyer 3 to 6 months ahead of time. We're a good example of how not to buy legal services.

Given all the issues you have to deal with at the beginning, it would be my recommendation to go much cheaper, or even have one that is willing to go for a fixed fee. You don't need the most prestigious firm to handle discovery.

Don Ellson, Private Equity Investor

Don Ellson (not his real name) is a Principal at a private equity firm with over a decade of experience investing in early-stage high-tech companies.

Two of our companies have sold patents to NPEs. The first company has been around a long time, so its patents are old. It has now been on the receiving end of three lawsuits by NPEs; in all three we were forced to settle. The suits were devastating to the company—they almost killed the company.

One suit hit the company at a very vulnerable time and almost put it out of business. The company learned a lot from these experiences and turned around and started licensing to NPEs. The first time they did it, they needed the money. But then—this is going to sound like prostitution—they realized this was an opportunity to bring more resources into the company... Since the first sale, they have periodically looked at their portfolio, and sold groups of patents to different litigation entities. Another lawsuit the company had was actually from a NPE that acquired a patent from another one of our portfolio companies. I learned this while in the due diligence process while investing in the company that sold. The person who sold that patent recently told me he regrets selling it, and the company has made a point of not pursuing any additional patent licensing.

Net-net, I wish we had never been on either offense or defense. I think the company would have been better off had it never been sued for infringement and never sold patents. In fact, the benefit of selling patents—their own use of the system—didn't offset the pain of the lawsuits.

I think patent trolls have a very negative impact for a couple of reasons. First, companies have been forced to spend a lot of money that would have otherwise gone into innovation, either because they are defending patents, or filing and managing patents—an expensive process in its own right. It's also creating friction in the acquisition process. Buyers are warier because they are worried about buying a company and getting sued. On a lot of fronts, it's been a negative on innovation and I don't see it anywhere as driving innovation. In certain areas—in pharma—patents work. In the software world, it's very much been a negative. I'd rather there be no patents than the current system. Everyone I know shares the view that trolls are having a negative impact on innovation.

Kate Endress, Founder and CEO of Ditto.com

Kate Endress is an athlete turned investor turned e-commerce entrepreneur. After graduating from Stanford Business School in 2011, Kate cofounded DITTO.com, an ecommerce site selling designer sunglasses and eyewear which features cutting edge new video "try-on" technology.

Who are you and why did you partner with a patent troll?

I am the CEO and Cofounder of DITTO.com, a company I started to make ecommerce work for verticals that had currently not migrated online – those with fitted merchandise. After raising a seed round, my founders and I worked countless hours to build our team, file for patents on our technology, and build a scalable website. We launched our site in April 2012 featuring fitted eyewear and were off to the races.

We were planning to raise a Series A round during the summer of 2013 but before we could, we were sued for patent infringement by our biggest competitor, Wellpoint, who owns 1-800-Contacts and Glasses.com. Just like that, we were faced with an "injunction" threat from a $25B competitor. I was terrified our years of hard work were for naught.

As it turns out, after seeing our technology, Wellpoint launched its own offering and immediately bought a patent which they are now using to sue us. It took me some time to come to grips with that fact that a $25B healthcare

company who carefully crafts the image of being compassionate and caring towards the consumer would go on the aggressive against a 13-person startup. I can only speculate that they fear that the patents we filed (which take years to issue!) will become a weapon towards them down the road. But if they would have just called me before filing a lawsuit against us, they would know we applied for those patents for defensive purposes, not offensive ones. I care more about building a superior customer experience than I do about going after them with patents.

I had to come up with a defense strategy. After doing our own assessment and talking with a host of talented lawyers, we still don't think we infringe. But how expensive it would be! Every attorney I spoke with estimated it would take several million dollars over several years to prove that we didn't infringe. Obviously we weren't a position to be able to afford that! I stopped all marketing spending to ensure every dollar went to support our litigation, I laid off several employees to further stem costs, and then I went searching for someone who could help.

I worked my tail off to find a lawyer to work for equity on my case, to no avail. Several were willing to take half equity or quarter equity in my company but it wasn't enough given their outrageous hourly fees. I had one lawyer friend who was going to quit his job at his big firm to work to for me, but I realized one young litigator from Indiana wasn't going to be enough to battle this $20B company in Utah. When you get sued in Utah, you must have a Utah-based litigator to defend you, which was difficult given that we are located in the Bay Area. I also worked hard to find an investor to fund our fight, but the feedback was consistent: "You have a $25B competitor who put a target on your back. Why wouldn't they just keep purchasing patents to keep suing you to run you out of business? It's too risky." The fact that legal fees are often sunk costs (given that there isn't a fee-shifting mechanism in place yet) also makes it harder to raise money for litigation.

I even went so far as to run a sale process for my business, which was incredibly depressing. Buyers were dinging our valuation $3 to 4M for the lawsuit, so I felt we couldn't even sell it for what it was worth.

It was a challenging five months as I figured out a game plan that gave us a path forward and a shot. That solution was a deal with Erich Spangenberg. Many people think of Erich as a patent troll. I met him while speaking as a panelist at a patent reform conference a few months ago and my first reaction to him was probably exactly what you think. I had a clenched jaw and a red neck (I'm the worst poker player ever because I literally wear my emotions). But we got to speaking and he told me that as he heard me speak, he realized that there was an incredible opportunity. He went on to explain his plan to take on my case, pay for all legal expenses associated with it, and free me up to run my business in exchange for equity in my business on a contingency basis for about half of what I was projecting it would cost me in cash to fight it myself. I was skeptical at first, but the more diligence I did on him and this deal, the more I realized it was a very smart (if not opportunistic) market-based solution to my problem. His offer made sense because 1) it makes us less vulnerable due to his reputation and resources, so it reduces the chance of being sued over and over; 2) the price we negotiated was fair given the circumstances; 3) he has real domain expertise and an arbitrage opportunity on costs; 4) he has a much higher likelihood to negotiate our lawsuit away given his resources and assets; 5) I could go back to running my business and not be neck-deep in litigation for a few years, which would have created huge negative consequences for my company and team.

Erich Spangenberg sees this as an opportunity to get equity in great startups for doing what he does best. So until the day that we have a properly functioning patent system, his solution is my best option. When a huge company puts a target on your back, sometimes you need to powerful friends to have a shot at surviving.

Brad Burnham, Union Square Ventures

Brad Burnham is a managing partner at Union Square Ventures (USV), an early stage venture capital firm based in New York City focused on young companies that use information technology in innovative ways to create high growth business opportunities. Over the past 10 years, it has been directly involved in the development of 61 companies and has, through its prior firms, participated in the launch of over 120 companies.

Union Square Ventures

Union Square Ventures, founded in 2003, is a venture capital firm based in New York City.

The firm currently manages $450,000,000 across three funds. Companies in Union Square Ventures investment portfolio include Twitter, Tumblr, Etsy, Foursquare and Kickstarter, among others.

NOTE: The following is adopted from testimony provided to the FTC/DOJ at their workshop on Patent Assertion Entities on December 10, 2012.

I'm an investor who invests primarily in internet services. With that I come to this question with a unique perspective. We were, for instance, the first institutional investor in Twitter, Tumblr, Foursquare, Etsy, four companies that have now created over 1,500 jobs. I have become very involved in the patent question, because about one-third of our portfolio—we have 45 companies in the portfolio—has been sued by someone. About almost half has been given some kind of demand letter by someone.

Twitter for instance has 14 active patent actions against it—once you get to a certain scale, everybody comes out of the woodwork and asserts that you have violated their intellectual property. What's frustrating about this from my perspective as an investor is that none of these companies that we have invested in knew about these patents. And I've heard arguments made that, well, gosh, they were irresponsible. They could have searched the patent office to find these patents. But in fact, that really is not true. Most of the patents that have been asserted were asserted from an entirely different field.

I'll use one example of a company that is not entirely out of business, but is a tiny shell of its former self as a result of being subjected to two patent suits in rapid succession by two different entities, neither of which would fit the definition of an NPE or a PAE. Both were failed entrants. Both were failed start-ups. The company was in the business of providing advertising services to major brands. The first suit that we were hit with was from a company that was not in the business of advertising services at all. It was a business-to-business company that was providing software, not services, to a completely different industry—law enforcement. There's no way we could have searched for that patent.

The second suit we were hit with also was so completely different than what we were doing. That hurt when they sued us. But it didn't have a huge effect. They hadn't gotten an injunction.

But then they went on to sue our customers. So these are people like American Express and American Airlines, and General Motors. The company in question employed 70 people. We were doing about $10 million in annual revenue,

and when they sued our customers, this was a nice to have, not a need to have, it was a marketing program for the customers. The suits cut our revenue in half in three months. And so we couldn't sustain the 70 people that we had on the payroll, and so we had to cut the company in half.

And as we fought this patent suit, we tried to indemnify our customers. Our customers said "Thanks, but I mean, it's not going to help. It's not worth it for me. I don't want to be involved in this. You figure it out."

And so ultimately we were not able to raise additional capital into the company, and we ultimately shrunk the company back to five. The company now has five people servicing their existing clients, and no longer employing those 70, or 65 people that they had employed.

Appendix C-1: Patent Defense Service Providers/Offerings

(Each description provided by listed entity.)

Name/Service Provider	Service	Description & Status	Cost/How To Participate	When to Use Their Services, Turnaround Time, and Contact	Target Client Profile
Patent Troll Law Clinic Network (PTLCN) (Application Developers Alliance, a trade association)	Pro bono legal services to small companies	Multistate network of law school clinics that aims to provide pro bono services to small companies that have received a demand letters from or been sued by a patent troll. Students (advised by faculty and private law firm advisors) will conduct prior art searches, infringement analyses, and related research, and advise client entrepreneurs regarding legal options. Students will also prepare petitions for reexamination/review that challenge patents owned by trolls. Represents privately and publicly held entities, and non-profits. Launch Date: Fall 2013	PTLSCN does not charge, and neither do most (or perhaps all) law school clinics. However, clients may be responsible for various fees (e.g., court filing fees) associated with their individual legal concern.	Upon receiving a demand letter, and hopefully before you contact the demanding troll. Contact: Chris Beal, chrisb@appdevelopersalliance.org; devsbuild.it	Developers and small companies threatened by patent trolls.
Trolling Effects (Electronic Frontier Foundation, a technology policy non-profit)	Demand letter registry and self-help site	Essentially a database of troll demand letters that recipients have uploaded. The point is to provide a free resource for potential and actual troll targets to inform themselves about the senders' identities and modus operandi. The website also provides guides to the patent system and reform. Thus, no direct legal assistance is provided to those under attack, but it creates transparency around a niche of litigation that seems to thrive on a lack of such in addition to providing general information about the litigation process for targets that are under attack. Non-profit (project of EFF and coalition). Launch Date: July 2013	Free. The primary audience is demand-letter recipients who are encouraged to submit their documents, browse other letters, and learn more about their situation. However, to help facilitate further research, we've made it easy to export public data from the website so academics, journalists, and policymakers can do more thorough research.	Upon receiving a demand letter, or if an entity would like to learn more about patent trolls. Submitted demand letters are published within days. Otherwise, there is no turnaround time. Contact: Adi Kamdar, adi@eff.org; trollingeffects.org	Recipients of demand letters.
PatentFreedom	NPE intelligence	A database of information about non-practicing entities (NPEs) and the litigation that they bring. PatentFreedom collects information about NPEs, their background and network of affiliated shell entities, the patents that they assert, the defendants they attack, and the attorneys that fight for and against them so that targets can plan how they will respond to a demand letter. Companies that want access to this information can subscribe to the service. Additionally, PatentFreedom offers custom research and advisory services for clients that desire it. Subscribers can also contribute to the database themselves. Privately held. Launch Date: 2008	A basic subscription costs $10,000/year, and the intended audience are companies with "limited NPE exposure", or smaller businesses: to be eligible for the basic subscription, a company needs to have faced no more than 7 NPE-induced litigations over the last three years. More expensive plans exist for companies with higher NPE exposure and custom research is priced on a case-by-case basis. Companies access the database and contribute to it through the service's website. The typical audience includes both businesses that are targeted by NPEs and the law firms that deal with the litigation.	Most clients will use the service upon being hit with a demand letter so that they can learn more about the NPE that sent it. Other clients, though, will use the information on the website to perform risk analysis before engaging in activities that may draw the ire of NPEs. Submissions are posted within the week; otherwise, once a company has a subscription they have access to the information. Contact: info@patentfreedom.com; www.patentfreedom.com	Law firms and businesses that deal with troll-induced litigation. The baseline seems to be 7 NPE-related cases within 3 years.
That Patent Tool	Demand letter registry and self-help site	Similar to Trolling Effects, That Patent Tool is a website where companies can upload demand letters that they've received from trolls, see demand letters that others have submitted, and anonymously discuss issues related to trolls and demand letters. The site will provide members with a "Quarterly Troll Review" that will draw conclusions about the trolls based on the materials that have been submitted. The QTR will contain predictions about possible future troll targets, as well as interviews with industry experts. Privately held. Launch Date: June 2013	The site as-is is free to use, though users need to become members. There are future products and services in development that may cost members, though the first 50 to sign up for and submit demand letters to That Patent Tool receive all future tools free.	Upon receiving a demand letter. Contact: Steph Kennedy, skennedy@898data.com; www.thatpatenttool.com	Any company, small or large, that has received a patent demand letter. Law firms who, on behalf of their clients, would like to track patent trolls.

Name/Service Provider	Service	Description & Status	Cost/How To Participate	When to Use Their Services, Turnaround Time, and Contact	Target Client Profile
Article One Partners	Crowd-sourced patent research	Article One Partners, the world's largest patent research community, has revolutionized the transparency of patent data. Clients use the power of the AOP crowd to defend in litigation and assess validity positions for all use cases across the patent lifecycle. Privately held. Launch Date: 2008	Article One Partners has products to fit the budget and litigation stage needs of clients, from $2,000 to $7,000 for private searches to $25,000 for full crowdsourced research. AOP also offer strategic memberships to clients from worldwide brands to start-ups.	Services may be used in pre-litigation or litigation defense, USPTO proceedings such as Inter Partes Review or Covered Business Method patent review proceedings, ITC defense, due diligence, analysis of industry standards, evidence of use, patent purchasing, or customized to meet clients' needs. Article One Partners research can be completed in as little as two business days, and generally is completed in 5 weeks with the crowd optimizing the research. Contact: www.articleonepartners.com; www.go.articleonepartners.com/request-a-quote	Clients range from individual app developers to global companies, including 18 of the top 25 companies most pursued by NPEs.
Ask Patents (StackExchange)	Crowd-sourced question-answer service for U.S. Patent Applications and U.S. Patents	Ask Patents is a free web service where users both pose questions relating to the patent system and answer the questions of others. Prior art questions represent the most frequently-posed requests, but questions are often asked about other areas, such as patentability and infringement. The community is focused on prior art searches for software patent applications in the U.S., but, given the format, it can potentially address any issue that the patent system could present an innovator. The community is focused on finding prior art for US Software Patent Applications. However, anytime someone posts an issued software patent which is currently in litigation by a known troll they see a lot of answers. Because of the uniquely strong SEO position of Ask Patents (and the Stack Exchange network generally), if a prior art request has been posted on Ask Patents it is very likely to be one of the top two results on Google and other search engines. Examiners are free to google a patent number as part of their non-patent-literature diligence and they are free to look at the answers on Ask Patents and form an opinion as to whether the answers are good prior art for the subject application. Non-profit. Launch Date: 2012	The website is free. Users simply visit the site and ask/answer questions.	Anytime you have a concern about a pending U.S. patent application, whoever it is held by. The first answer to a prior art search question is usually posted within 3 hours of the question's posting. Contact: Micah Siegel, msiegel@stackoverflow.com; patents.stackexchange.com	Entities concerned with a pending U.S. patent application
Defensive Patent License (DPL)	Patent License	The DPL is an off-the-shelf license that focuses on defensive commitments. Each licensor agrees to offer licensees full royalty-free access to her portfolio in return for a reciprocal commitment to do the same. With each new licensor, the network of permanently defensive patents grows. Entities outside the network can still be pursued offensively. Importantly, the DPL's obligations "travel with the patent" so that in the event of sale or other transfer, its new owner must also abide by the DPL's terms. This ongoing obligation could help limit lawsuit risk, especially for the risks posed by patent trolls, as a patent that can only be used defensively is likely to have less value for a troll. Planning to launch as a non-profit. Launch Date: November 2013 (Anticipated)	The license will be freely available. There are also plans for a pro bono network of patent prosecutors who will waive their fees for patentees committed to the DPL.	Companies should use the DPL as part of their overall patent strategy. Contact: Jason Schultz, SchultzJ@exchange.law.nyu.edu; www.defensivepatentlicense.com	Any company that wants to make a commitment to defensive patenting and use network effects to limit patent risk overall. The DPL is especially well suited for companies and individuals who do not plan to monetize or assert their patents offensively.

Name/Service Provider	Service	Description & Status	Cost/How To Participate	When to Use Their Services, Turnaround Time, and Contact	Target Client Profile
Open Patent Non-assertion (OPN) Pledge	Legally-enforceable non-assertion agreement	The OPN Pledge is an agreement by Google (for now) to not assert certain patents against those using them for open-source software. Once a patent has been pledged, the pledge becomes legally binding on whomever owns the patent; thus, if Google were to sell or otherwise transfer rights to the patent, the pledge would still apply to the subsequent owner. Anybody can then use the patent without fear of a legal attack as long as they meet the conditions of the pledge. Google also retains the right to defensively terminate the pledge if one of the developers or users attacks or benefits from a patent attack against Google. This allows Google to fight back against companies that use shell corporations or proxies to assert their patent rights. Ideally, in the future, more patent owners, such as large corporations, developer organizations, and newer growing companies, will pledge their patents along with Google's in order to encourage innovation in the open-source environment. Publicly held (originally developed by Google, but is available for any other patent owner to adopt). Launch Date: March 2013	As long as a developer or user is utilizing the patent rights as the pledge dictates, there is no cost. For companies wishing to adopt the pledge, there may be some costs associated with selecting patents for pledging.	Contact: OPN Pledge Team, opnpledge@google.com; g.co/opnpledge	Anybody developing or using open source software is a target "client" (or, more appropriately, "pledge recipient"). Similarly, the OPN Pledge is targeted to any patent owner wishing to use patents in the service of open source software ("pledge adopter").
License On Transfer (LOT) Agreement/ Google	License upon Transfer of Patents	Google is gathering a group of companies together to enter into this LOT agreement, which will be administered by an independent organization. Under the terms of the LOT agreement, every LOT User agrees that when it transfers a patent, the transferred patent automatically becomes licensed to the other LOT Users existing at the time of the transfer, except (i) a transfer that is part of a legitimate M&A activity or (ii) a transfer to another LOT User. This structure protects LOT Users from being subject to the extraction of patent rents by the entity (e.g., a patent assertion entity) to which the patent is sold. Launch Date: Fall 2013 (Anticipated)	The parties to the agreement will split the administrative costs, which are expected to be low and capped (less than $20k/year/party). Potential members need only sign on to the agreement and pay their share of the administrative costs.	Your company should consider joining the LOT community if it: a) Is optimistic about is future, e.g., has large or growing revenue or plans to have large or growing revenue b) has a PAE problem or is likely to have one in the future; or c) places greater value in freedom to operate than in pure patent sales to PAEs, e.g., if your company doesn't make a noticeable portion of its revenue from pure patent sales to PAEs. Contact: LOT@google.com; www.google.com/patents/licensing/lot	Any operating company or startup that is optimistic about its future.
Innovator's Patent Agreement (IPA)	Agreement to only assert patents defensively	The IPA is a new way to do patent assignments that keeps control in the hands of engineers and designers. It is a commitment from Twitter, and other companies, to their employees that patents can only be used for defensive purposes. If the patent is asserted for any other reason, the IPA member will need the inventor's permission. Privately held. Launch Date: 2012	Free	Companies should join the IPA as part of their overall patent strategy. Information: https://blog.twitter.com/2013/brewing-our-first-innovator%E2%80%99s-patent-agreement-patent-0	Company should consider joining the IPA to assure their employees that their patents will be used only as a shield rather than as a weapon.
Docket Navigator	Searchable online docket database	Four main components are included in the service: (1) The Docket Report (daily email reporting activity in the district courts, ITC and PTAB) (2) Docket Navigator (searchable online database) (3) Docket Alerts (customized saved searches that alert you when new patent litigation activity occurs) (4) New Case Alerts (intra-day notifications of new patent cases filed). Privately held. Launch Date: 2007	The service utilizes a subscription-based pricing model based on the number of users. For example, a single user is $55 per month, and the aggregate monthly cost gradually increases based on the number of users, up to 100+ users, priced at $1,000 per month.	If concerned with pending or potential patent litigation. Contact: Amy Towell, amy@docketnavigator.com; www.docketnavigator.com	Companies and individuals concerned with patent litigation.

Name/Service Provider	Service	Description & Status	Cost/How To Participate	When to Use Their Services, Turnaround Time, and Contact	Target Client Profile
Unified Patents Inc. (Unified)	NPE assertion and litigation reduction through deterrence	Unified reduces the risk and cost of NPEs on behalf of companies in specific technology areas of high NPE activity. Unified monitors NPEs in these areas and uses annual subscription fees toproactively defend against NPE activity. Rather than encourage NPEs through settlement, Unified deters or eliminates future NPE activity, thereby reducing NPE risk and cost. Privately held. Launch Date: Early 2013	Membership is free for startups and costs a modest annual fee for large companies. Unified's members only subscribe to (and pay for) technology areas relevant to their business, thereby delivering strategic ROI.	Unified is actively defending a number of technologies experiencing high NPE activity. Companies can join Unified at any time to reduce their risk and cost of NPE activity. Contact: Kevin Jakel, CEO, kevin@unifiedpatents.com; www.unifiedpatents.com	Any company in a technology area which has or is concerned with NPE activity.
Gerchen Keller Capital	Litigation finance solutions	GKC offers defense-side financing solutions for all types of legal claims, including patent claims. In addition to investing in meritorious litigation, GKC assists parties in evaluating the strengths and weaknesses of litigation claims or defenses, the potential costs of litigation, the range of potential damage awards, and the expected economic benefit or cost of maintaining particular claims or defenses. Privately held. Launch Date: April 2013	The cost of services depends upon a variety of factors, including the merits of the claim or defense and the estimated time to a resolution. With respect to small companies, the arrangements can provide for repayment over time or compensation through equity or other means.	Funding alternatives are available from the moment litigation is contemplated or threatened until after final judgment is entered. Contact: Travis Lenkner, tdl@gerchenkeller.com; www.gerchenkeller.com	Clients are commercial enterprises that want to offset risks associated with litigation and litigation defense. A typical case involves potential damages of at least $10 million.
RPX	Preemptive open market patent acquisition	The RPX network can provide measurable risk and cost reduction for any company experiencing NPE litigation. All members of the network pay an annual fee (scaled to reflect the size of the member company) which is used to acquire and clear high-risk patents from the open markets and out of active litigations. Publicly held. Launch Date: 2008	Membership fees start at $75,000, and scale depending upon size of the company. In certain cases, RPX will consider special circumstances for start-ups or early-stage companies. RPX Insurance is also priced to reflect small company circumstances and is based on specific forward-looking risk for each policyholder as determined by their actuarial models.	RPX's preemptive open market patent acquisitions are the most efficient way to deploy the network's capital and provide the most attractive ROI for members, so joining the network early and benefiting from their ongoing acquisitions is the most effective strategy. Member companies also benefit from RPX's ability to intervene in active litigations. The goal is to provide members the broadest and most cost-effective risk mitigation possible. A company can become an RPX member at any time. Ideally, contact with RPX would initiate before engaging legal counsel. Contact: info@rpxcorp.com; rpxcorp.com	Any company facing a litigation claim or wishing to resolve a current or potential assertion/litigation without incurring high defense or settlement costs. Whether RPX serves as the intermediary to purchase out of the open market or in relation to a litigation, RPX brings to bear its expertise to help ensure that its clients are able to take a more efficient and cost-effective approach to handling NPE litigation.
IP Claims Management (ipCM)	Litigation financing, management and strategic advisory	For smaller companies that are in the early stages of dealing with actual patent litigation. ipCM also offers a unique financial product that is priced to reflect the imminent risk of each particular company with payment only upon success. Privately held (an affiliate of IPNav). Launch Date: May 2013	Payment can be in equity (typically half of what the expected legal bill to be valued at the company's latest rounds valuation) or cash. If ipCM fails, the company pays nothing.	Companies can use ipCM services at any time--before or after litigation is commenced. Evaluation within days. Contact: info@ipcmadvisors.com; Website forthcoming	Ones that are tired of paying law firms with valuable cash with no guarantee of success.

Name/Service Provider	Service	Description & Status	Cost/How To Participate	When to Use Their Services, Turnaround Time, and Contact	Target Client Profile
Open Invention Network (OIN)	Fully paid-up royalty licence	Provides a fully paid-up royalty free license to OIN pro-competitive defensive patent pool in exchange for a commitment to forbear litigation around Linux and to cross-license its own patents to other members. OIN holds over 400 U.S. patents and applications and has nearly 600 licensees that are part of its growing community of entities committed to patent non-aggression in open source and Linux. Privately held. Launch Date: 2005	Free to become a licensee.	Anytime your company is engaged in Linux or open-source activities. Contact: Keith Bergelt, kbergelt@openinventionnetwork.com; http://www.openinventionnetwork.com/about.php	Any company with an interest in open source software.
Allied Security Trust I (AST)	Defensive patent availability monitoring and purchasing	Monitoring of the high tech secondary patent market and collective defensive purchasing of patent assets. Launch Date: January 1, 2007	For companies $4B or larger in annual product/service revenue, $150K one time fee plus $200K annual fee. For companies between $250M and $4B, $150K annual fee. Membership fees have the potential to go down as AST grows.	When your company wants a cost effective solution to monitor patents available on the secondary patent market and to secure freedom to operate through a defensive license at a lower cost through a collaborative bid with other similarly situated operating companies. Contact: Linda Biel, lbiel@ast1.com; www.alliedsecuritytrust.com	Operating companies in the high tech industry.

Appendix C-2: Tactics for Responding to Patent Assertions

To disseminate best practices and information we developed a list of tactics for responding to a NPE suit culled from interviews and research. We then solicited advice from experts about how these tactics fare in practice. We received comments from attorneys practicing at lawfirms, in-house counsel, solution providers, and a public interest lawyer and summerized their feedback in the "Ask the Experts" column.

Tactic	Stage of Dispute	Description, Timing & Example, if Any	Resources Needed	Ask the Experts - Comments on Each Tactic
Third-Party submission of prior art in a pending patent application	Anytime you have concerns about a pending patent application	To challenge a patentholder's portfolio, look for their pending applications and consider submitting prior art in the worrisome applications. The window of submission is the later of: 1) 6 months following publication of the application; or 2) before the first Office Action. If for some reason there is a Notice of Allowance earlier than the above, the submission must be made before then. Timing: StackExchange founder put in "10 minutes" and had their first "patent kill" in 2 months. (http://www.joelonsoftware.com/items/2013/07/22.html)	Prior art, analysis of the prior art references; Filing fee of $180 for more than three references, legal help to find and analyze the prior art would pose additional expenses.	You don't have a guarantee that the patent office will see the art as invalidating, and if the patent is issued notwithstandng it, the reference loses some of its ability to be used to challenge the patent later. Need to do a robust prior art search before undertaking this tactic.
Making Examiner aware of the prior art	Anytime you have concerns about a pending patent application	To challenge a patentholder's portfolio, use a site like AskPatents to ask for prior art to be provided on a patent. The supplied art has a reasonable chance of being considered by the patent office because of AskPatents' visibility within the USPTO examiner community. Timing: You should see impact, if any, in the prosecution history fairly quickly	Patent number	This merely suggests, not requires, that the PTO look at prior art, assuming some is provided in response to your question.
Indemnification clauses	Anytime you are entering a purchase agreement	Anticipate PAE claims during the procurement process via indemnification clauses. Timing: Preventative. For example, an indemnity clause in a vendor agreement can protect a company from PAEs by requiring the supplier of the product or service that gives rise to the patent claim to defend the company. An indemnification provision properly allocates risk to the supplier, the party that is in the best position to understand and assess the risk of a claim, and provides an economic incentive for the supplier to battle a PAE that the end user company may lack (http://eyesonecomlaw.blogspot.com/2013/06/indemnification-clauses-critical-to.html).	Varies, but at least cost of negotiation	Can't hurt to ask, especially if you are a big customer. If you are in a position to do this, it's great. But given the current state of the patent system, I can understand why suppliers don't indemnify.
Lobby	Anytime	Contact and arrange meetings with the appropriate members of Congress and/or their staff to explain defendant positions and needs. Timing: Long play	Minimal	Congresspeople are trying to get educated on this issue now so it's a good time to share your experiences with the patent system.

Tactic	Stage of Dispute	Description, Timing & Example, if Any	Resources Needed	Ask the Experts - Comments on Each Tactic
Industry Alliance	Anytime	Identify sympathetic or supportive trade groups and non-profits . Get connected to resources, recommendations, and policy actions. Timing: Long play	Joining is usually free	See "Big Tent" and related letters for groups engaged in patent reform. Those focused on startups include EFF, Engine Advocacy, the App Developer's Alliance, and 1776. See http://www.patentprogress.org/documents/big-tent-letter-to-congress/; https://www.eff.org/document/open-letter-shield-act; For the web community, I urge you to join The Internet Association, which is actively working on trying to solve the patent troll problem.
Plead Poverty/Seek an early and low settlement	Demand/Suit	Inform the PAE about the company's financial situation and that you really aren't worth their time. Ask what it will take for them to go away, and educate them that there's really no revenue from the accused products (http://techcrunch.com/2012/10/07/10-ways-startups-can-deal-with-patent-troll-demands/). Timing: Can quickly change settlement dynamic	Minimal	If you say you have no revenue, you'd better not be bluffing, and must be ready to file bankruptcy if the troll sues you to call your bluff. Also see: If you have limited money, invest some time in educating the other side: lawyers will read that you completed a funding for $3 million and then the lawyers assume you have a piece of that laying around that you can give to them. Education is critical and you have to talk a language they understand. There are many patents that are valid and it is a mistake to not recognize that sometimes taking a license is the wise thing to do. I don't get large or small companies that run up a meaningful legal bill battling on every front (non-infrigment and invalidity) only to take a license after they have run up a big bill. I think the better thing to focus on is that as a small company our legal system is not set up for you. Even if you "win" after 24 months, so what?
Do your research	Demand	Use resources to find out as much as possible about the lawsuit. Dig through documents, court dockets, and websites to find out everything you can about the people behind the lawsuit. Timing: Will immediately help you inform your strategy. PatentLens, Google Patents, and Freepatentsonline.com are recommended as more user friendly than the PTO for getting information about the patent. This site has good instructions on how to use the patent office search engine: http://www.lib.utexas.edu/engin/patent-tutorial/tutorial/pattut.html. When drilling down into who owns the patent, you need to get the articles of incorporation to see the owner of the LLC or partnership. Most states have a corporate registration search engine. This site has links to all the state registration search sites, which are generally free: http://www.coordinatedlegal.com/SecretaryOfState.html. See also http://pandodaily.com/2013/07/26/how-to-slaughter-a-patent-troll-in-5-steps/.	Minimal	You, or If you have a lot of money, your lawyer, will do this. Getting your hands dirty, particularly in the prior art, is the key to success. Definitely, spend some time getting to know the art, who was doing what before the critical date, and reach out to real people to talk to them about helping you with their time and their testimony.

Tactic	Stage of Dispute	Description, Timing & Example, if Any	Resources Needed	Ask the Experts - Comments on Each Tactic
Keep a low profile	Demand/Suit	For small companies, there's a reasonable chance that they're only one of many receiving a demand letter. Take a look at the patent and the allegations; if you can form a reasonable belief that a license is not needed, file the letter away (http://techcrunch.com/2012/10/07/10-ways-startups-can-deal-with-patent-troll-demands/). Timing: It may fail quickly, success in the form of the plaintiff never calling you back takes longer	Minimal - engineer time	I call this the "prairie dog" rule -- the one that comes out of the den gets eaten. If many letters are being sent, keep a low profile while doing the bare minimum to avoid willful infringement (though hard to know what that is at this point). Ignorance works in some cases and should be the initial response. Because if you talk to a troll, you will open up a long conversation with them that will result in your paying them or a lawyer money. Learn to live with the open threat.
Conduct prior art search	Demand/Suit	Conduct prior art searches to encourage PAEs to settle during earlier stages of litigation or to ward off a demand. Prior art searches can be done on some or all of the patents held by the PAE, whether or not they were asserted. Do it in house - look esp. for non-patent prior art! Some engineers have technical manuals, if you go the extra mile you'll find stuff. Timing: days to weeks to complete the search. BlueWave Computing paid a law firm $5,000 to conduct a prior-art search of Project Paperless' patents. When founder Steve Vicinanza had enough prior art, he warned Project Paperless that he had evidence that invalidated the patent and was going to request a reexamination (http://www.inc.com/magazine/201202/kris-frieswick/patent-troll-toll-on-businesses.html). Having prior art gave us a huge confidence boost in fighting them. If nothing else, we knew we could initiate a patent re-exam and hold off the litigation for a long time. The settlement had no conditions on our side other than to drop our countersuit.	Patent number; 5 - 12K or cheaper if done in-house or via AskPatents (free), competition among searchers "is pretty intense"	This is key to obtaining leverage in a case. The patents are the only asset PAEs own, and typically their plan is to exploit it against many defendants in order to get a good rate of return on the investment. If you can successfully attack the patent, then you have a great chance of success in the case or at least reaching a low cost settlement. Need to involve your engineers and try to find good system art that has not been before the PTO. Newer companies should look to the older companies in their space for system art. Yahoo!, Google, and Amazon and others are typically willing and able to provide early system art in the Internet space. Don't be afraid to reach out to those companies for prior art. At the demand phase, don't spend a lot of money on it. If it's easy to find a piece of prior art, go for it, but haven't heard that many stories of hearing the troll go away. If can do it efficiently, may change the dynamic.
Collaborate/Join as defendants	Demand/Suit	Combining resources allows for co-defendants to share in litigation costs, prior art, information and overall strategy. By establishing an efficient collaboration model, litigations costs can be split amongst many defendants. Additionally, defendants may seek contributions from interested third parties. Timing: May not shorten anything, except by allowing a better invalidity defense for less money. Chris Friedland of Build.com began to contact other PAE defendants, most of which were not direct competitors, and asking them to join with him and share resources. "I would tell them that we have mutual interest," said Friedland. For one suit, Friedland managed to persuade all the co-defendants to fight, even though many initially wanted to settle (http://www.inc.com/magazine/201202/kris-frieswick/patent-troll-toll-on-businesses.html).	Relatively easy. Run Internet search for blogs, news articles by journalists and call the authors. Same for PACER for current litigation. People want to talk and share information as far as NDAs permit.; No out of pocket cost	Collaboration has no downside except for time spent on joint defense activities. Makes sense even if all that happens is informal telephone communication. Be aware that non-privileged communication is discoverable, however. As part of a joint defense, a small company can coattail on larger defendant and "go on life support." But logistics can be complicated. Its important for parties to have their interests aligned. In short: be sure you are not the last one left at the dance.

Tactic	Stage of Dispute	Description, Timing & Example, if Any	Resources Needed	Ask the Experts - Comments on Each Tactic
Post grant challenge at the PTO (reexam, CBM, IPR)	Demand/Suit	Filing for a post grant administative challenge (patent reexamination, inter partes review, post grant review, covered business review) request allows both target companies and third parties to invalid patents held by PAEs after they have been issued, without having to litigate. Further, requesting that nonasserted patents be reexamined sends a strong message to PAEs. Timing: Typically have Board ruling on IPR/CBM Review in 18-24 mos. Example: Rotatable sued Rackspace in February 2013, and then offered to settle the claim for $75,000. In return, Rackspace filed an inter partes reexamination (IPR) request with the USPTO to challenge the validity of a patent based solely on the existence of prior art. Rackspace believes that an IPR is the best way to combat this particular PAE on behalf of itself and all the app developers who are also targets.	Ex parte requires prior art and brief to file, IPR requires search, brief, and an expert decl. to file, 25-50K; IPRs require 75K to get on file including an expert declaration, 200-300 total. Standing and biz method patent needed to file a CBM, around 350K, but it also contains more favorable estoppel provisions	You should have a clear idea of what your objective is with the patent. Only do IPR if prior art is strong, because of collateral estoppel. Upside: chance to narrow or knock out the patent. Downside for all: if the patent survives, it will be stronger and the patentee's leverage, greater. Doesn't stop them from asserting another patent. Stay won't always be granted, sometimes it will. Cost is one way to decide between ex parte and IPR. Ex parte will be much cheaper, but comes with the greater possibility that the patent will survive in some form. I would only use an ex parte if you have to because IPR is not available for that patent or if the patent is not asserted against you and you just want to make life difficult for the business model of the patent owner. I'm not a big fan on relying on the PTO to get it right in any circumstance. I'd rather rely on myself.
Contact the manufacturer	Demand/Suit	When you are sued because you used someone else's technology, contact the supplier of the allegedly infringing technology and demand that they indemnify you. Timing: May take a copule of months of sustained effort to get real help. Example: Steve Vicinanza of BlueWave Computing filed a third-party complaint against four of the companies that actually made the allegedly infringing scanners. That could have compelled the manufacturers to get involved in the case (http://arstechnica.com/tech-policy/2013/01/patent-trolls-want-1000-for-using-scanners/).	Minimal	Many trolls that exclusively sue customers fear this more than anything else. And don't let the niceties of the contract dissuade you from asking for voluntary help. Business pressure is real, and if your company is important enough you may get help despite the disclaimers, etc. Useful because smaller supplier might not know. Most manufacturers want to protect their customers and stand-up for their products. So contacting what should be the real party in interest and getting them to act is a great tactic. Companies should think about that more proactively ... when entering into commercial contracts, make sure to seek appropriate indemnities for coverage of patent litigation.
Public relations	Demand/Suit	Tell your story. Companies should commission and draft articles explaining the defense's version of case and why lawmakers and the public should support the defendants' position. Timing: Can take time or be relatively fast. Todd Moore was able to get Lodsys to drop its suit rel. quickly. See http://toddmoore.com/2013/07/02/why-im-not-paying-the-troll-toll/. Draft articles that highlight the PAE's role in perpetuating trolling strategy, and emphasize the "obviousness/breadth of patents asserted, tax-like implications of trolling activity on everyday life, extortionary aspect of defense-cost settlements, [and] fundamental unfairness in venue shopping in many patent cases." Articles should then be submitted to legal, technology and general interest magazines and journals. Any public comments should also actively discourage trolling, attempt to share information, and advocate for patent reform	Minimal	Scorpion tactic. Be the ringleader of the defense group. Encourage others to demand help from manufacturer/suppier - multiple demands are what get results. Blog, reach public interest groups, local reporters - editorial boards and tech beat reporters. Call public interest groups like EFF, etc. who can blog your story and get it out for reporters to pick up.

Tactic	Stage of Dispute	Description, Timing & Example, if Any	Resources Needed	Ask the Experts - Comments on Each Tactic
Complain to State Attorney General	Demand/Suit	Complain about predatory or bad-faith behavior by PAEs to the state Attorney General. Timing: Can be very fast - a couple of months from first complaint to action. Example:The Vermont, Minnesota, and Nebraska AGs have investigated PAE MPHJ Technology Investments and its subsidiaries for violating various Consumer Protection statutes, alleging that the defendants engaged in bad faith assertions or unfair and deceptive trade practices. In particular, accounts that lack of specificity about an alleged infringement, demand an excessive licensing fee, contain legal threats which prove to be empty, or contain unreasonably short deadlines for payment may be considered actionable.	Minimal, but helps if you or your client are well-connected, or particularly sympathetic (e.g. non-profit, long-term family business; think political photo op value)	No downside. Easy and important. State AGs are taking an increasing interest, now is the time to get in touch. I call this part of the "scorpion" defense approach -- make yourself so poisonous the troll will move on to another victim. I never thought this would work, but it really has been effective. Troll in the cross-hairs has referred to this response as "shi* storm," and clearly played a role in its decision to suspend all licensing demands. The key is being able to point to parts of the letter that are false or at least misleading, perhaps by omission. Note that in the Innovatio litigation Cisco tried to call those kinds of licensing tactics a RICO violation, and failed.
File a grievance with the bar	Demand/Suit	If lawyer representing troll clearly knows nothing about your product or operations but sends a fishing letter, consider having the client do this. Most state bar organizations make it pretty easy to raise the issue.	Minimal	Only applies to the most egregious cases, another scorpion tactic.
Don't settle, once sued	Suit	Settling with PAEs allows them to cite the settlement as precedent when asserting their patents against later target companies. Further, it provides PAEs with cash to perpetuate their predatory behavior because their business model remains profitable. Timing: potentially years, or could be short. Example: Newegg's Chief Legal Officer, Lee Cheng, embraced a unique strategy in 2007: not to settle with patent trolls. Ever. Cheng believes, “Patent trolling is based upon deficiencies in a critical but underdeveloped area of the law. The faster we drive these cases to verdict—and through appeal, and also get legislative reform on track—the faster our economy will be competitive in this critical area.” (http://arstechnica.com/tech-policy/2013/01/how-newegg-crushed-the-shopping-cart-patent-and-saved-online-retail/).	Management buy-in is key, could cost millions	If you can afford it, it’s the best tactic. Fewer letters in the future. Companies that make some noise appear to see fewer troll suits. But companies need to understand what they are getting themselves into - a lot of people give up 6 months in. They really need some experience with the patent system. Really talk to a lawyer. It's a lot of work but, if you can pull it off, there do appear to be returns. But see: This is great in theory, but is not practicable. Even those who say they don't settle, if they get a lot of threats, ultimately does. One refinement of this tactic is to say, if you are outside of EDTX, try to litigate through claim construction. Chances are that you can win some key terms and reach a more favorable settlement or position yourself well for summary judgment. In EDTX, history suggests that it is difficult to win claim construction arguments and summary judgment is almost never granted, so you have to be prepared to litigate through trial.
Make discovery requests	Suit	Make discovery requests focused on the real owners/controllers of the troll - that is threatening to them. Also demand all license agreements/settlement agreements as evidence of reasonable royalty. They don't want you to know that either. Timing: Can quickly change settlement dynamic. Example: Drew Curtis, founder of Fark.com, was sued by PAE Gooseberry Natural Resources. After Curtis made several discovery requests, asking Gooseberry to provide, for example, screenshots demonstrating Fark.com's violation of the patent--the troll offered to drop the lawsuit, paying $0 to settle.	Varies, but it can be expensive.	This hits some trolls where it hurts - their business model. But: because discovery is so expensive, it is better to engage prior to the filing of a lawsuit or through informal channels of communication. That is, always be open to a resolution. Just by discussing the case, you may avoid it.

Tactic	Stage of Dispute	Description, Timing & Example, if Any	Resources Needed	Ask the Experts - Comments on Each Tactic
File a abuse of process or RICO Claim	Suit	Civil RICO generally requires an enterprise with a pattern of "racketeering" (which includesmail fraud, wire fraud, and extortion), abuse of process requires a process (e.g., complaint, discovery) that is improper in the ordinary course of proceedings and/or is sought to obtain a collateral advantage. Example: In Cisco v. Innovatio IP (N.D. Ill. 2012), Cisco's RICO counterclaim alleged, e.g., pattern of assertion of expired patents, assertion of patents already exhausted by prior licenses to vendors, and violation of obligations to license on RAND terms.	Millions if it goes to trial, sometimes can be recycled.	Very difficult, not for every situation, but can be used to raise awareness of tactics. But other unfair business practices claims based on false statements/omissions of matieral fact in licensing communications could work. Another scorpion maneuver. But: Judges get educated through these sorts of motions being brought about troll tactics and nuisance dynamics, even if ultimately unsuccessful. If you can afford them, these are good to bring and public interest groups may will file an amicus brief on your behalf.
Manage Counsel	Suit	Defendants should engage in effective case management by identifying costs early, and establishing and sticking to a pre-set litigation budget. Find counsel that has already defended against the plaintiff to gain efficiencies. Don't pick a counsel based on trial, and go with the unfancy lawyer that gets the job done and is aligned with your long -term well-being, and is not only supporting you for patent litigation services. Timing: Immediate, in your monthly bill/reduced run rate	Organization, staying on top of your expenses/outside counsel	Active case management is key. Don't let the lawyers lead you. In contrast, stay involved, make the strategic decisions, and manage the case. That will help you track the costs and make sure you are doing only what is necessary to win. Try to negotiate fixed price services up front, i.e. x dollars for prior art search, x dollars to negotiate settlement, etc. Also, take the work in-house. For example, with e-discovery, companies can copy, screen, and conduct the first review in-house at a far lower cost than it would be for a large law firm to complete the same tasks. Because the legal standard for finding willful infringement is high, companies should focus on screening only for privilege and not waste time on discovery fights.
Fee motion	Suit/Post-Suit	Seek Rule 11 sanctions and "exceptional case" fees under 35 U.S.C. § 285. Example: In Eon-Net v. Flagstar Bancorp (Fed. Cir. 2011), Rule 11 sanctions of $141,984.70 were upheld where the troll failed to reasonably investigate before filing, and pressed objectively baseless infringement allegations. The Federal Circuit affirmed the exceptional case determination on the same basis, securing Flagstar's fee award of $489,150.48.	25-30K	This is a long shot, and only available typically if you are the prevailing party, but keep it in mind for egregious cases. You can use the threat of sanctions and fees in early conversations with PAEs, particularly where you have good prior art to back up your allegations. But: Judges get educated through these sorts of motions being brought about troll tactics and nuisance dynamics, even if ultimately unsuccessful. If you can afford them, these are good to bring and public interest groups may will file an amicus brief on your behalf.

Tactic	Stage of Dispute	Description, Timing & Example, if Any	Resources Needed	Ask the Experts - Comments on Each Tactic
Tactics for Settling	Settlement Phase	When you settle, there are a number of things to think about in terms of the future of your business and the goal of obtaining a lasting peace on the patents. Many don't think about what they want until it's too late - and the other side may have done this many more times. Example: Drew Curtis of Fark.com refused to sign a nondisclosure agreement or pay a settlement fee. To his surprise, the Gooseberry backed down (http://www.inc.com/magazine/201202/kris-frieswick/patent-troll-toll-on-businesses.html).	Small compared to overall cost of dispute	Fight hard answer : If you are paying the troll, you are the client. Do not agree to a mutual waiver of claims, non-disparagement, confidentiality, no-challenge clauses without getting something valuable in return. Demand patent peace and do not accept oral promises--trolls lie. This means demand coverage on all patents in the portfolio as well as affiliated portfolios, and coverage on patents acquired or granted in the future. Do not take a license--it validates the troll's business model and will be used against future defendants. A license is of no value anyway. Get a covenant not to sue instead. Don't be afraid to walk away--trolls don't want to try cases because they will most often lose. But: Make sure to get coverage to the related patents, not just the ones being asserted. Sometimes, you can press for a license to their entire portfolio, but that depends on the situation and the patent holder. Also, get coverage for your value chain, including your vendors and suppliers, your distributors, and your customers. We also ask for the ability for the license to continue in the event that the company is purchased or if the licensed products/services are sold.

Appendix D: PatentFreedom

Methodology for Counting Customer Suits

PatentFreedom maintains a comprehensive database of patent litigations, focusing on NPEs, which it defines as "any entity that earns or plans to earn the majority of its revenue from the licensing or enforcement of its patents." PatentFreedom's database capabilities enable it to track patent litigation campaigns that use the same set of patents asserted against a series of operating companies over time. Using this information, the company generated a list of the top patent litigation campaigns, based on number of defendants named, initiated between January 1, 2010 and June 30, 2013. For each of the 15 campaigns, the company identified a total of 813 patent infringement lawsuits filed as part of the campaigns, broken into 2,889 individual operating company parties. The company tagged each operating company party as either a 'customer' (implementer or end-user) or a 'supplier' based upon a manual review of the following three data fields:

1. the underlying technology covered in each campaign based on a quick review of the patents-in-suit;

2. the industry of the operating company party (derived from their self-reported primary NAICS codes);

3. the allegedly infringing products captured from the filed complaints.

As an illustration, a software company, whose web-based email products (built by the company itself) were alleged to be infringing patents covering web-based messaging features, was tagged as a 'supplier'. On the other hand, a retail company (whose core products/services clearly do not include email products) sued for implementing a similar web-based messaging feature on its website based on following the instructions of a technology vendor on its website, or a company that used an off-the-shelf product as instructed by the manufacturer, was tagged as a 'customer'. For a minority of cases where one or more of the three data fields were not available, the company used other available information, such as the company's website, to estimate its industry or products and services, and make the determination. While the majority of cases were clear, some were arguable and not easy to determine. The company then analyzed the entire data set to calculate the percent distribution of the total number of operating companies sued in each campaign into 'customers' vs. 'suppliers.'

Main Office

1899 L Street NW
Suite 400
Washington, DC 20036
Phone 202 986 2700
Fax 202 986 3696

New America NYC

199 Lafayette Street
Suite 3B
New York, NY 10012
nyc@newamerica.net

www.newamerica.net