

## 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),<sup>5</sup> as part of the America Invents Act.<sup>6</sup> Attempts to quantify patent assertion have focused on the prevalence of suits as a proportion of all patent litigations,<sup>7</sup> the financial impact of NPEs on public and surveyed companies,<sup>8</sup> the impact of NPEs on new product introduction,<sup>9</sup> consumers, and innovation, and the prevalence of software patents among asserted patents.<sup>10</sup>

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<sup>11</sup> and negative.<sup>12</sup>

In addition to the normal barriers that limit company-level data collection,<sup>13</sup> 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.<sup>14</sup> As a result, companies that benefit from patent assertion may be reluctant to speak publicly about their experiences.<sup>15</sup>

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.<sup>16</sup> 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.<sup>17</sup> Stigma can make it difficult for companies to share their experiences.<sup>18</sup> There may be concerns regarding clients and the sharing of sensitive company information.<sup>19</sup>

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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.”<sup>20</sup> 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.<sup>21</sup>

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.<sup>22</sup>

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.<sup>23</sup> 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.

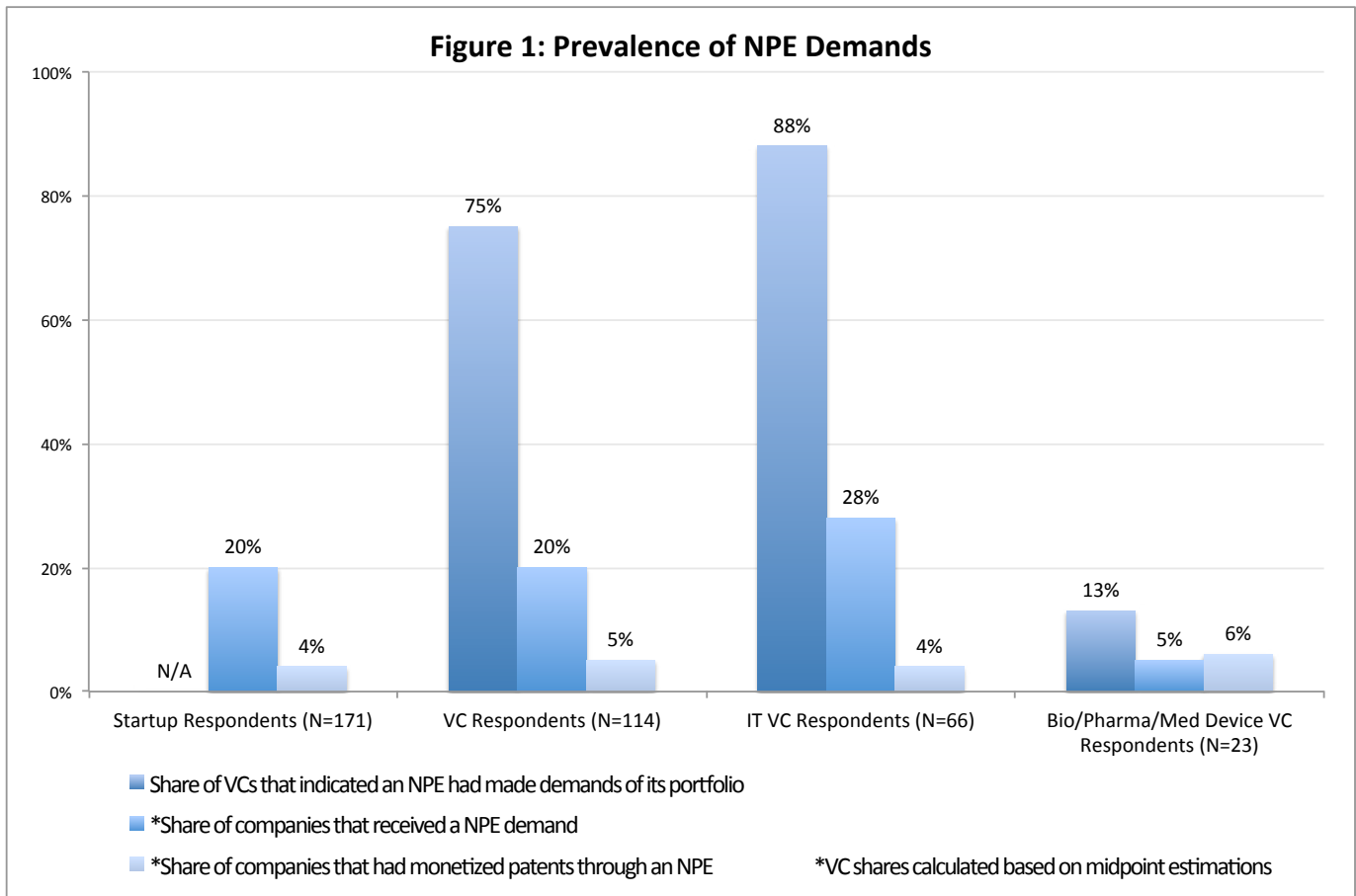
As detailed in the Appendix A (Methodology), the respondent population included 307 venture capitalist or investors (“VCs”) and startups. Thirty-five of the startups had received a demand. The surveyed VC population skewed from the national average towards early stage investors and investors in bio/pharma 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

**Figure 1: Prevalence of NPE Demands**



of NPE lawsuits as a percentage of all patent lawsuits filed recently to range from 45%<sup>24</sup> to around 60%.<sup>25</sup> The share of unique defendants to PAE suits that have annual revenues of \$10M or less has been estimated to be around 55%.<sup>26</sup> However, it is not clear what proportion of all companies is actually being impacted.<sup>27</sup> 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.<sup>28</sup>

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.<sup>29</sup> 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%.<sup>30</sup>

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.”<sup>31</sup> 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.<sup>32</sup> 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.<sup>33</sup>

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.<sup>34</sup> Another campaign, Geotag, has sued an estimated 544 defendants for having websites that feature locator functionality and organize the results geographically.<sup>35</sup> 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.<sup>36</sup> 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.<sup>37</sup> 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<sup>38</sup> 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.”

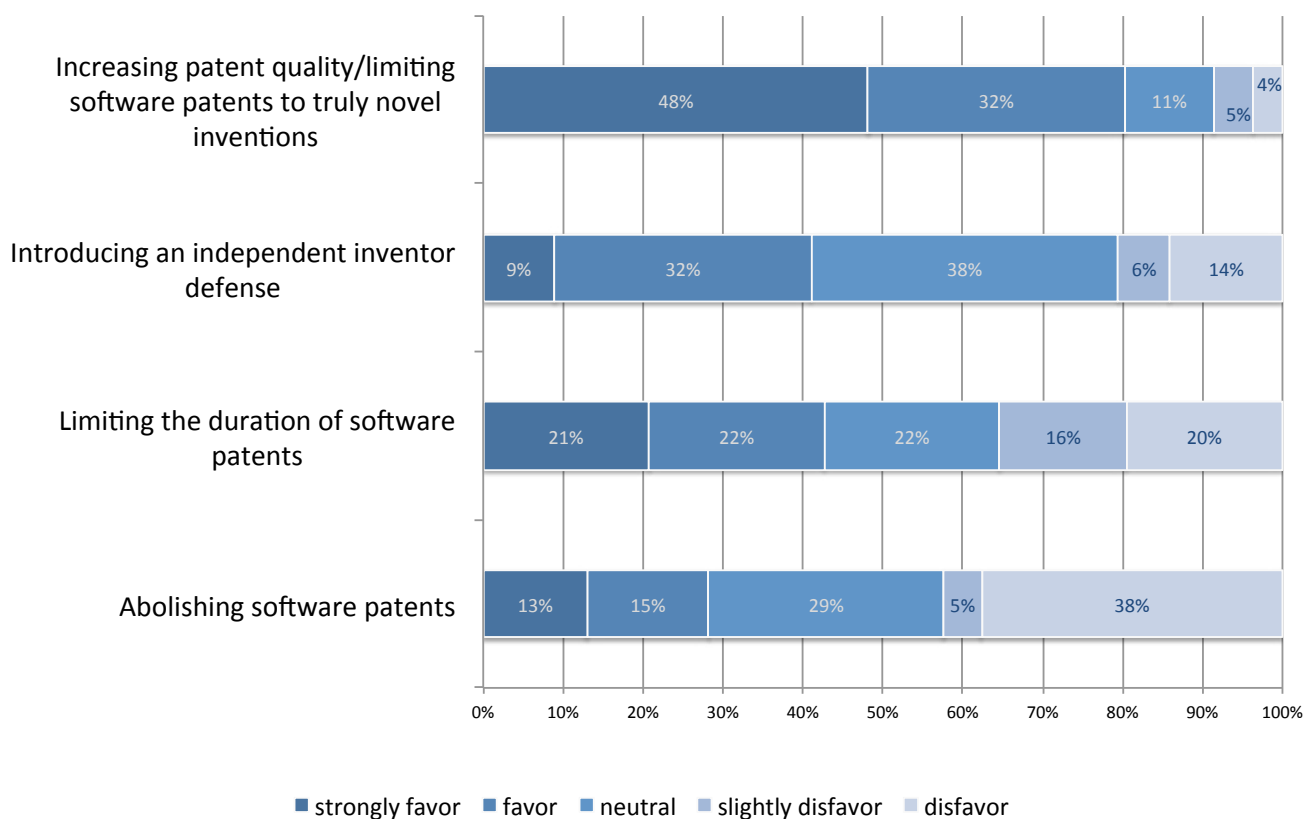
Poor patent quality harms startups and small companies, said respondents, when “[l]arge companies use their arsenal of patents to file frivolous lawsuits,” “[d]eserving patents get same timeline as undeserving ones,” and “[obvious] [s]oftware patents hurt innovation and destroy jobs,” in the words of 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,<sup>39</sup> 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,<sup>40</sup> 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 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.

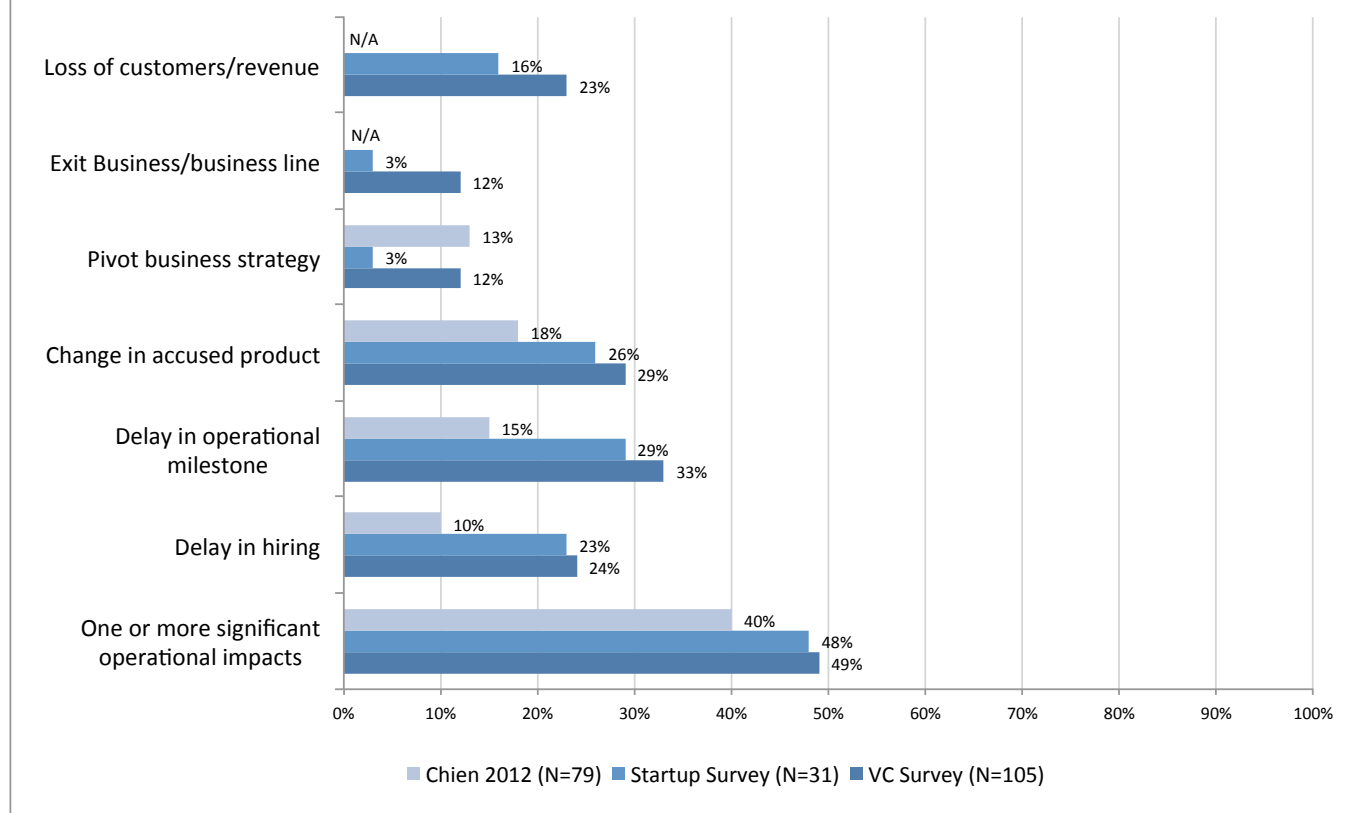
“The second suit we were hit with also was so completely different than what we were doing. That hurt when they sued us. But it didn’t have a huge effect. They hadn’t gotten an injunction.

“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.”

-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.<sup>41</sup> 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.<sup>42</sup>

### *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.<sup>44</sup> 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

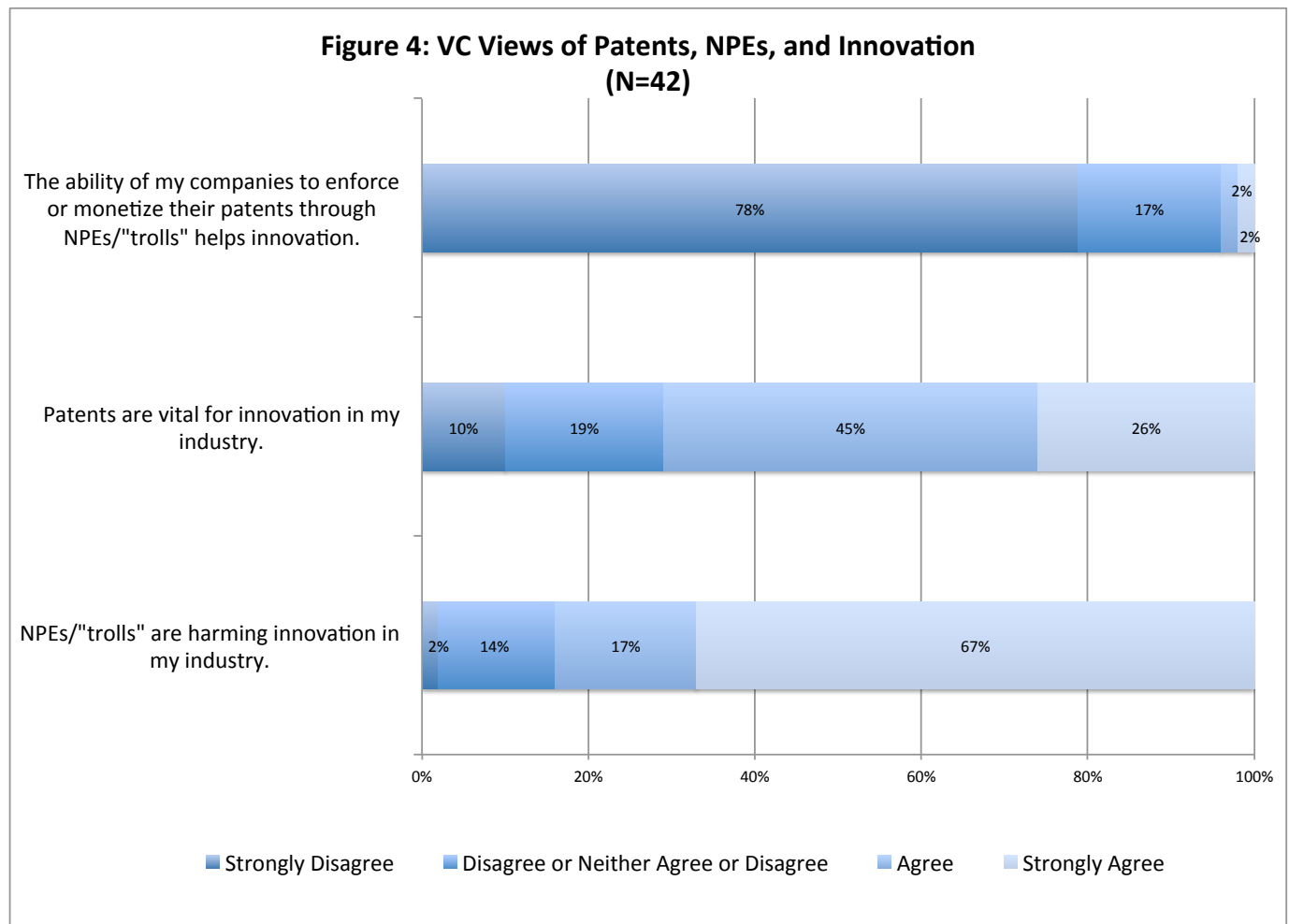
some answers. A number of respondents cited moral opposition to patenting and patent assertion: “workforce philosophically opposed [to patents],” “that’s against our business ethic,” “most startups are not eager to work with patent trolls.” Others saw NPE monetization as a last resort: it was a “last 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.”<sup>45</sup>

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.<sup>46</sup> Many startups do not have patents, due to the cost and long gestation, relative to product lifecycles<sup>47</sup> although VC respondents to this survey reported a high level of patenting among their companies (70%).<sup>48</sup> 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



“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,<sup>50</sup> 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.<sup>51</sup> 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,<sup>52</sup> licensing in the patents of others to access technology,<sup>53</sup> and licensing out of their own patents to transfer technology.<sup>54</sup>

While most surveyed VCs were positive about patents,

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startup survey respondents<sup>55</sup> 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,<sup>56</sup> 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%



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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.”<sup>57</sup>

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.”<sup>58</sup>

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.<sup>59</sup> 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.”



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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<sup>60</sup>*

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<sup>61</sup> or patent bullying,<sup>62</sup> and their apparently anti-competitive motives.

In response to the question, “what triggered the suit/demand,”<sup>63</sup> 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.”

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## *“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.