

Patent Demands & Startup Companies:
The View from the Venture Capital Community

By Robin Feldman¹

This paper presents the results of a study conducted on the topic of patent demands against venture-backed startups. The study was conducted through the members of the National Venture Capital Association and their portfolio companies. The paper details responses from more than 200 venture capitalists and their portfolio companies. Results include quantitative information on the frequency of patent demands, the percentage of demands that came from those whose core business involves licensing or litigation patents, the costs of responding to demands, the possibility of demands timed in relation to funding, and the distribution of demands in different industry sectors.

Results also include the respondent's views on whether patent demands are a significant problem in the sector, whether venture capitalists consider the possibility of selling patents in determining whether to invest in a company, and whether venture capitalists would be deterred by patent demands against a

¹ Professor of Law & Director of the Institute for Innovation Law, University of California Hastings College of the Law. This work was supported by the University of California Hastings Institute for Innovation Law. No corporation or other entity outside of UC Hastings provides more than 10% of the Institute's funding. No funding for this or any other work has been provided by the National Venture Capital Association. I am grateful to Colleen Chien, Jennifer Dowling, Ira Ehrenpreis, Osagie Obasogie, Carolyn Spencer, and Kelly Stone for their suggestions on the design of the study. I also wish to thank David Schwartz and Michael Risch for their comments on the results, as well as Kristy Brady, Jake Wexler, and Josh Wolf for their invaluable research assistance.

company they were considering adding to their portfolio. Finally, the paper provides qualitative information on the effects of patent demands on the lives of venture-backed startup companies—documenting both the human and the economic costs of patent demands.

Key results are the following:

- 70% of the venture capitalists have portfolio companies that have received patent demands; and roughly one in three startup companies report receiving patent demands;
- Although 70% of the venture capitalists have experienced demands in the information technology sector, 30% also have experienced demands in the life science sector;
- The vast majority of patent demands against the startup companies come from entities that license or litigate patents as their core activity.
(Specifically, 59% of the venture capitalists and 66% of the startup companies reported that all or most demands come from such entities);
- 74% of the venture capitalists and 58% of the startup companies report that patent demands had a significant impact on a company. (Details of those impacts and associated costs are described below);
- According to the vast majority of both the venture capitalists and the startup companies, the costs of preparing for and defending against patent demands exceed \$50,000 per company, with a number of companies reporting costs in the millions of dollars.

- 64% of venture capitalists *disagree* with the statement, “as a venture capitalist, I consider the potential for selling patents to patent assertion entities if the companies fail.”
- When asked whether they see patent assertion as positive for startups and the startup community, 72% of venture capitalists *disagree*.
- 100% of venture capitalists indicate that if a company had an existing patent demand against it, it could potentially be a major deterrent in deciding whether to invest. Roughly half indicate that it would simply be a major deterrent on its face, and the other half indicate that it could be a major deterrent, depending on the circumstances.

Finally, one venture capitalist summed up the impact of patent demands on venture-backed companies in a particularly cogent fashion. When companies spend money trying to protect their intellectual property position, they are not expanding; and when companies spend time thinking about patent demands, they are not inventing.

Background on the Extent of Modern Patent Monetization

Patent monetization has existed in some form since at least the 19th century. In recent years, however, the market for patent trading and patent assertion has expanded dramatically, growing both in scope and in the level of sophistication. As a result, the percentage of patent lawsuits filed by those who do not make products

has increased dramatically from roughly 25% in 2007 to almost 60% in 2012.² In other words, as of 2012, the majority of patent lawsuits are filed by those whose core business involves licensing and litigating patents, as opposed to making products.

Before the rise of the today's patent assertion market, most patent litigation operated more as a tool of last resort for companies that created their own products. In this context, the threat of litigation ensured a form of mutually assured destruction. For example, if one product company launched its patents against a competitor, the target company would wield its own set of patents in retaliation, putting the original company's products at risk. The tendency toward risk aversion, therefore, acted as a limiting factor on patent demands and patent lawsuits.

In today's patent assertion market, however, monetizers use litigation as a profit-generating weapon, often relying on companies' fear of the high costs and risks of patent litigation to encourage settlements. The complexity and uncertainty of the patent system tends to work in a monetizer's favor. For example, it is tremendously difficult to know what the language of a patent covers, and it can cost as much as one to six million dollars to find out through a patent lawsuit. When monetizers brandish numerous patents at once, this cost and complexity can multiply. Moreover, if a product company challenges a patent and loses, the

² See Robin Feldman, Tom Ewing & Sara Jeruss, *The AIA 500 Expanded: Effects of Patent Monetization Entities* (forthcoming UCLA JOURNAL OF L. & TECH. 2013); see also Colleen V. Chien, Patent Assertion Entities, Presentation to the DOJ/FTC Hearing on PAEs (December 10, 2012), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2187314 (using data from RPX Corporation and concluding that the percentage of litigation by non-practicing entities in 2012 has reached 62%).

company could face enormous damages and litigation costs, as well as the possibility that its product could be shut down entirely. A rational company, therefore, may choose the less expensive option of settlement – still a bitter pill to swallow, but one that tastes far better than the costs and risks of litigation.

The cumulative impact of patent assertion in its various forms is staggering. Although difficult to measure with any accuracy, scholars have estimated that patent assertion by monetizers cost U.S. companies \$29 billion in 2011 alone.³ These estimates suggest that only 20% of that cost flows back to innovation, either to outside inventors or to any internal research and development by monetizers.⁴

Other scholars have considered different aspects of the issue. Professor Brian Love has determined that non-practicing entities file more than twice as many lawsuits per patent as operating companies and sue more than four times as many alleged infringers per patent.⁵ Others have found evidence that patent monetization lawsuits are directed most frequently at companies in the Internet and technology sectors. In particular, Professors Allison, Tiller, Zyontz, and Bligh have examined Internet-related patents and non-Internet-related patents, concluding that the Internet-related patents have been litigated 7.5 to 9.5 times more frequently than the latter.⁶ Professor David Schwartz has noted that costs differ between plaintiffs

³ See James E. Bessen & Michael J. Meurer, *The Direct Costs from NPE Disputes*, 99 CORNELL L.REV. (forthcoming 2014).

⁴ See *id.*

⁵ Brian J. Love, *An Empirical Study of Patent Litigation Timing: Could A Patent Term Reduction Decimate Trolls Without Harming Innovators?* (Santa Clara Univ. School of Law, Working Paper No. 1917709, 2011-12), available at <http://ssrn.com/abstract=1917709>.

⁶ John R. Allison et al., *Patent Litigation and the Internet*, 2012 Stan. Tech. L. Rev. 1, 6 (2012).

and defendants in certain types of patent lawsuits, which he attributes to the fact that non-practicing entities can keep costs low by having few documents to discover, moving to trial sparingly, and avoiding bringing motions in court.⁷ Professor Michael Risch studied the 10 most litigious non-practicing entities and concluded that most of the patents asserted in the sample originated from companies.⁸ Others have looked at “sport of kings” patent suits, involving companies with more than \$100 million in revenue, and others have examined patents suits between smaller entities.⁹

Of particular interest, Professor Colleen Chien has recently studied startups and patenting, including interviews with patent litigators, large-company patent attorneys, venture capitalist, and startups.¹⁰ Although the work has focused particularly on experiences with non-practicing entities, Chien also examined views

⁷ David Schwartz, *The Rise of Contingent Fee Representation in Patent Litigation*, 64 Ala. L. Rev. 335 (2012).

⁸ See Risch, Michael, *Patent Troll Myths*, 42 Seton Hall L. Rev. 457 (2012). The list was provided by PatentFreedom, which identifies itself as offering subscriptions and services to help operating companies and law firms manage NPE risk more effectively. See <https://www.google.com/search?q=PatentFreedom&aq=f&oq=pat&aqs=chrome.0.59j57j60l3j61.1323&sourceid=chrome&ie=UTF-8>

⁹ See Colleen Chien, *Startups and Patent Trolls*, Report from the New America Foundation’s Open Technology Institute, available at <http://ssrn.com/abstract=2146251> (citing Gwendolyn Ball & Jay Kesan, Transaction Costs and Trolls: Individual Inventors, Small Firms and Entrepreneurs in Patent Litigation 13 (2009); Colleen V. Chien, *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents*, 87 N.C. L. REV. 1571).

¹⁰ Different aspects of Chien’s work on patents and startups are available in two locations: Colleen V. Chien, White Paper for Open Technology Institute, *Patent Assertion and Startup Innovation*, NEW AMERICA FOUNDATION (2013) at 20, available at <http://ssrn.com/abstract=2321340> and Colleen Chien, *Startups and Patent Trolls*, (forthcoming STANFORD TECH. L. REV.), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2146251.

on obtaining patents and interactions with larger product companies. Her conclusions include that only 5% of startups in the sample had sold patents to non-practicing entities, that small companies are vulnerable targets when - because of a lack of leverage - they pay nuisance settlements regardless of the merits, that small companies are often targets of patent suits because they are users of technology, and that costs are highest for startups when the primary response involves fighting in court.¹¹ Where aspects of Chien's examination can be compared to the work of this study, the results will be described below.

The problem of patent monetization has also attracted increasing attention from the press and companies in many sectors. Technology companies have led the way, with active lobbying campaigns in the United States and in Europe as well.¹² This is not surprising, given that modern patent trolling has had perhaps the largest impact on technology-heavy industries such as software, smartphones, and computers. Others have joined the chorus of complaints, including coffee shops, hotels, and retail outlets large and small. Furthermore, the research below suggests that patent monetization is beginning to expand beyond the tech industry, entering the life sciences arena. In short, patent monetization is a complex and troubling problem, which is reaching into a variety of sectors, although the primary impact continues to be felt in technology.

In response, legislators and regulators at both the state and federal level have begin exploring solutions to the problem. A variety of bills have been introduced in

¹¹ *See id.*

¹² Letter from Adidas. et al. to Preparatory Committee, Unified Patent Court, Member States of the European Union (Sept. 26, 2013), *available at* <http://graphics8.nytimes.com/packages/pdf/business/26trolls-letter.pdf>.

the Congress, including an extensive reform bill introduced by Congressman Goodlatte, Chairman of the House Judiciary Committee. The Federal Trade Commission, which held a joint workshop on patent monetization with the Department of Justice in December of 2012, voted in the fall of 2013 to initiate a broad-ranging economic investigation into 25 patent assertion entities. The White House issued a report on patent assertion in the summer of 2013, along with a series of executive orders. In response to those orders, as well as workshops held on the topic, the Patent and Trademark Office has begun exploring sunshine rules for disclosure of patent ownership. State legislators and attorneys general have joined in, taking actions against monetizers who have targeted companies in their jurisdiction. Even the Supreme Court has agreed to hear two cases peripherally related to the topic.

With the high level of interest in patent monetization and its effects on US companies, data on the topic is increasingly important. This study is intended to examine a small corner of the question and to test narratives about startups and the rising patent monetization market. With this goal in mind, the study examines patent demands against startup companies through the experiences of venture capitalists and their portfolio companies. In particular, the study tests a narrative that has circulated which suggests that patent monetization is important for the venture-backed community because monetization offers an alternative for venture capitalists and failed startups.¹³ The study tests this narrative through the eyes of

¹³See Federal Trade Commission Chairwoman Edith Ramirez, Opening Remarks, Computer Law & Patent Assertion Entities: What Antitrust Enforcers Can Do, (June 30, 2013) (suggesting in a list of positive attributes of patent assertion entities that

the venture-backed community itself, and examines the community's experiences with and perspectives on patent demands in general.

Choosing Terms and Points of Measurement

An initial question in any survey involves the terms to use and the issues to be measured. As concerns have escalated over the problem of patent trolling, everyone has scrambled to define terms. In this highly charged atmosphere, no one wants to be branded a bad guy, and if patent trolls are bad guys, everyone wants the definition to point somewhere else. And, indeed, numerous definitions—and variations on those definitions—have been offered to define the notion of patent trolling. Many use the term non-practicing entity, or NPE, in reference to entities that do not use the patents they own to create anything. In the code-like language of patents, using the ideas in the patent to create a product is called “practicing the patent,” and thus, those who do not create products are called “non-practicing.” Among many others, Congress has used the term NPE in directing the non-partisan General Accounting Office to study the topic.¹⁴

Problems with the term include the question of whether to include universities in the definition. Universities are in the business of scientific research and education, and they generally do not engage in the production of products from

such entities, “can make it easier for a failed start-up to monetize its patents, providing some insurance for venture capitalists”), *available at* <http://www.ftc.gov/speeches/ramirez/130620paespeech.pdf>.

¹⁴ See Pub.L. No. 112-29 § 34 (2011) (directing the nonpartisan General Accounting Office to study the effects of non-practicing entities on US patent litigation; *see also* 157 CONG. REC. S5441 (daily ed. September 8, 2011) (statement of Sen. Patrick Leahy)).

their inventions. Thus, they do not actually practice the ideas in their patent portfolios. In addition, a term that references only entities is also problematic. Some of the most famous modern examples of those who do not practice the ideas in their patents, but use the patents to demand license fees from others, are individuals.¹⁵ Other prolific monetizing individuals are organized as trusts.¹⁶

The distinction between “entities” and non-entities has led to some confusion with the GAO report on patent assertion. The report noted a significant, but smaller, increase in litigation by patent assertion entities through 2011 than was noted by other studies. Much of this difference can be attributed to the fact that the GAO only considered those organized as corporations or partnerships, not those organized as trusts or operating as individuals.¹⁷ This leads to some odd results. The greatest number of lawsuits filed in the GAO’s own 500 case sample were filed by someone organized as a trust.¹⁸ A well-known name in patent assertion circles, the business activity of this trust is licensing and litigating patents. Nevertheless, the GAO’s definition would exclude this trust from the count of patent assertion entities.

¹⁵ See e.g., David Segal, *Has Patent, Will Sue: An Alert to Corporate America*, NEW YORK TIMES (JULY 13, 2013) (profiling Erich Spangenberg) available at, <http://www.nytimes.com/2013/07/14/business/has-patent-will-sue-an-alert-to-corporate-america.html?pagewanted=all&r=0>

¹⁶ See Sara Jeruss, Robin Feldman & Joshua Walker, *The America Invents Act 500: Effects of Patent Monetization Entities on US Litigation*, 11 DUKE L & TECH. REV. 357, 382 (2012) (analyzing the data that the authors provided to the GAO).

¹⁷ See United States Government Accountability Office Report, *Intellectual Property: Assessing Factors that Affect Patent Infringement Litigation Could Help Improve Patent Quality*, at 17, n.35 (August 2013).

¹⁸ See *id.*

From a definitional standpoint, it should not matter whether one chooses to organize oneself as a corporation, a partnership, a trust, or simply to act as an individual.¹⁹ The relevant question involves what activity one engages in.²⁰

The reverse problem occurred early on when some researchers defined patent trolls only as individuals. In particular, one of the earliest data-based analyses of modern patent trolling looked only at individual inventors, defining trolls as those who did not commercialize or manufacture anything out of their patents but used those patents for licensing demands. Focusing only on the individuals risks missing much of the activity.²¹

Others use the term patent assertion entity, or PAE, as a way of focusing on entities whose primary activity is to purchase patents to make licensing demands against others who make products; in other words, to assert their patents. In particular, the Federal Trade Commission has used the term PAE.²² The term is

¹⁹ I note that in its report to Congress on the effects of non-practicing entities, the General Accounting Office defined the category as including only literal entities, rather than individuals or trusts, causing their estimates to vary from academic literature. See GAO study at page 17, n. 35 (noting the exclusion of individuals and trusts and the resulting variation from the Jeruss, Feldman & Walker, *supra* note 16).

²⁰ One could argue that certain organizational formations facilitate so-called trolling behavior more smoothly, for example, by limiting the targets ability to respond. We see this as more central to issues related to the effectiveness of the behavior, rather than as a reason to alter the definition.

²¹ See James Bessen & Michael J. Meurer, *Patent Failure* 16 (2008).

²² Fed. Trade Comm'n, *The Evolving IP Marketplace: Aligning Patent Notice And Remedies With Competition* 8 (2011), available at www.ftc.gov/os/2011/03/110307patentreport.pdf [hereinafter *Evolving IP Marketplace*] (defining PAE as having a business model focused on “purchasing and asserting patents against manufacturers already using the technology, rather than developing and transferring the technology”); see also Federal Trade Commission Chairwoman Edith Ramirez, *Opening Remarks, Computer Law & Patent Assertion Entities: What Antitrust Enforcers Can Do*, (June 30, 2013), available at

subject to some confusion and variation, however. For example, does the notion of an “assertion entity” include only those who file lawsuits or does it also encompass those who assert by making licensing demands short of filing a lawsuit? Some entities have tried to suggest that those who assert only through licensing demands should be excluded from the term patent assertion entity. For example, the patent aggregator RPX buys patents, grants licenses to those who purchase the rights to their portfolios, and then transfers those patents to others—subject to the licenses. In other words, those who buy the patents can sue anyone other than those who have already purchased a license from RPX. Although buyers who purchase the RPX patents may file infringement lawsuits, RPX itself does not.

The distinction between those who assert by licensing demands and lawsuits versus those who assert only by licensing demands would be problematic. From a practical perspective, much of the patent assertion activity occurs outside of litigation, and studies estimate that companies receive numerous patent licensing demands for every one that proceeds all the way to a lawsuit. All of these demands occur in the shadow of a potential lawsuit. A license, after all, is merely an agreement not to sue in return for a monetary payment, and the threat of a lawsuit is what drives companies to pay the licensing fee. If one is examining patent assertion behavior, it would make little sense to look only at assertions that progress all the way to a particular moment, rather than the other assertions that take place in the shadow of that moment.

From an economic perspective as well, there may be very little difference between those who file lawsuits and those who do not—at least if those who do not file lawsuits are willing to transfer to others who will file suit. Imagine an entity that chastely refuses to file any lawsuits, but sells its patents to hypothetical nasty third parties, who do sue. The price of a patent when it is sold reflects the expected value of the lawsuit. Thus, the chaste entity receives the economic benefit of that lawsuit, even without having to file the suit itself. Moreover, the chaste entity's licensing activity benefits from the possibility of sale to those who will sue. In other words, implicitly or explicitly, target companies are encouraged to buy licenses from the pure entity, for fear that they will have to face a lawsuit from the nasty third party who might buy it. Again, the chaste entity benefits from a system in which patent lawsuits are filed, even though it does not file lawsuits directly itself. In short, a distinction between those whose assertion profile includes lawsuits and those whose assertion profile does not makes little sense.

The FTC avoids this problem, defining patent assertion entities to include those who assert by licensing demands as well as those who assert by lawsuits, but the agency adds its own variation on the theme. The FTC defines patent assertion entity to include only those who *purchase* and assert patents, the implication being that one who originally obtained the patent would be excluded.²³ The definition would exclude entities in the semi-conductor industry, such as Qualcomm and Rambus, that spend large sums researching and designing products. Companies such as these may create prototypes to license others to produce but do not actually

²³ *See id.*

manufacture the product themselves. These entities have argued fervently that they should not be considered part of any definition related to patent trolls.

Some Congressional proposals contain a variant of this approach. They would exempt those who have expended significant resources in attempting to work the patent from provisions related to curbing patent assertion abuse.

This definitional issue is challenging. To the extent that society is concerned about those who assert patents as a business practice without contributing to the creation of products for society, the semi-conductor companies have a point. Engaging in significant research and development that leads to the creation of a viable product should be considered a productive activity, even if the company chooses to hire others to do the actual manufacturing. Economists generally would frown on a rule that required vertical integration—in other words, a rule requiring that one company engage in all levels of production necessary for a final product.

Nevertheless, defining patent assertion entities as only those who buy and assert patents risks omitting a significant amount of activity that could look much like the remainder of what falls within the definition. Consider the following: the patent system has operated for some time with a high percentage of rights that are never actualized.²⁴ These shadow rights have remained largely on the periphery of the patent system, creating no direct returns for the patent holder. In fact, studies

²⁴ One of the authors has described the issue of shadow rights, and problems with monetization of those rights, in greater detail. See Robin Feldman, *Intellectual Property Wrongs*, 18 STANFORD J.L. BUS. & FIN. 247, 261-263 (2013). We summarize that discussion here.

suggest that more than 90% of patents never create a direct return for the patent holder.²⁵

Many of these patents, along with patents in general, may be of questionable value. The Patent & Trademark Office lacks the resources to examine the massive number of patent applications that come through its doors—not with the level of scrutiny required to eliminate weak patents, or weak claims within a patent. For example, one scholar has estimated that patent examiners spend no more than 18 hours on any patent application, and this time is likely to be spread over two to three years.²⁶ With patent applications containing dozens or even hundreds of claims, the available time is simply insufficient.

It is not just the patent as a whole that may be weak, even if some claims within the patent have merit, others may be of questionable validity. Patent drafters frequently write a range of claims, including very aggressive, broadly reaching claims down to much more narrow and specific ones.²⁷ Patent examiners may cull out some of the weaker ones, but with the limited time available to review each patent, examiners are not likely to catch all weak claims. Nevertheless, each individual claim can be launched on its own against a target company in an infringement claim.

²⁵ Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. Pa. L. Rev. 66 (2005). (noting that estimates suggest that less than 5 percent of patents hold any value); *see also* Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 267 (1977).

²⁶ Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1500 (2001).

²⁷ *See* ROBIN FELDMAN, *RETHINKING PATENT LAW* (Harvard 2012) (describing how modern patents operate in chapter 2).

The system may have worked reasonably well when fewer patents were operationalized. Rather than concentrating resources up front, the legal system could focus its energy on the few patents that became valuable enough to make it to litigation.²⁸ In a system of intense monetization, however, every patent and every claim within it has the potential to be launched against product manufacturers to garner a return. The fact that it was written by the patent holder is no guarantee that it is better than any others.

Moreover, exempting those who have originated the patent could have the effect of merely altering how the business is organized, rather than significantly reducing the behavior. For example, rather than purchasing a patent from the original patent holder, the monetizer could simply join forces with the original inventor, either using the patent holder as a front for the monetization activities or simply funding monetization efforts by the patent holder in exchange for a healthy share of the returns. In that manner, the monetizer has now escaped the definition of “one who purchases and asserts patents” simply by not purchasing. The market has already developed complicated schemes in which product companies or aggregators fund the monetization activities of others, along these lines.

In addition, monetizers and aggregators could simply choose to get into the business of filing for patents. We could be inadvertently incentivizing the creation of

²⁸ See *id.*; see also Dan L. Burk & Mark Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575 (2003); Christian Bessy & Eric Brousseau, *Technology Licensing Contracts: Features and Diversity*, 18 INT’L REV. L. & ECON. 459 (1998); Eric Brousseau & Christian Bessy, *Public and Private Institutions in the Governance of Intellectual Property Rights*, in INTELLECTUAL PROPERTY RIGHTS: INNOVATION, GOVERNANCE, AND THE INSTITUTIONAL ENVIRONMENT 243, 251 (Birgitte Andersen, ed. 2006); F. Scott Kieff, *The Case for Registering Patents and the Law and Economics of Present Patent-Obtaining Rules*, 45 B.C. L. REV. 58 (2003); see also Kelly Casey Mullally, *Legal (Un)certainty, Legal Process, and Patent Law*, 42 LOY. L.A. L. REV. 1109 (2010).

an industry of applying for patents for the purpose of monetizing them, rather than for the purpose of creating products for society.

There is a more subtle issue, however, involved in exempting the original patent holder from the definition of monetization. We have a romantic attachment to the notion of the inventor, which spills over into a romanticized image of those who hold patents.

I have described this romanticized image in the following manner:

In the classic story of invention, a great thinker toils to create a wonderful innovation, files for a patent to protect what he or she has contributed to the store of human knowledge, and then produces a new product that enters the market, improving the lives of all citizens. In a variation on this theme, the valiant inventor, deeply immersed in the pursuit of innovation, lacks the capital, experience or interest to commercialize the invention. The inventor then simply licenses the patent to a third party, who brings forth the product for the betterment of society. Copyright tells a similar tale that features brilliant writers hunched over coffeehouse tables, or dedicated computer programmers toiling late into the night, accompanied only by caffeine and their dreams.²⁹

It is a lovely story, and one that undoubtedly exists to some extent, but much of the modern patent world looks nothing like this.

²⁹ Robin Feldman, *Intellectual Property Wrongs*, 18 STANFORD J. L. BUS. & FIN. 247 (2013); Mark Lemley, *The Myth of the Sole Inventor*, 110 MICHIGAN L. REV. 111 (2012).

In particular, most people assume that a patented invention translates into a product. This assumption could not be farther from the truth. Most products require a multitude of intellectual property in order to create a viable product. Such intellectual property may include numerous patents, as well as trade secrets and those wonderfully named components, “know how” and “show how.” Even if the knowledge captured in the patent can be translated successfully into a product, that product must be developed further into a form that is stable and can be mass produced and distributed. The gap between a patented idea and a viable product is known colloquially as the “valley of death,” a valley that only a few hardy souls are able to cross. Thus, most patent holders who try to develop a product are destined to become failed entrepreneurs.

Psychology research suggests that we often see our own property as of greater value than when the same property belongs to someone else. In addition, anyone who has ever represented a client can attest that clients generally believe their claim is right, a perspective that cannot possibly be accurate for all sides at all times. One might anticipate that these types of distortions would be enhanced by those who are not repeat players and who have less experience in the arcane world of patent law, a description likely to apply to many individual inventors. Our fascination with the romanticized individual inventor could inadvertently fuel a cottage industry. Failed entrepreneurs, which most entrepreneurs are likely to be, would be encouraged to turn to patent assertion as a second career—a career that would provide a handy outlet for frustration over the inability to get a product off the ground. With monetizers willing to join forces and fund these efforts behind the

scenes, if we exempt original patent holders from the definition of monetizers, we may simply shift the current modes of monetization—with all of their problems—into a different form. Rather than curbing abuses, the result could be the same monetization with a different face.

I do want to stress one important issue. Rights are useless if one cannot enforce them, a concept that is as critical for intellectual property as for any other set of rights. Some small companies and inventors have complained that large companies are less than diligent, to put it mildly, in responding to complaints that their rights are being trampled. The system must be designed to avoid indifference to intellectual property rights, as well as to deter outright theft.

Nevertheless, exempting the original patent holder from the definition of patent assertion entities could backfire. The fact that the one asserting the patent also filed for the patent, or spent resources trying to commercialize it, is no guarantee that the patent is valuable or that it is being launched at an appropriate target. We should be wary of giving those who file patents a free pass from measures to curb monetization abuses.

In choosing the terms and definitions for this paper, I have decided to use the term monetizers. It has the advantage of not distinguishing among actors based on the form they choose, and referencing individuals as well as “entities.” I also define monetizers as those whose core business involves licensing and litigating patents, rather than making products. It has the virtue of simplicity, and allows us to speak broadly about the phenomenon. I note, however, that the topic is complicated, and that in a politically charged atmosphere, every word is at issue.

One also must decide what to measure. As described above, prior work has explored monetization in the context of activity that reaches all the way to a lawsuit. Activity before that time generally is shrouded in nondisclosure agreements and difficult to access through public documents. This study was intended to look at the effects of a range of patent activity. Thus, I chose the term “patent demands” and defined the term broadly to include demand letters, threats of litigation, or lawsuits. Specifically, respondents were asked whether they have “received patent demands, for example, demand letters, threats of litigation, or infringement lawsuits.”

A Brief History and Overview of Startup Financing

Although today’s technology startups have created the enduring image of the scrappy, underfinanced underdog that goes on to create the next Facebook from someone’s garage, technology startups used to require massive investments to get off the ground.³⁰ Early venture capital-backed technology companies required sizable investments in manufacturing, engineering, personnel, and professional services in order to enter the market.³¹ As a result, early tech companies like Digital Equipment Corporation (DEC) and Tandem had to get their funding from large venture capital firms such as Arthur Rock and Kleiner Perkins.³²

Thanks to the success of these prototypical venture-backed initiatives, the operating model established by these early venture capitalists has endured to this

³⁰ Ben Horowitz, *How Angel Investing Is Different Than Venture Capital*, BUSINESS INSIDER (Mar. 2, 2010), <http://www.businessinsider.com/how-angel-investing-is-different-than-venture-capital-2010-3>.

³¹ *Id.*

³² *Id.*

day.³³ Under this model, venture capital firms “provid[e] capital to high-potential businesses in exchange for partial ownership of the firm.”³⁴ Traditionally, venture capital funding has filled the crucial gap between early seed funding, such as money from friends and family, and later rounds of investment.³⁵ As protection for risking large amounts of capital on nascent businesses, venture capitalists take an active role in managing them, with the expectation that enough of these companies will become successful to provide sufficient returns on their investments.³⁶ By insisting on direct involvement in the operation of a company, commonly in the form of seats on the company’s board, venture capitalists seek to leverage their significant experience in the relevant industry to provide new entrepreneurs with seasoned advice.³⁷ Venture capitalists also insist on certain downside protections that allow them to protect their investments in the company if circumstances change.³⁸ For example, venture capitalists will usually require that their interest in a company be issued as preferred equity that comes with a liquidation preference, which allows the venture capitalist to get its money out first if the company gets liquidated.³⁹ Another common requirement for a venture-backed deal is anti-dilution protection, which allows the venture capital firm to maintain its percent of equity ownership in the event of a subsequent round of financing by requiring that the venture capital

³³ *Id.*

³⁴ Brian L. Dos Santos, Pankaj C. Patel, & Rodney R. D’Souza, *Venture Capital Funding for Information Technology Businesses*, 12 J. Ass’n Info. Sys. 57, 59 (2011).

³⁵ Bob Zider, *How Venture Capital Works*, Harv. Bus. Rev., Nov.-Dec. 1998, at 131, 132.

³⁶ *Id.*

³⁷ *Id.* at 139.

³⁸ Zider, *supra* note 35 at 134.

³⁹ *Id.*

firm gets issued additional shares to preserve its current equity position, at the expense of common stockholders.⁴⁰ Though these requirements can entail significant sacrifices on the part of founders, the risky nature of investments in their companies often leaves little choice.

The importance of venture capitalists' willingness to invest in high-risk companies must not be understated. In particular, this willingness provides an essential lifeline to entrepreneurs, whose businesses usually cannot access lower-cost capital early on due to their minimal assets.⁴¹ "Uncertainty is inherent in startup companies because their innovative products and business plans are untested at the time of investment."⁴² Given how difficult it is for a new startup to achieve early success in its chosen market, if venture capitalists were not tolerant of failure, many promising startups would otherwise be liquidated after early progress proved unsatisfactory.⁴³ This risk tolerance does far more than prevent a venture capitalist's early exit. Research shows that those venture capitalists that are more tolerant of failure tend to pick more innovative startups to invest in.⁴⁴ In turn, startups supported by such venture capitalists have more successful initial public offerings and produce greater numbers of patents - patents that tend to have a greater impact on their respective markets.⁴⁵ In general, venture-backed businesses

⁴⁰ *Id.*

⁴¹ Zider, *supra* note 35 at 132-133.

⁴² Abraham J.B. Cable, *Fending for Themselves: Why Securities Regulations Should Encourage Angel Groups*, 13 U. PA. J. BUS. L. 107, 121 (2011).

⁴³ Xuan Tian & Tracy Yue Wang, *Tolerance for Failure and Corporate Innovation*, REV. OF FIN. STUD. (forthcoming) (manuscript at 1), available at <http://ssrn.com/abstract=1399707>.

⁴⁴ *Id.* at 2.

⁴⁵ *Id.*

have a significantly higher rate of survival than those without venture backing.”⁴⁶ It is unsurprising, then, that in the years since their rise to prominence, venture capital firms have become “important intermediaries in financial markets, providing capital to new ventures that might otherwise have difficulty attracting financing.”⁴⁷

Although venture capital firms remain an important part of startup financing, a lot has changed since the early days of the tech industry, and the needs of newly-formed startups are now quite different. Modern startups are far less capital-intensive than they used to be, and now frequently require less money than the typical minimum venture capital investment.⁴⁸ As a result, there is often what some have called a “funding gap” between the amount covered by seed funding, which is usually below \$500,000, “and the minimum amounts venture capital funds invest . . . [which is] typically \$5,000,000.”⁴⁹ In addition, venture capitalists may ask for more control than a modern startup can afford in its earliest stages. In addition, venture capitalists have a lengthy diligence process and can take up to six months to decide whether they will invest, which may be far too slow for a startup in dire need of funds.⁵⁰ Finally, and quite significantly, venture capitalists may leverage their equity ownership and board seats to force a founder out of the company if the

⁴⁶ Dos Santos et al., *supra* note 34 (citing A. L. Zacharakis & G. D. Meyer, *Lack of Insight: Do Venture Capitalists Really Understand Their Own Decision Process?*, 13 J. Bus. Venturing 57, 57-76 (1998)).

⁴⁷ Dos Santos et al., *supra* note 34 at 58.

⁴⁸ Cable, *supra* note 42 at 108; *see also* Horowitz, *supra* note 30.

⁴⁹ Cable, *supra* note 42 at 108.

⁵⁰ Martin Zwilling, *Top 10 Sources Of Funding For Start-ups*, FORBES (Feb. 12, 2010), <http://www.forbes.com/2010/02/12/funding-for-startups-entrepreneurs-finance-zwilling.html>; *see also* Horowitz, *supra* note 30.

venture capitalist determines he or she is responsible for poor performance, an aspect that founders would, understandably, wish to avoid.⁵¹

As a result, funding sources outside the traditional venture-backed system have risen in prominence to meet the changing needs of founders. One such source is the angel investor, a wealthy individual that funds promising startups before they are ready for venture capital.⁵² Unlike venture capitalists, angel investors usually do not insist on control rights like board seats, leaving founders with the ability to control their company's direction and strategy for longer.⁵³ Angels are also willing to invest smaller amounts of money, which helps fill the "funding gap" and allows founders to raise money from a greater number of sources.⁵⁴ Combined with the fact that angels often use their connections to bring other angels on board, companies can sometimes get by on an initial financing consisting solely of angel investments.⁵⁵ Nevertheless, companies backed solely by venture capitalists do better overall than those with backing from a combination of venture capitalists and angels or angels alone, although research has shown "that companies with angel-only financings were significantly less likely to fail than companies receiving venture financing."⁵⁶

An even more recent development is the rise of startup incubators, which provide not only financial resources but also strategic planning assistance and

⁵¹ Zider, *supra* note 35 at 136.

⁵² Cable, *supra* note 42 at 108.

⁵³ *Id.* at 129.

⁵⁴ See Horowitz, *supra* note 30.

⁵⁵ Cable, *supra* note 42.

⁵⁶ Cable, *supra* note 42 at 129.

infrastructure like office space and computer equipment, in exchange for equity.⁵⁷ Participants benefit both from this expert guidance, but also from the ability to network internally with other companies being supported by the same incubator.⁵⁸ Furthermore, a fledgling startup can stick with an incubator from inception straight through its initial public offering, should it come to pass. In fact, since many incubators focus on early stage companies, they often sell their interests once the company goes public, thus focusing more on short-term profit than long-term influence over the company.⁵⁹

Although the process by which potential investors engage with startups can vary greatly depending on the parties involved, one increasingly common factor considered by many investors – particularly in the technology industry – is the strength of a company’s intellectual property position. In today’s highly competitive landscape—in which investors are presented with numerous possible ventures with each seeking support for a new, unproven technology—a company’s intellectual property situation can make a large difference in determining which companies ultimately get funded. Research has shown that there is a “marked correlation between success” as measured by a company achieving its initial public offering or getting acquired “and a company having developed (or possessed) intellectual property,” a correlation that is “even greater . . . [when] companies . . . have good or

⁵⁷ Meredith M. Brown, Michael P. Harrell, & William D. Regner, *Internet Incubators: How to Invest in the New Economy Without Becoming an Investment Company*, 56 Bus. Law. 273, 273 (2000).

⁵⁸ *Id.* at 273-274.

⁵⁹ *Id.* at 274.

strong intellectual property positions.”⁶⁰ As one venture capitalists has commented, “[it is] impossible to get financing without a good patent strategy, freedom to operate and good prospects of patentability.”⁶¹

Given the importance of venture backing to the startup community, as well as the advantage of a concentrated body of respondents, this study examines the viewpoints and experiences of venture capitalists and their portfolio companies in relation to patent demands. Details of the study are provided in the design and methodology section below.

Design of Study and Participants

The study was conducted in September and October of 2013. Two surveys were prepared, one for venture capitalists and one for companies within the portfolios of those venture capitalists. Both surveys were submitted to the Western Institutional Review Board, which determined that the research met the exemption criteria for human subjects research under 45 CFR §46.101(b)(2).⁶² The surveys were prepared for distribution through the National Venture Capital association. The survey language was tested by staff members of the National Venture Capital Association, as well as by selected board members of the Association who volunteered to serve as testers.

⁶⁰ Joseph Hadzima, Bruce Bockmann, & Alexander Butler, *IP in early stage commercial and investment success*, INTELLECTUAL ASSET MGMT., Mar.-Apr. 2010, at 52, 52.

⁶¹ Colleen V. Chien, White Paper for Open Technology Institute, *Patent Assertion and Startup Innovation*, NEW AMERICA FOUNDATION (2013) at 20, available at <http://ssrn.com/abstract=2321340>.

⁶² See Letter from Western Institutional Review Board dated September 4, 2013 (on file with author).

The National Venture Capital Association distributed both versions of the survey by email to their member venture capitalists, asking that the members fill out the venture capital survey themselves and distribute the company survey to their portfolio companies. Participants were told that the responses would be anonymous and reported only in the aggregate. The results were delivered to the author in anonymized form.

The National Venture Capital Association has not taken a position on patent assertion. In introducing the survey, member companies were told the following:

In light of recent patent reform discussions on Capitol Hill, the NVCA is working with Robin Feldman, Professor and Director of the Institute for Innovation Law at University of California Hastings to gather information about the current environment for patent assertions within the venture-backed company community. While we have anecdotal information that patent trolling has become increasingly problematic for many of our members and their portfolio companies, particularly in the IT space, we do not have data to quantify the size and breadth of the issue.

The survey included questions about the respondent's individual experiences followed by questions about the respondent's overall impressions. In order to ensure that answers about the respondent's individual experiences were derived from direct experience to the extent possible, venture capital respondents were asked to answer the direct experience questions only for companies "upon whose boards you personally sit as an investor."

Participants were also asked if they would be willing to participate in further confidential research. Approximately 50% of the venture capitalists and 50% of the portfolio companies were willing and provided contact information. That contact information was delivered to the author separately from the individual answers and will be held for further qualitative research. (It is interesting that precisely half of each group was willing to speak further and half was not.)

Early in the survey, participants were asked whether they or one of their companies has ever received patent demands. Those who answered, “no” were routed directly to the final set of questions related to the respondent’s perceptions of patent demands.

Study Limitations

Research through voluntary responses always contains significant limitations. The results can be skewed by those who choose to respond, presenting less than a full picture of the experiences of all members of the group. Similarly, the framing of the question can create a demand problem, priming those who have experienced the problem to respond. Most important, the answers represent the respondent’s perceptions and cannot be individually verified. For example, if a respondent notes that the company has spend \$50,000 responding to patent assertions, there are no public documents or other independent data to verify the figure.

Individual perceptions, however, may be useful for some of the inquiries in this type of survey. For example, to the extent we are examining whether the issue

of patent demands occupies an entrepreneur's mindshare, thereby potentially causing distraction, the entrepreneur's own impression of whether a problem exists can be helpful.

Along the same vein, if legislators and regulators believe they are responding to the needs of a particular sector of the market, it is useful to know whether that sector of the market agrees. For example, to the extent governmental officials believe patent assertion is necessary to attract venture capital for startups, it is important to know whether the venture capitalists have the same perception. Nevertheless, perceptions are no guarantee of reality for issues such as how widespread a problem may be or the ways in which it is manifesting itself.

I note in particular that the results may be skewed by the large percentage of respondents who operate in the information technology sector. This could reflect a particular interest of those in the information technology section in the issue of patent demands. It could suggest that patent demands are particularly a problem in that sector, an issue that will be addressed further below. It could also simply suggest that a larger portion of venture-backed companies are in the information technology industry. Nevertheless, it is important to note the prevalence of responses from that sector.

Looking at both venture capitalists and their portfolio companies not only provided a broader sample, it also allowed a comparison of whether the companies themselves agreed with their venture backers about the extent of the problems, the cost involved, etc. In other words, it provided some small measure of consistency confirmation.

Research of any kind into patent demand activity is quite difficult. Although one can study patent demands that proceed to a fullblown lawsuit, evidence suggests that these are only the tip of the iceberg. For patent demand activity outside of the courthouse, information is scarce. Patent interactions are shrouded in nondisclosure agreements. Moreover, for a number of years, companies have been reluctant to speak to reporters or researchers, partly out of fear of retaliation by large players with large patent portfolios.⁶³ Thus, an anonymized survey, despite its many limitations, offers a useful vehicle for beginning to understand the issues at hand.

Finally, in noting limitations, it is important to note that a sample size of 200 respondents is small. The experiences and observations are useful for understanding the venture-backed company community, and the information is important, in light of the research obstacles described above. Nevertheless, any observations should be tempered with the caution appropriate for a grouping of this limited size.

General Characteristics of Respondents

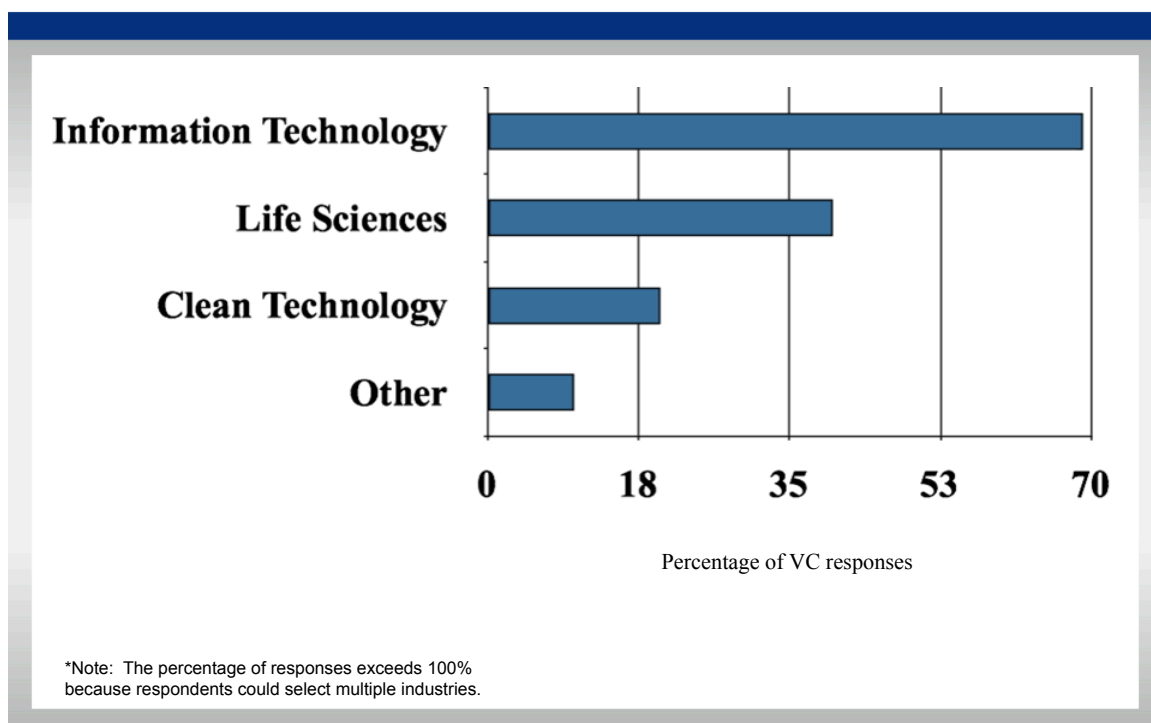
Respondents were given a choice of choosing information technology, life sciences, clean energy or other as the sector in which they operate. Venture

⁶³ See, e.g. Tom Ewing & Robin Feldman, *The Giants Among Us*, 2012 STANFORD TECH. L.R. 1, 2-3. (quoting National Public Radio report noting that “[W]e called people who had licensing arrangements with [a patent aggregator], we called people who were defendants in lawsuits involving [the aggregator’s] patents, we called every single company being sued by [a monetizing shell company]. No one would talk to us.”); see also Alex Blumberg & Laura Sydell, *This American Life: When Patents Attack* (National Public Radio broadcast, July 22, 2011)(transcript available at <http://www.npr.org/blogs/money/2011/07/25/138576167/when-patents-attack>)

capitalists were permitted to mark all categories that apply, with the result that the total exceeds 100%.

Of the venture capitalists that responded, 68% have portfolio companies operating in the information technology sector. 41% of the venture capitalists have companies operating in the life sciences sector and 19% in the clean technology sector. 10% of the venture capitalists have companies operating in sectors other than those categories, and respondents described those sectors as consumer apparel, oil and gas, retail, new media, industrial technology, and growth equity.

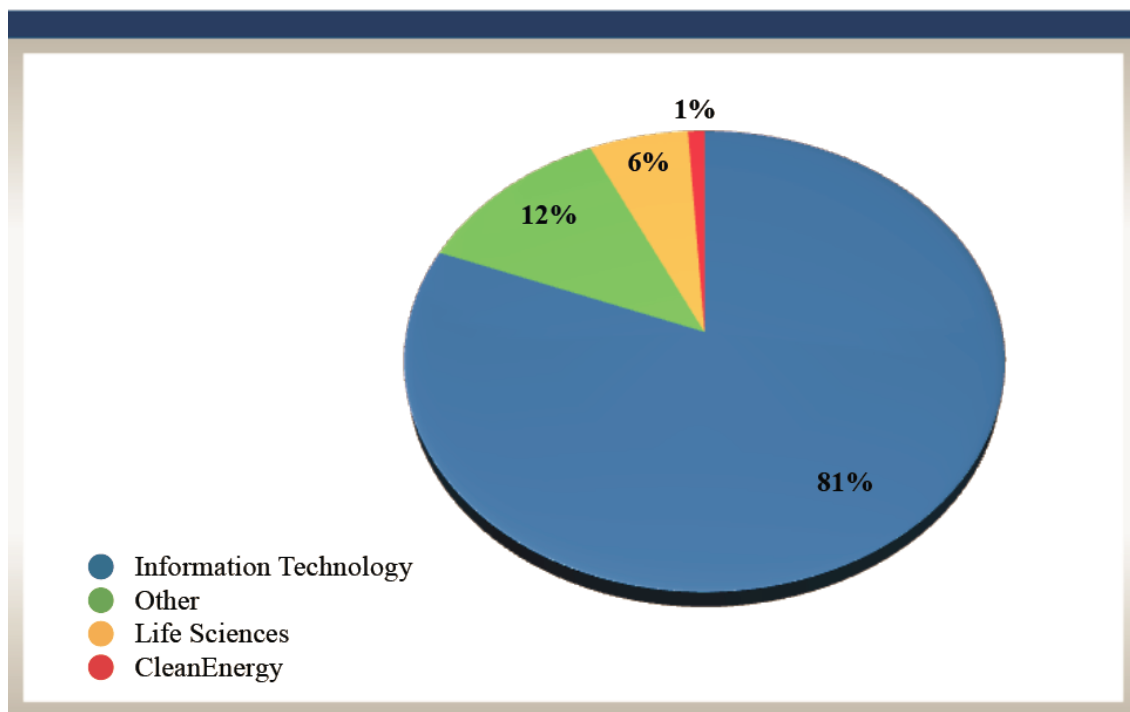
In which sectors do your portfolio companies operate?*



The portfolio companies that chose to respond were even more strongly concentrated in the information technology sector, with 81% of respondents indicating that they operate in information technology. 6% of the companies

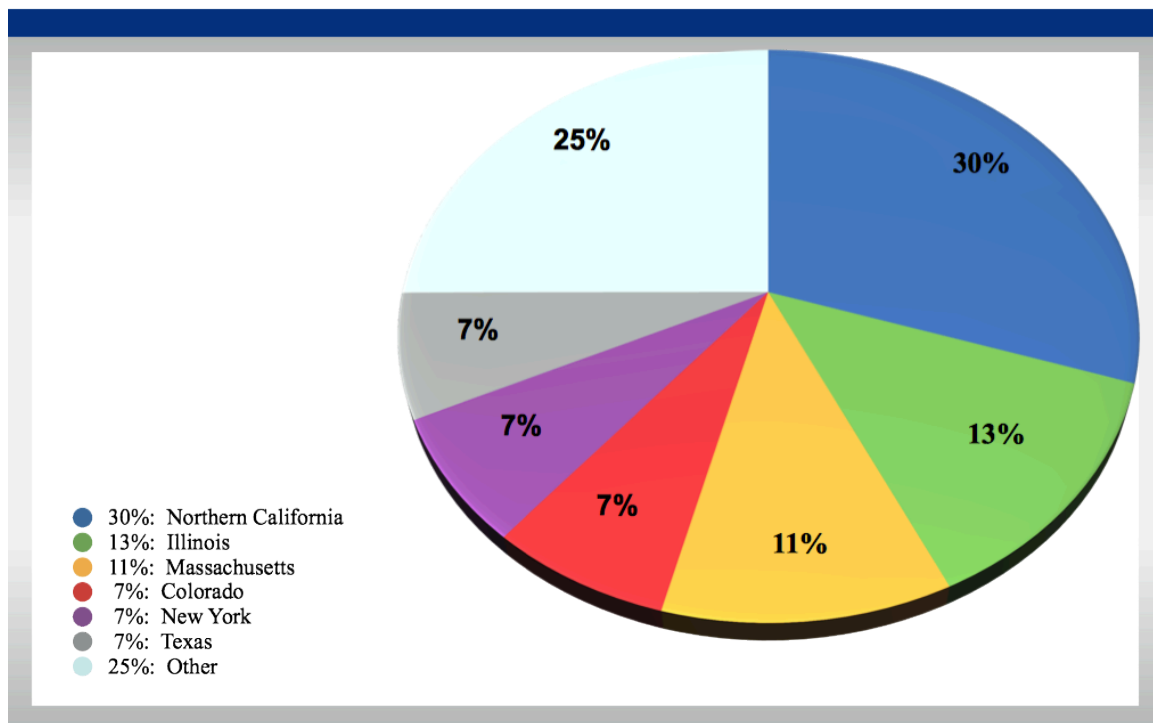
operate in the life sciences and only 1% in clean energy. 12% of the portfolio companies indicated that they operate in other sectors, which they further described as Internet technology, consumer electronics, consumer technology, eCommerce, eCommerce retail, retail, 3D printing, health information technology, Finance, consumer apparel, and education.

In which sector does your company operate?



Portfolio companies were also asked where their company is located, and the results mirror common perceptions of startup hubs. The largest group (32%) was located in California, with most of that in Northern California. Other groupings were located in Illinois (13%), Massachusetts (11%), New York (7%), Colorado (7%), Texas (7%), Wisconsin (4%), Virginia (2%), and Washington (2%). Appendix A contains a list of respondent locations by state.

Location of startup company headquarters



RESULTS

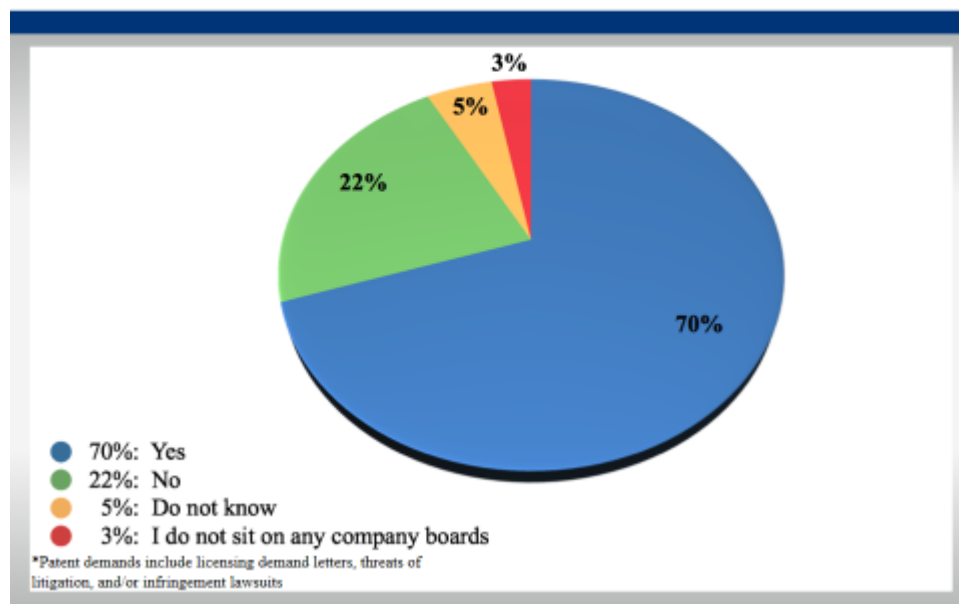
The paper will separate the results into the following sections. The first section looks at the extent of patent demands against venture-backed companies, based on the direct experiences of the venture capitalists and their portfolio companies. This section also considers whether patent demands are a technology sector problem only. The second section examines the source of patent demands against venture-backed companies and the timing of those demands. The third section examines the impact of patent demands, looking at both the economic impact and the personal toll on the individuals involved. The fourth section examines the respondents' perceptions of whether patent assertion is helpful or harmful for the venture-backed community and how patent demands affect a venture capitalist's decision whether to fund a company.

The Extent of Patent Demands Against Venture-Backed Companies

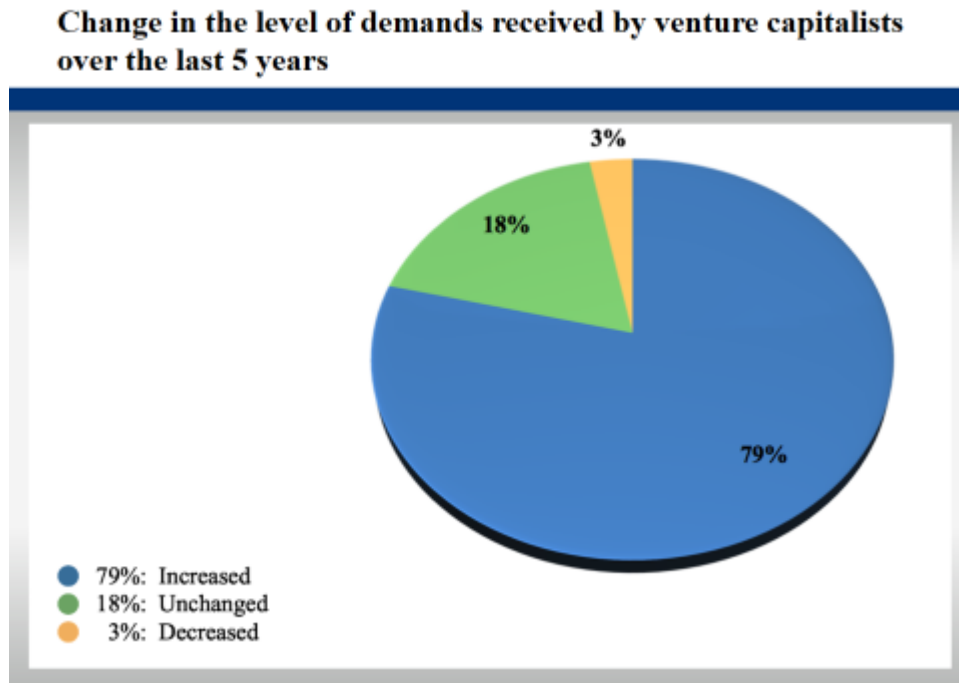
Survey responses suggest an extensive amount of patent demand activity against venture-backed companies. Specifically, the survey asked venture capitalists whether any of their portfolio companies have received patent demands. Patent demands were defined broadly, with the question listing licensing demand letters, threats of litigation, and infringement lawsuits as examples of patent demands. The survey asked venture capitalists to respond only for companies on whose boards they sit personally as an investor.

70% of the venture capitalists reported that they have portfolio companies that have received patent demands.

Percentage of venture capitalists whose portfolio companies have received patent demands*



In addition, the venture capitalists were in general agreement that patent demands are increasing against venture-backed companies. **79% responded that the number of patent demands have increased over the last five years** for their portfolio companies overall.



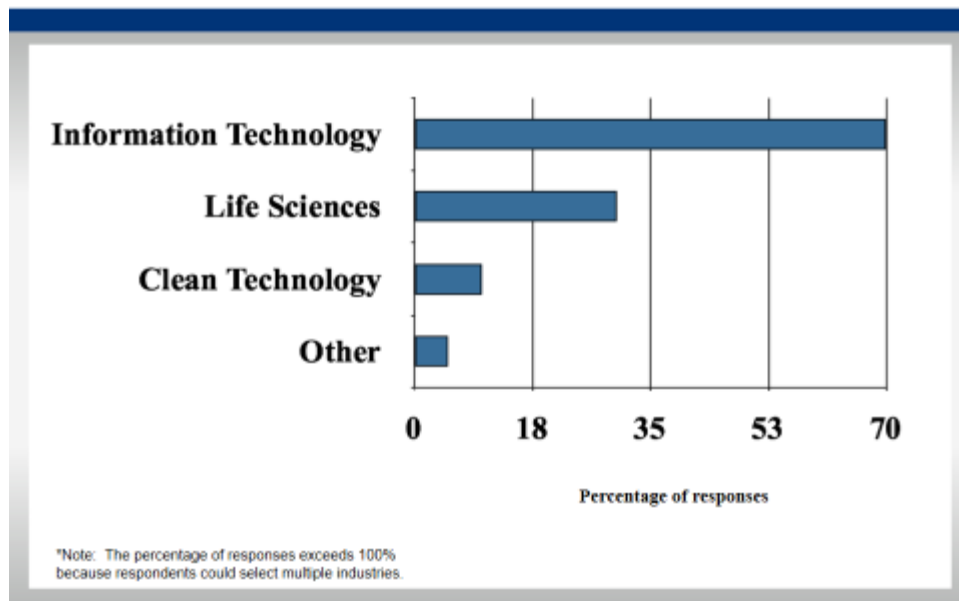
The data suggest, however, that the phenomenon is best understood on an industry wide basis, in other words, looking at the venture-backed industry as a whole. Not all portfolio companies have received patent demands. For example, with venture capitalists whose companies have received patent demands, 60% have seen demands asserted against up to one-quarter of their portfolio companies, and 35% have seen demands asserted against between one-quarter and half of their portfolio companies. Similarly, with the portfolio companies themselves, 31% have received patent demands. Even the 31% number, however, is striking. It suggests

that ***roughly 1 in three venture-backed companies must figure out how to respond to a patent demand.***

On the whole, patent demands continue to dominate in the information technology sector. Venture Capitalists whose companies had received patent demands were asked whether they had experienced those demands in the information technology sector, life sciences, clean energy or other. Again, to account for broad venture portfolios, venture capitalists were permitted to mark all categories that applied, with the result that the total will exceed 100%.

Of the venture capitalists whose companies have received patent demands, ***70% have experienced those demands in the information technology sector.*** Patent demands, however, are not limited to the information technology sector. ***30% of the relevant venture capitalists had received patent demands in the life sciences sector.*** In addition, 10% have received patent demands in the clean energy sector, and 5% in other sectors.

Sectors in which venture capitalists have experienced patent demands

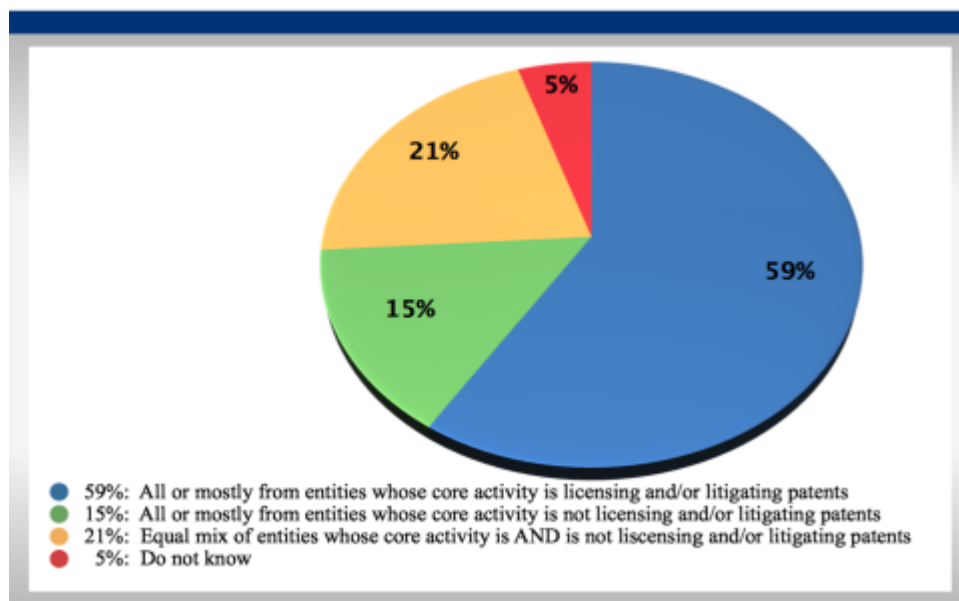


Source and Timing of Demands

The study asked both the venture capitalists and the portfolio companies if they could identify the type of entities initiating the patent demands against them. As described in the methodology section above, respondents were asked whether the patent demands came from entities whose core activity is licensing and/or litigating patents as opposed to those whose core activity is not licensing and/or litigating patents.

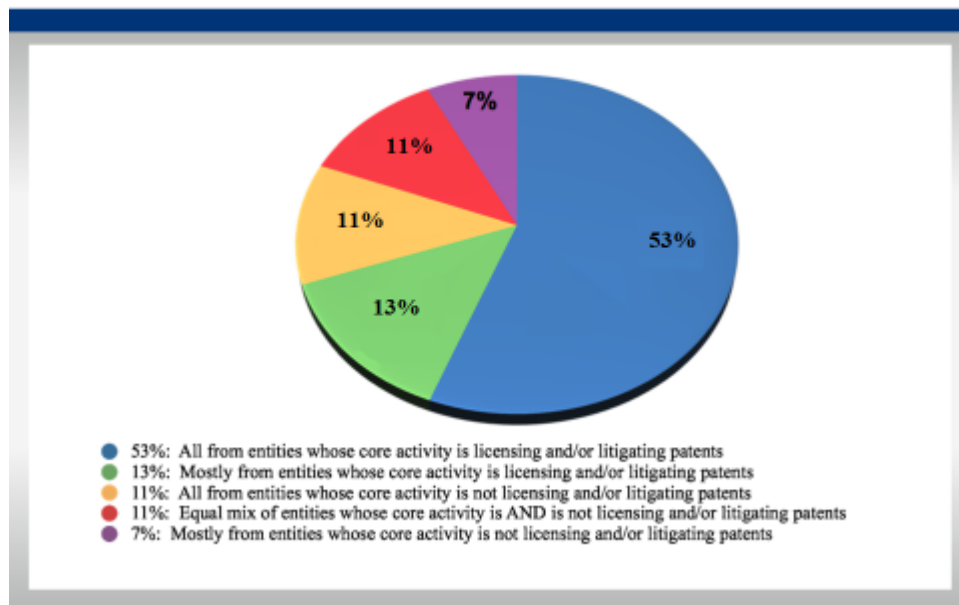
For 59% of the venture capitalists, the patent demands came either all or mostly from those whose core activity is licensing or litigating patents. For another 21% of the venture capitalists, the demands came from an equal mixture of those whose core activity is licensing and litigating patents and those whose core activity is not. The question allowed respondents to answer separately for “all” or “most”, although the chart below groups those responses.

Source of patent demands experienced by venture capitalists



The portfolio companies responded with similar percentages on this question. ***For 66% of the portfolio companies, the patent demands came either all or mostly from those whose core activity is licensing or litigating patents.*** For another 11% of the portfolio companies, the demands came from an equal mixture of those whose core activity is licensing and litigating patents and those whose core activity is not. ***These results suggest that monetizers are initiating most of the patent demand activity against startups.***

Source of patent demands experienced by companies



The study also looked for evidence of whether patent demands were timed to correspond with funding infusions. Anecdotes have circulated in the venture-backed community of companies receiving demands immediately after receiving their first round of funding. The results, however, did not reveal evidence of widespread patent demands related to receiving initial funding. Only 11% of portfolio companies reported receiving patent demands within one year of receiving their first round of venture funding, and 53% reported that they received their first patent demand more than a year after receiving the first round of venture funding. Moreover, 27% of the portfolio companies received their first patent demand before receiving any funding at all. Thus, we could find no systematic evidence of demands timed to coincide with initial rounds of venture funding. In contrast, in Chien's interviews with venture capitalists, some noted that demands "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.”⁶⁴

Examining the initial round of venture funding cannot completely answer the question of whether there are patterns of demands timed to coincide with funding event. It is possible that monetization involves a variety of approaches, with some monetizers targeting funding events. It is also possible that monetizers target funding events on the whole, and no pattern would emerge from looking only at initial funding. Nevertheless, focusing on initial funding, we did not find evidence of a sustained pattern of patent demands against venture-backed startups following their initial round of funding.

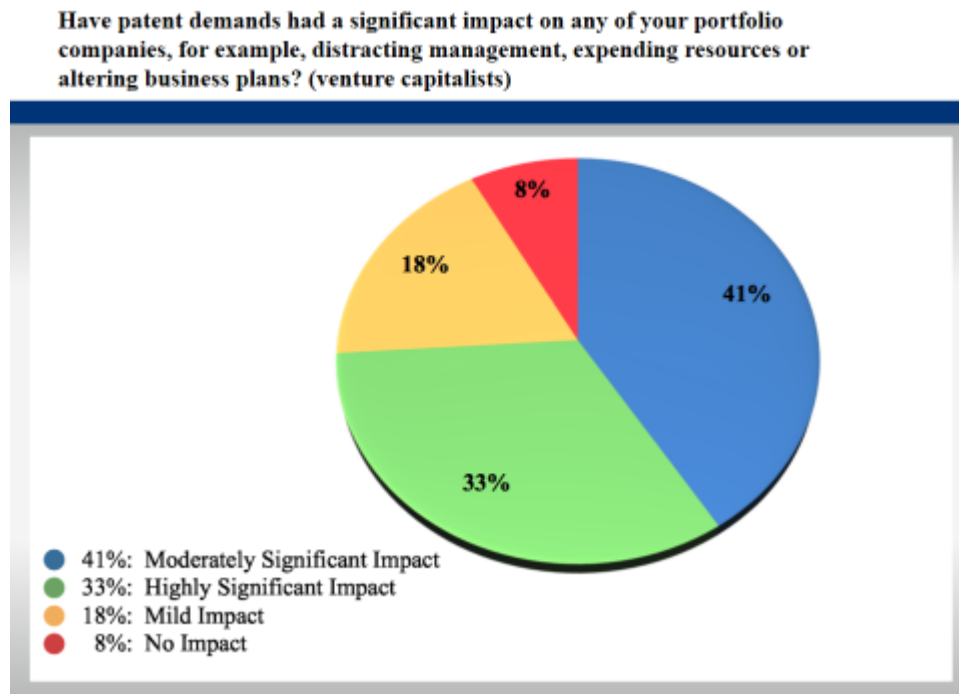
Impact of Patent Demands on Venture-Backed Startups

The study also examined the impact of patent demands on venture-backed startups, both from a quantitative and a qualitative perspective. Venture capitalists were asked whether patent demands had a significant impact on any of their portfolio companies. Examples of significant impact listed in the question included distracting management, expending resources, or altering business plans.

Only 8% of the venture capitalists reported that the patent demands had no impact on any of their portfolio companies that received them. In contrast, ***74% of the venture capitalists reported that patent demands had either a highly significant or a moderately significant impact on the companies that received them, including distracting management, expending resources, or altering***

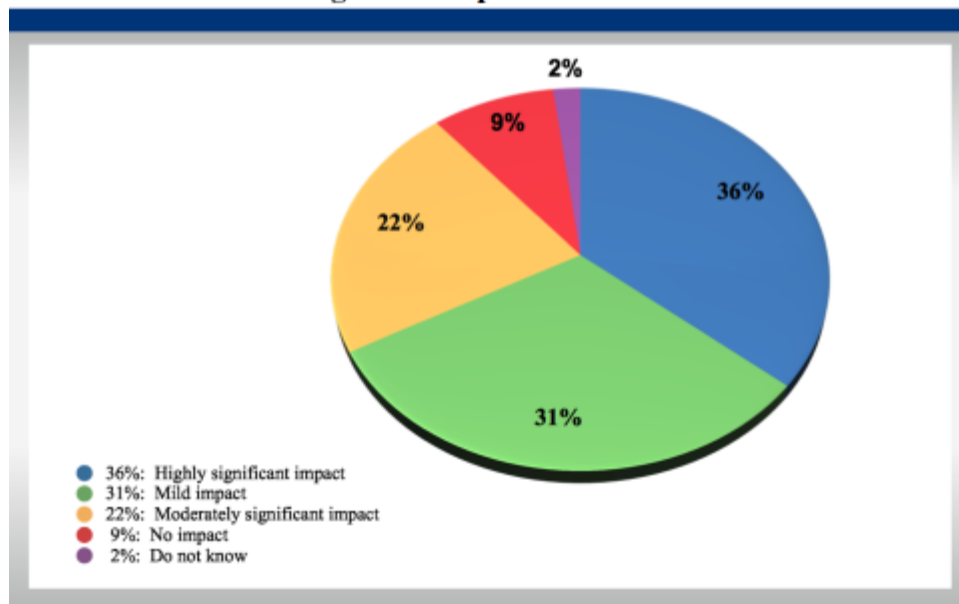
⁶⁴ See Chien, New America Foundation White Paper, *supra* note 10, at 11.

business plans. Another 18% of the venture capitalists reported that patent demands had a mild impact.



With the portfolio companies, 58% reported that patent demands had either a highly significant or moderately significant impact on their company, including distracting management, expending resources or altering business plans. Another 31% reported that patent demands had a mild impact. Similar to the venture capitalists, only 9% of the portfolio companies reported that patent demands had no impact at all.

Have patent demands had a significant impact on your company, for example, distracting management, expending resources or altering business plans?



Using a more drastic definition of impact, Professor Colleen Chien found that 40% of startups in her study that had received a patent demand from a patent assertion entity reported a “significant operational impact.”⁶⁵ Professor Chien defined significant operational impact as “a business strategy pivot, product change, business/business line exit, delay in hiring or meeting operational milestone, and/or a reduction in the value of the company.”⁶⁶ Although the questions differ in both the type of impact studied and the issue of the source of the relevant patent demands measured, both studies demonstrate the impact that patents demands are having on startup companies.

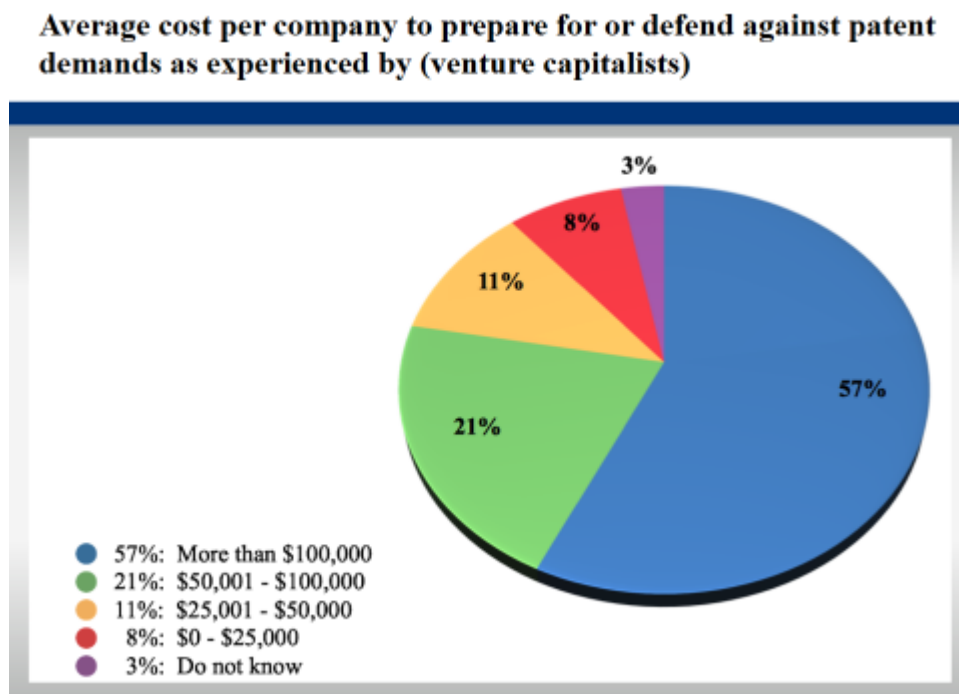
In terms of the cost of dealing with patent demands, the present survey

⁶⁵ See Colleen Chien, *Startups and Patent Trolls*, Report from the New America Foundation’s Open Technology Institute, available at <http://ssrn.com/abstract=2146251>

⁶⁶ See *id.*

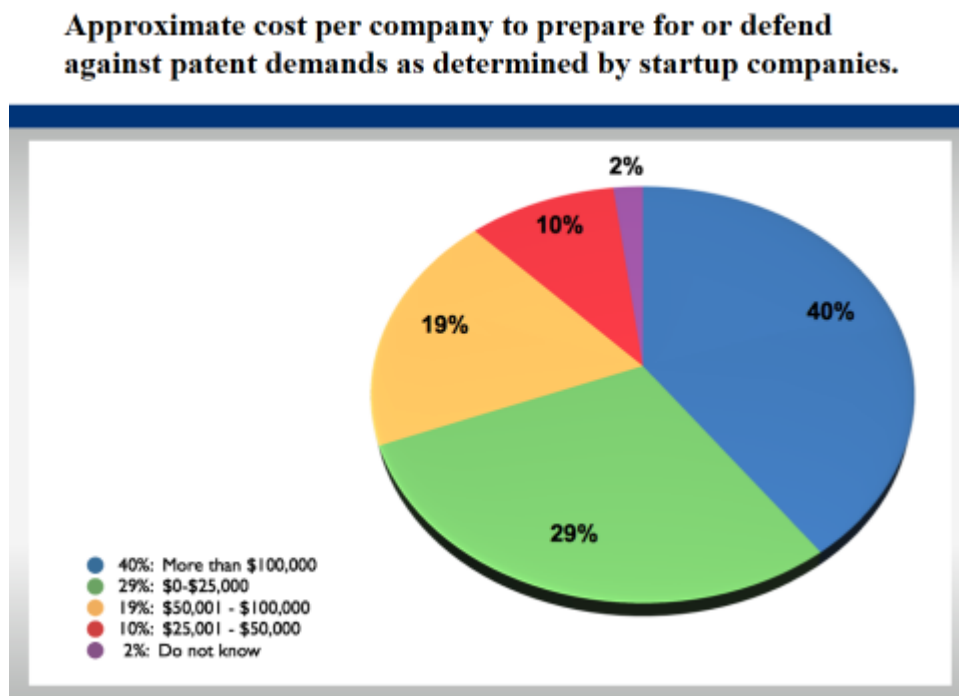
asked both venture capitalists and portfolio companies to estimate the average cost to prepare for and defend against patent demands. For the venture capitalists, the survey asked for an average cost per company. The questions noted that such costs could include time for company officers and employees, costs of outside counsel and consultants, or other costs.

57% of the venture capitalists estimated that the average cost per company to prepare for and defend against patent demands exceeds \$100,000. Another 21% estimated that the cost of preparing for and defending against patent demands totaled between \$50,000 and \$100,000.



Portfolio companies estimated the costs of preparing for and defending against patent demands at a lower number. Only 40% of the portfolio companies estimated that costs of patent demands exceeded \$100,000, in comparison to 57%

of the venture capitalists. In addition, 29% of the portfolio companies estimated the costs at below \$25,000, in contrast to 8% of the venture capitalists who estimated the cost at below \$25,000. The two groups were roughly in agreement with each other for the percentage of companies that spent between \$50,000 and \$100,000, as well as for the percentage of companies that spent between \$25,000 and \$50,000.



Professor Chien's survey suggests a higher average cost for defending against patent demands. Again, her study was based on the costs of defending against patent demands specifically by patent assertion entities—similar to what this study describes as monetizers.⁶⁷ Depending on whether the startup chose to settle or fight, the average costs reported in Chien's survey and interviews ranged from \$168,000

⁶⁷ For a description of different terms used in the discussion of patent demands, see text accompanying notes, 14-29, *supra*.

to \$857,000.⁶⁸ These higher figures may reflect the ability of patent assertion entities to impose higher costs on their targets.

The Human Factor

The most striking results in the study flowed from the venture capitalists and portfolio companies who took the time to provide details of the impact of patent demands on their companies. The survey provided space for respondents to elaborate on the impact of patent demands, and elaborate they did.

Extraordinary Impacts

Some companies and venture capitalists described extraordinary effects of patent demands on a particular company. ***One company had to raise a bridge round to cover costs related to dealing with patent demands. Another company spent millions of dollars defending against a lawsuit from “patent trolls,” and the company went under due to lack of funding.*** One venture capitalist described an “M&A [mergers and acquisitions] transaction escrow held up and millions spent in defense of meritless patent suit from a patent troll.” Another described a couple of cases in which the companies experienced material financial impacts.

Distractions to Management and Engineers

Numerous companies and venture capitalists spoke about the major distractions to management and other employees of the company, including time

⁶⁸ See Chien, *supra* note 65, at 2.

spent by engineers. One company noted pointedly that ***about 40% of the chief technical officer's time was redirected to fighting two patent infringement lawsuits filed within three weeks of each other.*** Another company explained that patent demands had absorbed ***hundreds of hours of the CEO's time*** and another simply noted that it was a “huge distraction.” Many companies described loss of management time to respond to discovery questions and develop a response strategy, and loss of engineering time to make technical workarounds. Over and over again, the companies and the venture capitalists talked about distraction of time and wasted resources.

Cost Impact

Other companies and venture capitalists underscored the impact of specific costs and the way in which patent demands now add to the general costs of doing business. For example, one venture capitalist noted that, “[m]ost of portfolio companies now need to hire an in-house general counsel to manage intellectual property matters, including defense against infringement claims. This is becoming a strategically important position to fill.”

In asking the companies and venture capitalists to estimate the cost of defending against patent demands, the survey had listed “over \$100,000” as the highest number. In the comments section, however, ***a number of the companies and venture capitalists described costs running into the millions of dollars.*** In the highest number cited, one startup company explained that it has spent \$4 million in litigation expenses. A number of others simply referred to costs in the

millions of dollars. ***One company reported that the cost of dealing with patent demands is the company's second biggest expense after salary, and that it is even larger than the cost of benefits.*** Others reported diverting money to legal counsel, as well as huge amounts of time spent by management and by the board. As one company noted, "we have had to invest time researching the background of the plaintiffs, the patent, the claim . . . etc. internally to determine how to defend ourselves from patent demands. . . . We expect to expend more resources as we engage counsel to defend ourselves from the suit. We are still at initial stages for our first lawsuit against an NPE."

The Human Face

Some companies and venture capitalists described the sheer human toll on those who had to contend with patent assertions.

We received a [cease and desist demand] from a patent troll on Christmas Eve 2011. The experience was new to us, and at the time, it seemed like an existential threat. It ruined my family's Christmas. The troll filed a lawsuit in the spring of 2012. The entire process lasted almost a year and completely distracted our company during the entire event. It took a huge emotional and financial toll on our small company, in addition to slowing down our progress.

One startup company used the following terms to describe the impact on the company: ***"Abject fear we are being driven out of business so this troll can put a***

trophy on his wall.” In a similar vein, one venture capitalist spoke about the damage to employee morale. Another company commented, **“I consider this process to be extortion.”**

These comments echoed the narratives Professor Colleen Chien has reported in her interviews with a group of small technology companies that had received patent demands from non-practicing entities.⁶⁹ Two of the most poignant comments from *Professor Chien’s research* are the following:

It was agonizing to hand over all the money we had earned from a product we had invented and created ourselves to a firm that invents nothing and creates nothing. Our founder has since lost his house, car [sic] all his assets.⁷⁰

And

They sued my startup for infringement on a group of insanely broad software patents. While many much larger companies are fighting we do not have the resources to do so. It is the single most frustrating experiences [sic] I’ve had professionally. Extortion, pure and simple. The troll even admitted his model was to sue everyone, get settlement dollars because fighting was too expensive.⁷¹

⁶⁹ See Colleen Chien, *Startups and Patent Trolls*, Report from the New America Foundation’s Open Technology Institute, 12-14 available at <http://ssrn.com/abstract=2146251>

⁷⁰ *Id* at 14.

⁷¹ *Id*.

Managing Customers, Prospects, and Funders

Other companies and venture capitalists described the difficulties of managing the issue with customers, prospects and funders. One company noted that it had to “sell around the story as new prospects were wary of using the product given the litigation,” and a venture capitalist talked about the problem of slowing down sales “as prospective customers assess the risk of claims on the likelihood that the product and support will be available.” Another venture capitalist talked about the impact of slowing down next rounds of fundraising. These can be critical issues for a fledgling company, when every funding prospect and every customer matters in trying to gain traction.

More Moderate Impacts

A small number of respondents noted more moderate impacts, such as “slightly reorganized business to reflect patent” and “moderate \$ spent externally on legal counsel.” One company noted that so far, they have been able to successfully demonstrate they are not party to any of the claims. In addition, one venture capitalist noted that the impact can be “highly variable.”

Weak Claims; Wasteful Process

Finally, many expressed frustration at what they perceive to be the weaknesses of the claims, the wastefulness of the process, and the absurdity of the current process of patent demands as a whole. For example, one company described the following experience:

We spent millions to settle pretty much completely spurious claims. The common approach that these “entities” took was: --make a claim--try to defend it as best they could--eventually offer to settle by observing that it would cost us \$3-5 million to fight it and we might lose, vs. the #2-3 million they offer to settle initially . . . we’d work to negotiate them down to \$1-2 million, hold our nose, and pay.

Another noted that the patent asserted against the company was “broad reaching and has been poorly received [in the industry].” Yet another company reported that after spending \$1 million on a case that went to litigation, the company won but did not recover anything more than court costs, which are typically a small amount.

Numerous companies and venture capitalists described the claims as frivolous and no more than nuisance claims.

One venture capitalist took the time to write a side letter with an extensive allegory of “lawn trolls” that arrive in a community and convince all of the neighbors to negotiate over the right to enjoy the view of each other’s lawns. At the end of the story, the neighborhood has suffered costly and distracting negotiations, as well as significant transaction costs, while “the troll gets rich for its foresight, wisdom, and creation of the market.” The venture capitalist concluded that the moral of the story is that, “lawn trolls . . . do not really want fair compensation for lawn use. What they really want is to tax every lawn.”

Finally, ***one venture capitalist summed up the impact for venture-backed companies succinctly by noting that when companies spend money trying to protect their intellectual property position, they are not expanding; and when***

companies spend time thinking about patent demands, they are not inventing.

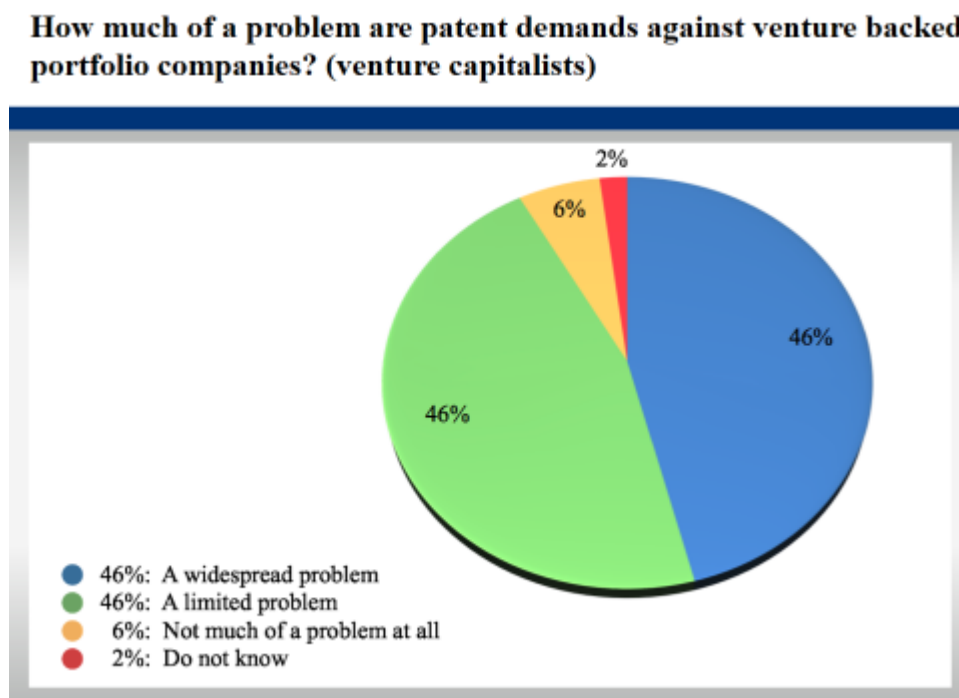
Is Patent Assertion Helpful or Harmful for the Venture-Backed Community?

A key goal of the study was to test the venture-backed community's own views of whether patent assertion in their field is helpful or harmful. Some have suggested that patent assertion is helpful for startups because unsuccessful companies can sell their patents to a monetizer if the company fails. In particular, in listing potential positive aspects of patent assertion entities, government officials have suggested that patent assertion entities, "can make it easier for a failed start-up to monetize its patents, providing some insurance for venture capitalists."⁷²

The study tested whether the venture-backed community itself sees patent demands as a positive. The study also examined how patent demands factors into venture capitalists' decisions of whether to invest in a particular startup company. Thus, following the questions for venture capitalists and portfolio companies about their experiences with patent demands, the survey asked a series of viewpoint questions. Respondents who had answered at the start of the survey that they had not received patent demands were routed directly to this last set of questions.

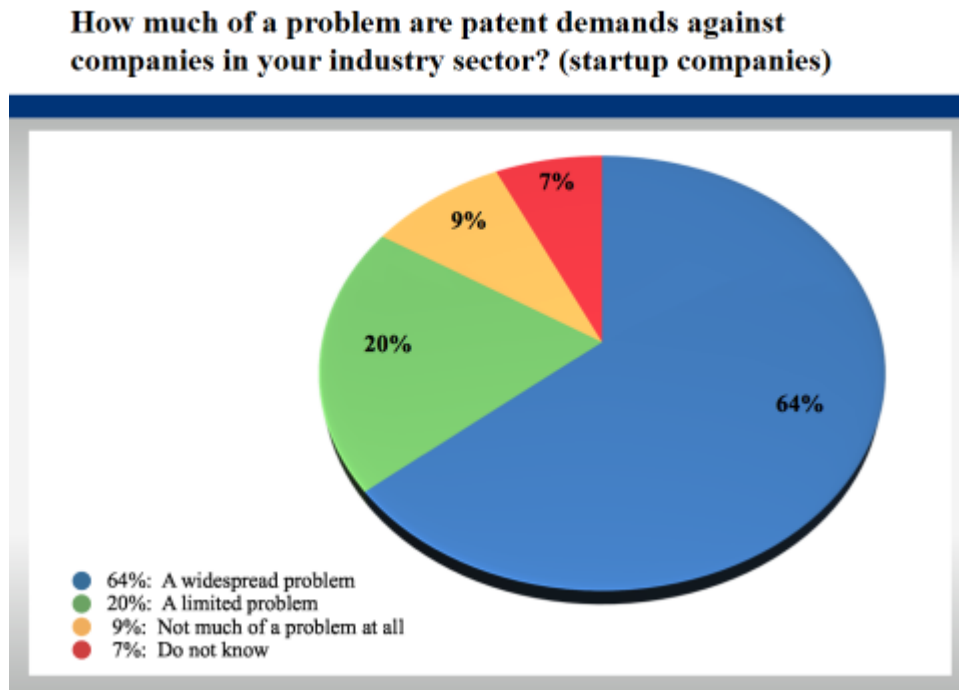
⁷² See Federal Trade Commission Chairwoman Edith Ramirez, Opening Remarks, Computer Law & Patent Assertion Entities: What Antitrust Enforcers Can Do, (June 30, 2013), *available at* <http://www.ftc.gov/speeches/ramirez/130620paespeech.pdf>. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1337166 In Chien's work, only 5% of startup companies responded that they have monetized their patents, with some of those explaining that they had either sold the patents along with a product line, sold unused patents, or licensed their patents. See Chien, *supra* note 65, at 17. She points out that many startups do not bother to obtain patents, particularly in the software industry, and notes, in addition, that companies may be embarrassed to acknowledge monetizing patents. See *id.* at 17-18.

The survey asked venture capitalists, “how much of a problem are patent demands against venture-backed portfolio companies.” Only 6% responded that patent demands are not much of a problem at all for venture-backed companies. ***92% of the venture capitalists responded that patent demands are a problem for venture-backed companies, with 46% considering patent demands a widespread problem and 46% considering patent demands a limited problem.***



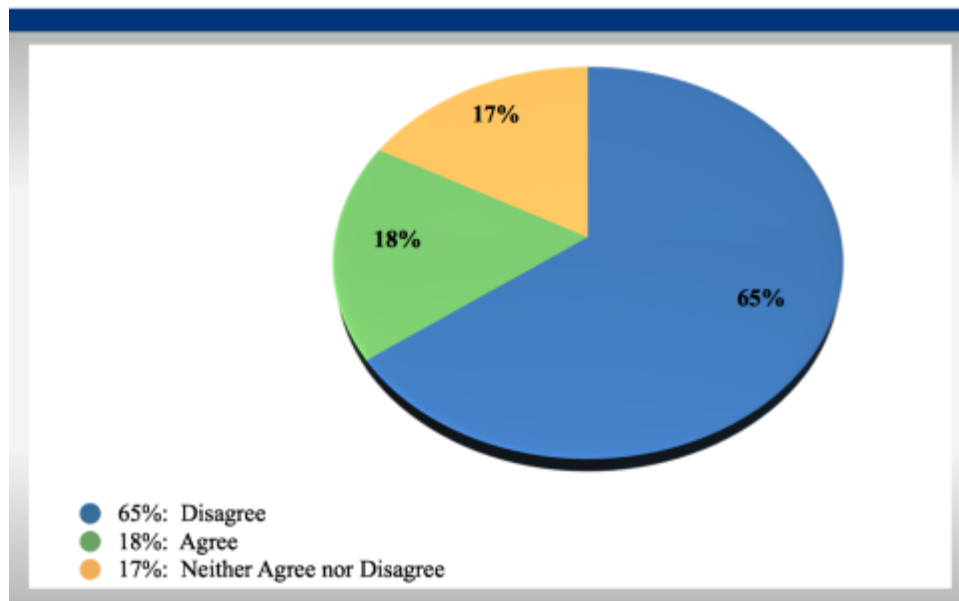
Interestingly, portfolio companies believe even more strongly that patent demands are a widespread problem. Using a variant of the venture capitalist question, portfolio companies were asked, “how much of a problem are patent demands against companies in your industry sector.” ***64% of portfolio companies responded that patent demands are a widespread problem in their sector, with another 20% responding that patent demands are a limited problem.*** Only 9% of

portfolio companies responded that patent demands are not much of a problem at all.



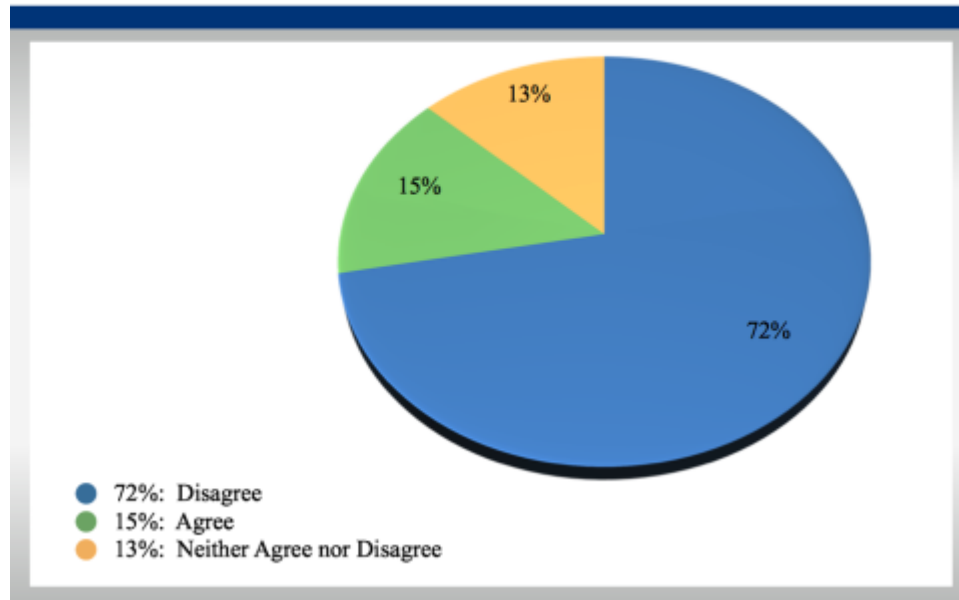
Perhaps one of the most telling set of responses, however, came from asking the venture capitalists how patent demands play into their funding decisions. **65% of the venture capitalists disagreed with the statement, “[a]s a venture capitalist, in making funding decisions, I consider the potential for selling patents to patent assertion entities if the companies fail.”** Only 18% agreed. The largest group of responses came from those who not only disagreed, but disagreed strongly—constituting 41% of respondents.

As a venture capitalist, in making funding decisions, I consider the potential for selling the patents to patent assertion entities if the companies fail.



Similarly, *when the venture capitalists were asked whether they see “patent assertion as positive for startups and the startup community,” 72% either disagreed or disagreed strongly.* Again, the largest group of responses came from those who disagreed strongly—constituting 50% in this case.

As a venture capitalist, I see patent assertion as positive for startups and the startup community.



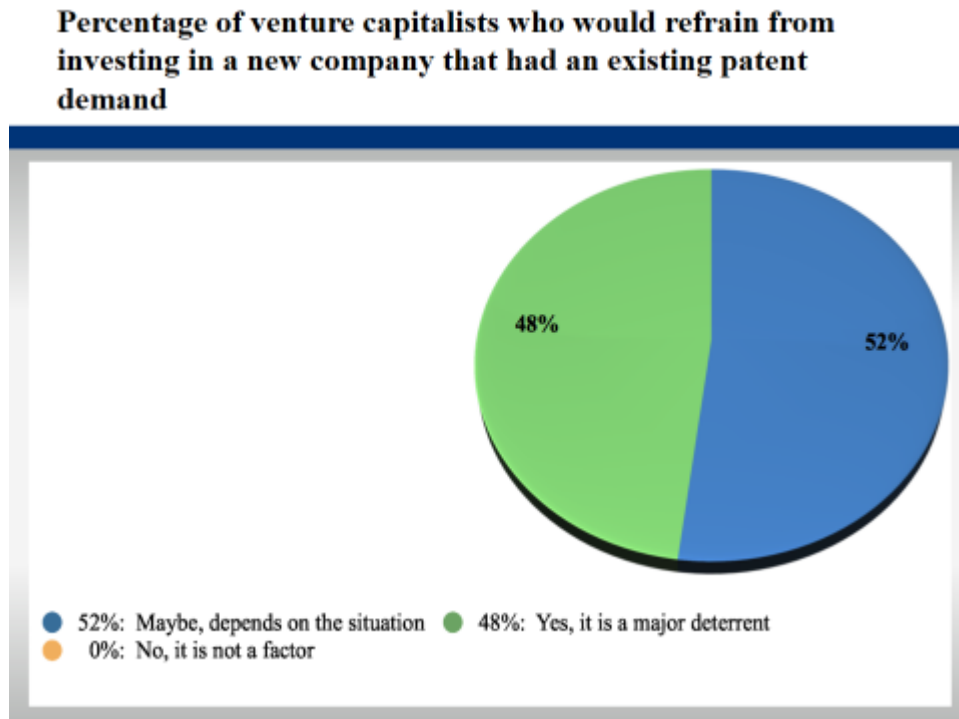
These results are consistent with comments I heard from venture capitalists as I was designing the survey. *As one venture capitalist noted, “VCs swing for the fences; they are not interested in pennies on the dollar.”*

These results are also consistent with Chien’s findings in her interviews of venture capitalists. 78% of the venture capitalists disagreed that the ability of companies to monetize their patents through “NPEs/”Trolls” helped innovation, and 83% agreed that NPEs/Trolls are hurting innovation.⁷³

The most striking results, however, came in response to the question of whether the venture capitalists would “refrain from investing in a new company that had an existing patent demand.” Not a single respondent chose the answer, “no, it is not a factor.” *Rather, 100% of venture capitalists indicated that if a company had an existing patent demand against it, it could potentially be a major*

⁷³ See Chien, Open Technology Institute White Paper, *supra* note 10, at 21.

deterrent in deciding whether to invest. Roughly half indicated that it would be a major deterrent on its face, and the other half indicated that it could be a major deterrent, depending on the circumstances.



In short, the venture-backed company community overwhelmingly views patent demands as a negative for their industry, does not think about the potential for reselling patents when deciding whether to invest in a company, and would pause before investing in a company that had an existing patent demand against it. Thus, the notion that patent assertion is helpful for the venture capital community is contradicted by the community itself in this study.

Conclusion

The results of surveying 200 venture capitalists and their portfolio companies provide strong indications of the impact that patent demands are having

on the venture-backed community. Both the companies and the venture capitalists, overwhelming believe that patent demands have a negative impact on the venture-backed community, with all or most of those assertions coming from entities whose core activity involves licensing or litigating patents. These impacts are described in terms of the specific costs expended by the companies and by the distraction to management, engineers, and other employees. Most important, participants described the human toll that patent demands have had on entrepreneurs. In addition, when making funding decisions, the vast majority of venture capitalists do not consider the potential for selling to assertion entities if the company fails. On the flip side, 100% of venture capitalists indicated that if a company had an existing patent demand against it, it could potentially be a major deterrent in deciding whether to invest.

Finally, one venture capitalist provided an excellent summary of the impact of patent demands on venture-backed companies. When companies spend money trying to protect their intellectual property position, they are not expanding; and when companies spend time thinking about patent demands, they are not inventing.

Appendix A

10. Location of Company Headquarters for Portfolio Company Respondents

#	Answer		%
1	Alabama		1%
2	Alaska		0%
3	Arizona		0%
4	Arkansas		0%
5	California (No.)		30%
6	California (So.)		2%
7	Colorado		7%
8	Connecticut		0%
9	Delaware		3%

10	District of Columbia			0%
11	Florida			0%
12	Georgia			0%
13	Hawaii			1%
14	Idaho			1%
15	Illinois			13%
16	Indiana			0%
17	Iowa			1%
18	Kansas			0%
19	Kentucky			0%
20	Louisiana			0%

21	Maine			0%
22	Maryland			3%
23	Massachusetts			11%
24	Michigan			1%
25	Minnesota			1%
26	Mississippi			0%
27	Missouri			0%
28	Montana			0%
29	Nebraska			0%
30	Nevada			0%
31	New Hampshire			0%

32	New Jersey			1%
33	New Mexico			0%
34	New York			7%
35	North Carolina			1%
36	North Dakota			0%
37	Ohio			0%
38	Oklahoma			0%
39	Oregon			1%
40	Pennsylvania			1%
41	Rhode Island			0%
42	South Carolina			0%

43	South Dakota			0%
44	Tennessee			0%
45	Texas			7%
46	Utah			0%
47	Vermont			0%
48	Virginia			2%
49	Washington			2%
50	West Virginia			0%
51	Wisconsin			4%
52	Wyoming			0%
Total		1		100%
		5		

