

The Giants Among Us*

By Robin Feldman & Tom Ewing¹

Abstract

The patent world is undergoing a change of seismic proportions. A small number of entities have been quietly amassing vast treasuries of patents. These are not the typical patent trolls that we have come to expect. Rather, these entities have investors such Apple, Google, Microsoft, Sony, the World Bank, and non-profit institutions. The largest and most secretive of these has accumulated a staggering 30,000-60,000 patents.

Investing thousands of hours of research and using publicly available sources, we have pieced together a detailed picture of these giants and their activities. We consider first the potential positive effects, including facilitating appropriate rewards for forgotten inventors, creating a market to connect innovators with those who can manufacture their inventions, and most important, operating as a form of insurance – something akin to an Anti-Troll defense fund.

We turn next to the potential harmful economic effects, including operating as a tax on current production and facilitating horizontal collusion as well as single firm anticompetitive gamesmanship that can raise a rival's costs. Most important, we note that mass aggregation may not be an activity that society wants to encourage, given that the successful aggregator is likely to be the one that frightens the greatest number of companies in the most terrifying way.

We argue that mass aggregators have created a new market for monetization of patents. It is vast, rapidly growing, and largely unregulated. We conclude with some normative recommendations, including that proper monitoring and regulation will require a shift in the definition of markets as well as a different view of corporations and their agents.

* Publication forthcoming in the Stanford Technology Law Review; <http://ssrn.com/abstract=1923449>.

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The Patent world is quietly undergoing a change of seismic proportions. In a few short years, a handful of entities have amassed vast treasuries of patents on an unprecedented scale. To give some sense of the magnitude, our research shows that in a little more than five years, the most massive of these has accumulated 30,000-60,000 patents worldwide, which would make it the 5th largest patent portfolio of any domestic US company and the 15th largest of any company in the world.

Although size is important in understanding the nature of the shift, size alone is not the issue. It is also the method of organization and the types of activities that are causing a paradigm shift in the world of patents and innovation.

These entities, which we call mass aggregators, do not engage in the manufacturing of products nor do they conduct much research. Rather, they pursue other goals of interest to their founders and investors. Non-practicing entities have been around the patent world for some time, and in the past, they have fallen broadly into two broad categories.² The first category includes universities and research laboratories, which tend to have scholars engaged in basic research and license out inventions rather than manufacturing products on their own. The second category includes individuals or small groups who purchase patents to assert them against existing, successful products.

² Sannu K. Shrestha, *Trolls or Market Makers? An Empirical Analysis of Nonpracticing Entities*, 110 *Colum. L. Rev.* 114, 115 (“NPEs are firms that rarely or never practice their patents, instead focusing on earning licensing fees”); U.S. Fed. Trade Commission, 2011 WL 838912, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition* (2011) at 40 [hereinafter *Evolving IP*] (“NPE also commonly refers to firms that obtain nearly all of their patents through acquisition or purchase in order to assert them against manufacturers.”); *see also* 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, 1572 (2009).

Those in the second category have been described colloquially as “Trolls,” which appears to be a reference to the children’s tale of the three billy goats who must pay a toll to the troll waiting under the bridge if they wish to pass.³ Troll activity is generally reviled by operating companies as falling somewhere between extortion and a drag on innovation.⁴ In particular, many believe that patent trolls often extract a disproportionate return, far beyond the value that their patented invention adds to the commercial product, if it adds at all.⁵

The new mass aggregator, however, is an entirely different beast. To begin with, funding sources for mass aggregators include some very successful and respectable organizations, including manufacturing companies such as Apple, eBay, Google, Intel, Microsoft, Nokia and Sony, as well as academic institutions such as the University of Pennsylvania and Notre Dame, and other entities such as the World Bank and the William and Flora Hewlett Foundation. Nations such as China, France, South Korea, and Taiwan even have their own mass aggregators to varying degrees.

³ Peter Detkin, vice chairman and co-founder of Intellectual Ventures ironically coined this term when he was at Intel.

⁴ 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, 1577-78 (2009) (“The term NPE generally refers to a patentee that does not make products or “practice” its inventions.”); Jeremiah S. Helm, Comment, *Why Pharmaceutical Firms Support Patent Trolls: The Disparate Impact of eBay v. Mercexchange on Innovation*, 13 Mich. Telecomm. & Tech. L. Rev. 331, 333 (2006) (distinguishing between universities and patent trolls); Gerard N. Magliocca, *Blackberries and Barnyards: Patent Trolls and the Perils of Innovation*, 82 Notre Dame L. Rev. 1809, 1810 (2007) (“‘[P]atent troll’ . . . is a derogatory term for firms that use their patents to extract settlements rather than license or manufacture technology”); Mark A. Lemley, *Are Universities Patent Trolls?*, 18 Fordham Intell. Prop. Media & Ent. L.J. 611, 629-30 (2008) (distinguishing between universities as non-practicing entities and trolls); see also Jay P. Kesan, *Transferring Innovation*, 77 Fordham L. Rev. 2169, 2193 (2009).

⁵ See *supra* note 2 at 1810 (“Critics claim that these firms are little more than blackmailers who put a crippling tax on productive enterprises.”); McDonough, *supra* note 2, at 189-90; Lemley, *supra* note 2, at 613-14.

Moreover, the acquisition appetites and patent supply sources are quite interesting. Mass aggregators may have portfolios that range across vastly different areas of innovation from computers to telecommunications to biomedicine to nanotechnology.⁶ In some of the acquisition activity, mass aggregators purchase large chunks, and even the majority, of an operating company's patents and patent applications, typically paying cash up front, as well as a share of any future profits generated from asserting the patents against anyone other than the selling manufacture. Mass aggregators have engaged in other unusual acquisition approaches as well, including purportedly purchasing the rights to all future inventions by researchers at universities in developing countries. Other acquisition approaches purportedly include targeted purchases of patents that are of particular interest to their investors.

The types of returns promised to investors and the types of benefits offered to participants are also quite different from garden-variety non-practicing entities, as are some of the tactics used in organizing the entities and in asserting the patents. Finally, the scale itself is simply mind-boggling. Mass aggregators operate on a scale and at a level of sophistication and complexity that would have been unimaginable a decade ago. They have taken the prototype strategies pioneered by a prior generation of non-practicing entities and changed them into some of the cleverest strategies yet seen in the intellectual property rights field.

The goal of this article is to shed some light on mass aggregators. We hope to provide some understanding of the nature of the change, to analyze the economic and

⁶ Pharmaceuticals seems to be the one technical area generally excluded from mass aggregation, perhaps because the pharmaceutical innovation system has evolved to include lesser degrees of technical sharing.

implications, and to offer some normative considerations. For the descriptive section, we focus on the largest of the mass aggregators, Intellectual Ventures, which has gone to great lengths to maintain secrecy. Working from public sources and investing thousands of hours of research, we offer a detailed picture of the entity, tracing through approximately 1,300 shell companies and thousands of patents. The section also describes in brief form several other mass aggregators, including ones that are public companies.

For the analytic section, we examine the potential implications of mass aggregators for the patent system specifically, for innovation in general, and for the economy as a whole. We look at the potential positive effects that mass aggregators might bring including facilitating appropriate rewards for forgotten inventors, creating a market to connect innovators with those who can manufacture their inventions, and most important, operating as a form of insurance – something akin to an Anti-Troll defense fund.

On the other side, we look at the potential economic dangers of mass aggregators and the market for patent monetization that is created. Given the imperfections of the patent system and the odd characteristics of the product created by the market for patent monetization, mass aggregators may serve as a tax on current production that reduces future innovation. Characteristics of the market may also provide opportunities for anticompetitive behavior.

Finally, we offer a few preliminary normative observations on whether and to what extent the sovereign, in the form of various governmental bodies, should become

involved in the changes that are taking place at the market level. The section also considers broadly the types of changes that would have to occur if such participation is going to take place in a meaningful and least disruptive fashion.

I. Facts

Over the last five years, information about mass aggregators has slowly filtered out into the patent community. Initial information was fueled largely by speculation as well as quiet, oblique comments from those bound by confidentiality agreements or concerned about incurring the wrath of the aggregators. As a reporter trying to write about one of the mass aggregators noted as recently as July 2011,

[W]e called people who had licensing arrangements with [Intellectual Ventures], we called people who were defendants in lawsuits involving [Intellectual Ventures] patents, we called every single company being sued by Oasis Research. No one would talk to us.⁷

We encountered similar reticence when we first began trying to understand the structure and activities of aggregators. “You can’t find out anything about them; don’t even try,” is a chant that has been whispered in intellectual property circles for a number of years. It motivated us to take a hard look, and the information eventually unraveled like the yarn from an old sweater.

⁷ See, Alex Blumberg & Laura Sydell, *When Patents Attack*, National Public Radio’s This American Life, July 22, 2011, transcript available at <http://www.npr.org/blogs/money/2011/07/25/138576167/when-patents-attack> (noting that the reluctance was fueled in part by fear and in part by Intellectual Ventures’ nondisclosure agreement, rumored to be the strictest in Silicon Valley).

A literature search on Intellectual Ventures reveals many opinions about the company but few independent facts. We have aimed to fill that void by tracing the intellectual property assets that the company appears to own, identifying the sources of those assets, and describing the company's activities. The data we provide here is the result of four years of painstaking research, piecing together bits of information available from public sources.

For the descriptive section of this piece, we will focus primarily on the entity that is by far the largest, oldest, and most secretive of the mass aggregators, Intellectual Ventures. This entity is also useful as a focal point, given some of the interesting connections and interactions it has with other aggregators.

A. Intellectual Ventures

Much about Intellectual Ventures is shrouded in secrecy. Intellectual Ventures has acknowledged it intentionally withholds the true scope and nature of its IP portfolio.⁸ Its licensing transactions and interactions are protected by strict nondisclosure agreements, and the structure of its business activities makes it difficult to get a handle on the full extent of its activities. For example, our research has identified more than a thousand

⁸ See Victoria Slind-Flor, *The Goodfellas: Detkn and Myhrvold on Patents, Trolls & Intellectual Ventures*, 19 INTELLECTUAL ASSET MANAGEMENT 28, 34 [Hereinafter IAM] (noting that Intellectual Ventures will not reveal how many patents it has or the entities to which it has licensed technology and citing Myhrvold's response that "We're a private company. We don't disclose our investment plans any more than Warren Buffet does."); see also, Steve Lohr, *Turning Patents into 'Invention Capital'*, NEW YORK TIMES (Feb. 17, 2010) (citing Myhrvold's comment that Intellectual Venture's penchant for secrecy is a legacy from its startup days when it did not want to tip its hand).

shell companies that Intellectual Ventures has used to conduct its intellectual property acquisitions, and it has taken considerable effort to identify these. The range and scope of its activities are so vast that it is difficult to conceptualize the reach of Intellectual Ventures.

Intellectual Ventures was founded in 2000 by Nathan Myhrvold and Edward Jung, both of whom formerly served in high-level positions at Microsoft.⁹ Peter Detkin also played a key management role in developing Intellectual Ventures.¹⁰ In one of patent law's great ironies, Detkin was the person who originally coined the derogatory term "patent troll" during his tenure as the chief intellectual property officer at Intel.¹¹

Although operations began in 2000, Intellectual Ventures does not appear to have begun its massive patent acquisitions in earnest until somewhere around 2004 or 2005, when the annual number of acquisitions transaction we could identify rose from a handful to several hundred.

According to Intellectual Ventures, invention *per se* is its product, and both Myhrvold and Detkin have referred to the company's business model as "Invention

⁹ According to the Washington Secretary of State's Office, Intellectual Ventures LLC was formed on September 21, 1999. Corporations Division – Registration Data Search, Washington Secretary of State, http://www.sos.wa.gov/corps/search_detail.aspx?ubi=601981783 (October 2, 2011). Nathan Myhrvold formerly served as Microsoft's chief technology officer and Jung served as Microsoft's chief architect. Our Team, Intellectual Ventures, <http://intellectualventures.com/WhoWeAre/OurTeam.aspx> (October 2, 2011).

¹⁰ Detkin joined IV in 2002. See Peter N. Detkin, Leveling the Patent Playing Field, 6 J. MARSHALL REV. INTELL. PROP. L. 636 (2007), available at <http://www.jmripl.com/Publications/Vol6/Issue4/Detkin.pdf>.

¹¹ Brenda Sandburg, *You May Not Have a Choice. Trolling for Dollars*, The Recorder (July 30, 2001).

Capitalism.” They define Invention Capitalism as applying concepts from venture capital and private equity to develop and commercially exploit new inventions.¹²

Although Intellectual Ventures is designed to make money from trading in patent rights, the founders describe their activities as ones that will incentivize research and development in all technical subjects. Myhrvold, for example, has been quoted as saying the following:

Most of people think of research as a charity, a philanthropic thing. They don't view it as a for-profit venture. So our goal is to make research something you can invest in. I think it's a valuable investment if you know what you're doing. So we think that if we supply capital and expertise in the right way then we can make a hell of an investment and if we are successful at doing it, the net research budget will go up.¹³

The range and scope of Intellectual Ventures' activities are so vast that it is difficult to contemplate the reach of the company. It has invested in innovations and technologies across a broad spectrum of industries – everything from computer hardware to biomedicine to consumer electronics to nanotechnology. In more than 1,000 transactions, by our count, the company has acquired inventions and related intellectual property from individual inventors, corporations of all sizes, governments, research laboratories, and universities.

¹² See, Steve Lohr, *supra* note 8 (citing Nathan Myhrvold); Peter N. Detkin, Leveling the Patent Playing Field, 6 J. MARSHALL REV. INTELL. PROP. L. 636 (2007), available at <http://www.jmripl.com/Publications/Vol6/Issue4/Detkin.pdf>; Nathan Myhrvold, *The Big Idea: Funding Eureka*, HARVARD BUSINESS REVIEW (March 2010) (excerpt available at <http://hbr.org/2010/03/the-big-idea-funding-eureka/ar/1>)

¹³ Comments made during Myhrvold's speech at the Churchill Club, Palo Alto, Calif., Feb. 27, 2007.

Getting a handle on the scope and activities of an entity as secretive as Intellectual Ventures is not easy.¹⁴ We have tried to create a picture of the company by piecing together information from publicly available sources. Such sources included the patent assignment records of the United States Patent and Trademark Office (USPTO); the USPTO's PAIR database,¹⁵ which includes the file histories of patents; the USPTO's patent and application database, government records for key states, including Delaware, Nevada, Washington, and California; Internal Revenue Service Filings for non-profit entities; Securities and Exchange Commission data from 10Q and 10K filings by corporations; the Federal Register; filings made in dozens of litigations; and press releases and other publications from various entities.

The structure of the Intellectual Ventures network of operations makes it tremendously difficult to detect and trace the company's activities. For example, Intellectual Ventures has acknowledged that it uses shell companies for purchasing and holding patents, although it has not publicly identified the number of shells or their names.¹⁶ In 2006, one magazine identified 50 shell companies that it believed were being operated by Intellectual Ventures. Our research has pieced together 1,276 shell companies associated with Intellectual Ventures. We do not believe that we have identified all of the Intellectual Ventures shell companies, but these 1,276 companies

¹⁴ Credit for this exhaustive research goes to co-author Tom Ewing.

¹⁵ PAIR stands for Patent Application Information Retrieval.

¹⁶ See IAM, *supra* note 8, at 32 (quoting Peter Detkin as acknowledging that Intellectual Ventures uses shells for acquisitions and arguing that all companies do this to keep potential liabilities of the acquired company from affecting the whole organization).

alone hold roughly 8,000 United States patents and 3,000 pending United States patent applications as of May 2011.¹⁷

We also note that even with some knowledge of the shell companies, tracking the Intellectual Ventures portfolio is further complicated by the fact that Intellectual Ventures has at times neglected to record its ownership for long periods of time. In some cases, for example, we found parties indicating that they had sold or licensed patents to Intellectual Ventures – even to the point of identifying the intellectual property with great particularity – but we could not locate a corresponding assignment in the USPTO database.¹⁸

Although Intellectual Ventures has never divulged the precise nature and extent of its portfolio, the company has reported that it holds some 35,000 “invention assets.”¹⁹ The company does not define the term, but we assume that this phrase refers not only to patents but also to patent applications, non-filed invention disclosures,²⁰ design patents, trademarks, and any trade secrets owned or licensed by the company. Further confusing the issue is whether the company counts as “invention assets” patents or only patent

¹⁷ We note that at least 175 of the patents acquired by IV have reached the end of their terms and expired. Likewise, many more of the patents will expire in just a few years. We have not checked patent maintenance fee payment information to determine if any of the other patents have expired due to failure to make maintenance fee payments. In any event, the “active” U.S. portfolio is likely a bit smaller than suggested by the numbers above.

¹⁸ In one case, IV opted not to record a change of ownership for some 2,506 days following execution; *see*, assignment record for US Publication No. 20090254972 for an assignment executed on Aug. 9, 2002 but not recorded until June 19, 2009; enter “20090254972” in the publication number field at <http://assignments.uspto.gov/assignments/?db=pat>.

¹⁹ Press Release: BlueCat Networks Signs Patent Agreement With Intellectual Ventures, http://intellectualventures.com/newsroom/pressreleases/11-06-28/BlueCat_Networks_Signs_Patent_Agreement_With_Intellectual_Ventures.aspx (last visited, Oct. 5, 2011).

²⁰ The company has claimed to have some 3,000 unfiled invention disclosures. *See*, Tom Ewing, Inside the world of public auctions, Intellectual Asset Management July/August 2010, 67.

families. The company also is not clear about where these assets exist, but we assume that this number represents the company's worldwide portfolio. If the 35,000 number were to represent the company's United States portfolio alone, Intellectual Ventures would hold a portfolio larger than IBM's United States portfolio, which is generally acknowledged as the largest domestic portfolio.

To give a fuller picture of precisely what Intellectual Ventures owns, we assembled as much information as possible from public sources on the company's holdings that are actually patents. To summarize the information below, we estimate that Intellectual Ventures has a worldwide portfolio of 30,000-60,000 patents and applications as of May 2011. This would mean that in just a few short years, Intellectual Ventures has acquired at least the 5th largest patent portfolio among domestic United States companies and approximately the 15th largest patent portfolio worldwide.²¹

A. Patents and Applications Held by Intellectual Ventures

With a great deal of digging, we were able to locate 1,276 shell companies and related entities that appear to be associated with Intellectual Ventures. These companies hold approximately 8,000 United States patents and 3,000 pending United States patent applications. We do not believe that we have found all of the shell companies.²²

Nevertheless, we believe we can calculate a reasonable approximation of Intellectual

²¹ Patent holdings are difficult to compare and rank because, among other things, to be completely accurate, one must account for patents expired on the basis of age and/or failure to pay annuity/maintenance fees.

²² As noted elsewhere, we have found approximately 100 other companies registered in Delaware that appear to be shell companies but do not presently hold patents. We will continue to monitor these companies.

Ventures' patent holdings. The overall size of Intellectual Venture's portfolio can be estimated in several ways based on the information that we have obtained. The estimate below comes from what we have learned about these 1,276 shell companies.²³

We begin by using information about Intellectual Venture's shell companies. First, we have identified some 50 shells that appear to serve a management function, one shell that serves a trademark function, a dozen or so that serve investment functions. Of the remaining 1,200 companies, 954 companies have patents recorded against their names, and some 242 shells do not have patents recorded against their names, although some of them clearly hold licensed-in patent rights.

We have noticed that Intellectual Ventures has a pattern of establishing a shell to receive assets well before the transaction related to those assets has been completed. Thus, we suspect that at least some of the 242 companies without patents recorded against their names are awaiting allocation of assets from a patent-related transaction. We suspect that others have already experienced a patent-related transaction, but that the transaction has yet to surface in the public record. For example, if Intellectual Ventures receives an

²³ The size of Intellectual Ventures' portfolio can also be estimated based upon how much the company has spent acquiring this portfolio and how much they have spent per patent. As an arbitrage buyer, one could assume that Intellectual Ventures spends roughly the same amount per patent in all of its purchases. Myhrvold reported that Intellectual Ventures had spent \$1.163 billion acquiring patents by May 2009. (Nigel Page, *IV Shifts Gear*, *IAM Magazine* (July/Aug. 2009), 10.) In a study of Ocean Tomo patent auctions, we concluded that Intellectual Ventures had spent a little more than \$61 million acquiring 410 US patents and their foreign counterparts at an average cost of \$148,966 per US patent obtained. (Tom Ewing, *Publicly Auctioned Patent Buyers*, 34 (Avancept, 2010).) Some published reports have said that Intellectual Ventures pays only \$40,000 per patent. (*Op. cit.*, Page at 13.) Application of this information combined with additional information about the growth of Intellectual Ventures' portfolio since May 2009 leads to an estimated US portfolio of 10,149 US patents and 27,649 foreign patents by May 2011 along with several thousand pending applications worldwide. This second estimate fits well with the estimate based upon analysis of patent-holding shell companies.

exclusive license to a patent, the effect would be similar to owning the patent outright, but the parties would not necessarily record a change of patent ownership with the USPTO, especially if the recipient of the exclusive license believed it highly unlikely that the registered patent owner would resell the patent to someone else.

The 954 shell companies that have patents recorded against their names have an average of 8.5 patents and 3.2 patent applications per company. Assuming that the other 242 shell companies contain unrecorded transactions, and applying these averages would yield another 2,057 patents and 774 applications. Adding these missing patents and applications to our totals would yield roughly 10,000 patents and 3,700 applications.²⁴

Intellectual Ventures also claims that it files roughly 500 applications per year and that it is now one of the top 50 US patent filers. The company is somewhat vague as to whether these 500 applications comprise just those from its invention sessions or whether further filings²⁵ from purchased portfolios are included in this total. In any event, given that patent applications publish 18 months after filing, there should be roughly 750 presently unpublished patent applications as of May 2011.²⁶ Including unpublished applications keeps our estimate of United States patents at 10,000 but the number of applications rises to roughly 4,400.

The actual portfolio may be substantially smaller or larger than this estimate suggests. For example, if Intellectual Ventures has been more prompt about recording

²⁴ This estimate does include certain recently acquired portfolios or apparently allied ones.

²⁵ *E.g.*, continuation applications and reissue applications.

²⁶ The earliest that an application filed in December 2010 would publish is June 2011 – and only if the application had a foreign counterpart – otherwise, the application will typically remain secret until it issues as a patent.

assignments than appears to be the case, then the portfolio may be smaller. Conversely, if Intellectual Ventures has significantly more shell companies than we have found, then the portfolio may be substantially larger than our estimate.

Despite having uncovered more than 1,200 shell companies, we have little doubt that other shell companies have been formed. Exclusive licenses granted to Intellectual Ventures represent the greatest source of unknown patents since these agreements may not necessarily be recorded against the patents to which they pertain. For example, we are aware of transactions involving the University of Rhode Island and Campinas State University in Brazil, but we have no idea what shell company was involved. The University of California, San Diego has reported agreements with five shell companies but the patents involved in the licensing arrangement have not been recorded.²⁷ Similarly, the US Navy publicly disclosed the licensing of patents to two shell companies, but these licenses have not been recorded.²⁸

In terms of the non-US portion of the portfolio, we note that approximately half of Intellectual Ventures' United States portfolio originated with non-US entities. Many of these came from European entities, where intellectual property seems to be particularly undervalued in relation to United States intellectual property. This suggests that Intellectual Ventures may be acting as an arbitrageur to exploit the disparities in intellectual property valuation between the United States and the rest of the world. Finally, in contemplating the size of the company's foreign patents, we note that a

²⁷ These companies are Eilean Technologies, Jacksonville Timucuan, Discovery Advance, Bettles Gates, and 10Spot.

²⁸ These companies are Bixenta Ventures and NanoComm Systems.

sizeable portion of the company's portfolio is fairly young, and as a general matter, younger portfolios are prosecuted more vigorously in international jurisdictions than has historically been the case for older portfolios.

These factors strongly suggest that a typical US patent in the Intellectual Ventures' portfolio has at least one foreign counterpart. Given that the world has more than 150 patent-granting countries, the global scope of any patent portfolio can jump tremendously when the foreign counterparts are considered.²⁹ Not all patents have a foreign counterpart, however, and most patents do not have foreign counterparts in more than a handful of countries.

We did not search foreign corporate records, but it is possible that one could find more Intellectual Ventures patents that way -- not just foreign patents held by Intellectual Ventures but also United States patents held by the company. For example, we happened upon two examples of this in finding a set of United States patents that Intellectual Ventures obtained from two foreign companies, only because the transactions with the shell companies were mentioned in documents published by the foreign company that we discovered during our research.³⁰

Based on the information above, we assume that the typical Intellectual Ventures US patent has also been filed in two to four foreign jurisdictions as well. Extrapolating

²⁹ Additionally, some patent owners continue to count provisional applications and PCT applications as being part of their portfolios long after these applications have expired. Similarly, some patent owners double count their EPO patents by counting the EPO-published patent applications while also counting the applications' counterpart issued patents throughout Europe. Finally, many patent owners do not distinguish patents granted by examination systems from patents granted by registration systems, which causes further confusion. In short, it is easy to inflate the numbers of a patent portfolio once international filing occurs. Discussing "patent families" helps somewhat, although there are also ways making a portfolio appear to have more families than it has in actuality.

³⁰ The two foreign companies noted here were Campinas and Torino Wireless.

only from the United States patents, and not taking into account any patents Intellectual Venture may have acquired that were filed only in foreign jurisdictions, the worldwide portfolio would be roughly 20,000-40,000 patents³¹ and 9,000-18,000 applications, by May 2011. Thus, adding the estimated number of patents and patent applications together would suggest a portfolio that ranges from approximately 29,000 to 58,000 patents and applications worldwide. This range is, of course, an estimate, although a reasonably conservative one. Nevertheless, even these figures would place Intellectual Ventures among the 5th largest patent portfolio holders in the United States and among the 15th largest patent portfolio holders worldwide.

B. Origins of the Portfolio

We were able to find evidence that Intellectual Ventures has engaged in more than 1,000 acquisition transactions. Through these transactions, the company has acquired inventions and related intellectual property from individual inventors, corporations of all sizes, governments, research laboratories, and universities.³²

Intellectual Ventures states that its portfolio has been built through transactions variously classified as “strategic acquisitions,” “targeted acquisitions,” and “in-bound market-driven” opportunities. We suspect that some of the larger transactions also arise

³¹ This “worldwide” estimate includes the US patents.

³² Intellectual Ventures often gives the impression that much of its portfolio has been built by acquiring one or two patents from small inventors. In reviewing the transactions that we know about, we have found the following first-level sellers: Small and Medium Enterprises, 36.5%; Individual inventors: 25.7%; Large Companies: 15.8%; Consultants and brokerages: 14.3%; Universities: 5.3%; and Governments: 2.4%. The largest transactions in terms of number of patents involved have come from large companies and governments.

in conjunction with an investment in Intellectual Ventures by the party supplying the patents. The targeted acquisitions are purposeful acquisitions based on either rounding out or completing a portion of IV's portfolio or a targeted growth area for the future.

i. Acquisitions through university transactions

The transactions with universities are particularly interesting, not necessarily as a percentage of the company's portfolio, but as offering insight into Intellectual Ventures' vision and potential effects on innovation. The company has announced that it has relationships with some 400 universities, although it has not identified all the institutions involved.³³ These relationships are not necessarily public because they may involve patents whose ownership remains with the university. For example, the company may simply receive an exclusive license to commercialize the intellectual property involved, which would not necessarily appear as a recorded transfer of ownership. Nevertheless, we were able to find nearly 50 universities that appear to have signed deals with Intellectual Ventures, which we have listed at Appendix A. Some deals may involve sale or licensing of a few patents; some may involve investment by the university in Intellectual Ventures, and some deals may involve wholesale assignment of future innovation.

We did find one fascinating example of the wholesale assignment of innovation with an institution in a developing nation and have heard that this may represent a pattern. Specifically, we found a summary of an agreement with Brazil's Campinas University, one of that country's largest academic institutions. In that agreement, Intellectual

³³ Worldwide, Intellectual Ventures, <http://intellectualventures.com/WhoWeAre/Worldwide.aspx> (October 2, 2011)

Ventures appears to have secured the rights to file Patent Cooperation Treaty (PCT) patent applications for inventions developed at the university. In other words, the university may file domestic patent applications in its own country, and then Intellectual Ventures has the right to file PCT applications and secure worldwide rights to the inventions. The agreement appears to provide some revenue-share potential with the university as the result of Intellectual Ventures' commercialization, although we were not able to determine the specific terms and conditions.

We have been told that similar deals exist with universities in other developing countries. It is certainly a forward-looking approach towards gathering rights to future innovation, but it is one that could backfire on the company. Suppose, for example, that some individuals at academic institutions were eventually unhappy with the deal that was cut and responded by creating very little that would fall within the terms of the agreement for the period of the agreement or simply devoted their efforts to non-patentable activities such as teaching. That would be a bad result on all levels, for the academic institution, for Intellectual Ventures, and for innovation as a whole.

ii. Acquisition through portfolio assumption

Another source of patents for Intellectual Ventures comes from offering a turnkey licensing service for small-to-medium enterprises. Consider, for example, the deal that Intellectual Ventures completed with the Digimarc Corporation in 2010. According to

Digimarc's SEC filings, the company has granted Intellectual Ventures an exclusive license with the right to sublicense almost all of Digimarc's patents.³⁴

The broad terms of Digimarc's deal with IV are as follows:

- a license issue fee of \$36 million, paid in increasing quarterly installments over three years;
- 20% of the profits generated from the IV's licensing program, less expenses that include the license issue fee above;
- IV assumes responsibility for approximately \$1 million per year in prosecution and maintenance costs previously borne by Digimarc for the licensed patents;
- a minimum of \$4 million of paid support over five years from Digimarc to assist IV in licensing-related efforts; and
- a royalty-free grant-back license to the licensed patents to continue Digimarc's existing business related to those assets.

Thus, Intellectual Ventures buys the rights to most of Digimarc's patents, assumes the costs of maintaining the portfolio and gains the right to go after other companies.

Digimarc gets a cash payment plus a percentage of income earned when Intellectual Ventures goes after other companies with the portfolio. Digimarc also retains a license to use the patents, as long as that relates to its existing business.

³⁴ The deal includes 597 patents and 288 patent applications owned by Digimarc. The company has retained 4 patents and 128 patent applications, as well as 26 patents and 26 patent applications for which it holds rights with third parties.

C. Funding Sources

To finance its acquisitions and operations, Intellectual Ventures has raised at least \$5 billion, according to published reports.³⁵ The company's initial funding seems to have come from operating companies such as Microsoft, Intel, Sony, Nokia, Apple, Google, and eBay. Subsequent funding sources include financial investors, comprised heavily of institutional endowments and wealthy individuals. These include the William and Flora Hewlett Foundation, the University of Pennsylvania, the University of Notre Dame, Grinnell College, and Charles River Ventures. The Bill and Melinda Gates Foundation has asked Intellectual Ventures to perform some contract research related to antimalarial devices; as far as we can tell, this is the only physical product made by the company, apart from some prototype work in a nuclear reactor co-invented by Myhrvold.³⁶

IV's investments are distributed among more than five funds, and the investors have not necessarily invested in each fund or in each fund equally.³⁷ In litigation against Xilinx in May 2011, Intellectual Ventures was forced to disclose the investors for four of its funds. In addition to the initial funding group mentioned above, investors included

³⁵ *Who We Are*, Intellectual Ventures, <http://intellectualventures.com/WhoWeAre.aspx>; Defendants' Certificate of Interested Entities or Persons Pursuant to Civil Local Rule 3-16 and FRCP 7.1, Xilinx, Inc. v. Invention Investment Fund I LP, 11-cv-0671-SI (N.D. Cal. May 16, 2011).

³⁶ Terrapower: The Need for Innovation in Energy, Intellectual Ventures, <http://intellectualventures.com/OurInventions/TerraPower.aspx> (October 2, 2011); John Letzing, Myhrvold's Patent Firm Sees Revenue Swell, MarketWatch, <http://www.marketwatch.com/story/myhrvolds-patent-firm-sees-revenue-swell-2011-03-04> (October 2, 2011).

³⁷ These funds include: the Invention Science Fund I LLC; the Invention Science Inventors Fund I, LLC; Invention Science Management Fund I, LLC; the Invention Development Fund I LLC; the Invention Investment Fund I LP, the Invention Investment Fund II LLC, the Intellectual Ventures Fund I, and the Intellectual Ventures Fund II.

Amazon.com, American Express, Adobe, Cisco, Verizon, and Yahoo!, as well as Xilinx itself.³⁸

According to Myhrvold, the funds raised by Intellectual Ventures are in the form of capital commitments that the company can use over a certain time period. The company claims that it has been structured to operate in a manner resembling that of venture capital and private equity funds. Thus, the company strives to receive approximately a 2% management fee plus 20% on the carried interest,³⁹ although actual terms from may vary significantly from fund to fund and acquisition to acquisition.

D. Return on Investment

One of the most interesting questions, and one that is difficult to generalize, is what do investors get in return? The investors vary tremendously, as do the types of deals they are likely to have made. Some investors appear to be interested both in financial returns and in access to Intellectual Ventures' vast pool of patents.⁴⁰ As Vincent Pluvillage, Intellectual Ventures' former head of acquisitions once explained, for investors that are technology companies, Intellectual Ventures can provide a defensive function in the form of access to patent licenses.⁴¹ Pluvillage has stated, in fact, that some

³⁸ The full list of investors in the four funds is listed at Appendix B.

³⁹ Nigel Page, *IV Shifts Gear*, 36 Intellectual Asset Magazine 9, 10 (July/August 2009).

⁴⁰ For example, Verizon paid \$350 million for patent licenses and an equity stake in one of IV's investment funds in July 2008, according to published reports. Intuit similarly struck a \$120 million deal with IV in early 2009.

⁴¹ For a description of using patents as bargaining chips in infringement litigation, see *infra*, text accompanying note 169.

technology company investors have indicated specific technology areas where they would like IV to acquire patent rights in order to obtain license rights.⁴²

Another category of investors, however, would have little interest in access to patents. For example, one would not expect the William and Flora Hewlett Foundation or the World Bank to be particularly interested in patent licenses. In fact, Pluvinage confirmed that the company has some purely financial investors, and financial investors typically have no need for patent licenses. Pluvinage believes that the financial investors have chosen Intellectual Ventures and the general category of intellectual property as an investment because it's believed to be uncorrelated to other investment classes.

For investors who get access to the patent pool, that access provides something far more sophisticated and complex than the patent licenses that would be necessary to produce a product.⁴³ Consider the story of Verizon, which paid \$350 million for patent licenses and an equity stake in one of the Intellectual Ventures Funds in 2008. TiVo sued Verizon for infringement.⁴⁴ Verizon purchased a patent from one of Intellectual Ventures' shell companies, which was then put to work as a counterclaim in the TiVo suit⁴⁵ in a program that Intellectual Ventures calls "IP for Defense."⁴⁶

⁴² See Nigel Page, *IV Shifts Gear*, 36 INTELLECTUAL ASSET MANAGEMENT 9, 11 (Investors invest in IV because "it's uncorrelated and long term." For those that want to invest strategically, IV offers a "defensive function." Investors in IV can tell IV which "technology domain they want access to.") .

⁴³ We do not know if Intellectual Ventures' licenses are perpetual or require recurring royalty payments.

⁴⁴ Tivo filed suit against Verizon on August 26, 2009. *TiVo Inc., v. Verizon Communications, Inc., et al.*, 2010 U.S. Dist. LEXIS 112320 (Sept. 17, 2010).

⁴⁵ The Intellectual Ventures shell was originally named Aerosound LLC before a recordation of its name change was made with the USPTO on Feb. 17, 2010; see, Assignment History provided by USPTO at <http://assignments.uspto.gov/assignments/?db=pat> (search in "patent number" field for U.S. Patent No. "5410344."). It is uncertain precisely when Verizon bought this patent, as the transaction has not been recorded at the USPTO; however, the counterclaim was added on February 24, 2010, and Verizon asserts

One can see a similar progression with Vlingo. Nuance Communications sued Vlingo for infringement. At the time of the lawsuit, Vlingo's portfolio contained mostly pending applications.⁴⁷ With this type of portfolio, a company would have nothing available for countersuit. Vlingo didn't buy just one patent, as Verizon did, it bought seven patents from Intellectual Ventures and used five of them to sue Nuance. Thus, with both Vlingo and Verizon, the company was able to purchase the patents needed for leverage in an infringement litigation, just at the time it was needed.⁴⁸

Such transactions would be even more interesting if the arrangements allowed the purchaser to sell the patent back to the aggregator at the conclusion of the litigation.⁴⁹ This would resemble a leasing program, or perhaps a form of a patent library, in which those who invest in mass aggregators could obtain just the right patent needed at just the right moment, returning the patent when the need has passed. The purchaser might even be able to make a profit on the transaction, given that a litigation-tested patent is presumably more valuable than an untested patent.

that all rights in the '344 patent have been acquired by a wholly owned subsidiary named Services Corp. See, Defendant's Answer to First Amended Complaint and Counterclaims at 15, *Tivo, Inc. v. Verizon Communication, Inc. et al.*, 2:09-cv-257-DF (ED Tex, 2009); see also, the USPTO assignment database that shows no patents assigned to "Services Corp.;" <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field for "Services Corp").

⁴⁶ See, "Value-Added Solutions & Services," Intellectual Ventures website, <http://www.intven.com/ProductsServices/ValueAddedProducts.aspx> (website visited Oct. 5, 2011).

⁴⁷ Vlingo also had 2 purchased patents, one from RPX and one from Nuance.

⁴⁸ Intellectual Ventures Moblcomm 1 LLC sold US Patent No. 5,680,388 to Apple, Inc. on March 7, 2011. The patent was originally owned by mobile telephony pioneer TeliaSonera. The patent, entitled "Method and Arrangement for Dynamic Allocation of Multiple Carrier-Wave Channels for Multiple Access by Frequency Division of Multiplexing" pertains to a level of telecommunications infrastructure not likely to have emerged from Apple's own organic R&D programs. The patent does not yet appear to be involved in the emerging smartphone patent wars. See, the Assignment Record for US Patent No. 5,680,388; enter "5680388" in the "patent field" at <http://assignments.uspto.gov/assignments/?db=pat>.

⁴⁹ One Intellectual Ventures executive told one of the authors that the option to re-purchase was a deal term of the Verizon deal, but we have not been able to independently verify this.

Access to a vast patent pool could be enormously valuable to a technology company, but one must be careful of the hand that feeds. When infringement litigation broke out between Intellectual Ventures and Xilinx in 2011, it was interesting to note that Xilinx itself is listed as an Intellectual Ventures investor.

Xilinx had filed a declaratory judgment suit against Intellectual Ventures after Intellectual Ventures sued three of Xilinx' competitors. One cannot help but wonder what might have transpired between Intellectual Ventures and its investors that led the parties to litigation under these circumstances. No information is available, but one could imagine that the following might have happened. Perhaps Xilinx's agreement with Intellectual Ventures includes that Xilinx purchases both an interest in the Intellectual Ventures investment fund and a license to use some of Intellectual Venture's patents on a true-up basis. If the license royalty is based on sales data from Xilinx, and Intellectual Ventures across time began to doubt that Xilinx was properly reporting its data or to dispute that data, one could see the infringement suits against Xilinx's competitors as serving a dual purpose. The suits have the potential to both bring in settlement money from Xilinx's competitors and to send a message to Xilinx that Intellectual Ventures has confidence in its patents and is serious about its demands. Under that scenario, the Xilinx suit, in which Xilinx asks the court to declare the Intellectual Ventures' patent either invalid or not infringed by Xilinx, coupled with a Xilinx discovery request that has the effect of publicly revealing a list of the Intellectual Ventures investors, can be seen as Xilinx's cannon shot reply.

i. Capital Returns

One of the most striking figures to contemplate is the amount of revenue Intellectual Ventures will need to generate, if it is going to operate successfully in the venture capital model it has selected for itself, paying acceptable profits to its investors as well as its principals. In particular, Intellectual Ventures defines itself in comparison to venture capital and private equity firms. Venture Capital firms typically must provide profits to their investors that substantially exceed those of other investments in order to be considered successful. Venture capital funds tend to be extremely illiquid, with lifetimes of approximately 7-10 years during which the investor's capital is often unavailable. This illiquidity is one justification for higher expected returns than the returns from more liquid investments.

None of Intellectual Ventures' network of companies is public, and Intellectual Ventures has not precisely distinguished publicly which part of its corporate network is the "VC firm/fund" part and which part is the "VC investment" part. The typical venture capital company invests in unrelated businesses whose origin does not trace back through to the general partners who created the investment fund. In the absence of an explanation, we will assume that the VC fund part comprises shell companies like the Invention Investment Fund I LP, and the VC investment part comprises patent-owning shell companies like Ferrara Ethereal LLC. We are also uncertain if any restrictions have been placed on the ability of the limited partners (the investors) in the VC fund portion to sell their shares to third parties. In the absence of being listed on a public exchange, even if these shares can be sold, they are less liquid than shares in public companies and may possibly have additional restrictions that render them even more illiquid.

Myhrvold, Detkin, and other Intellectual Ventures executives have repeatedly described the company as a venture capital or private equity company operating in the intellectual property rights space. Given the comparison that Intellectual Ventures has chosen for itself, combined with the well-heeled investors the company has drawn, and in consideration of the other investments these investors could have made instead, one could presume that the institutional investors assumed that Intellectual Ventures intends to pay them profits at least comparable to those of a successful venture capital or private equity firm. Some of the institutional investors may also have been intrigued with intellectual property rights as an asset class in a diversified portfolio.

The minimum return, given the risk and illiquidity that investors in venture capital or private equity firms expect in the United States is approximately 20%, especially in the era preceding the financial crisis when many of Intellectual Ventures' funds were raised. In Intellectual Ventures' case, this may well be a very conservative number. Investors often look for comparable investments in determining risk. Acacia Research Corp., a public patent rights licensing company and therefore more liquid than a typical VC investment, probably provides the closest comparable to an investment in Intellectual Ventures. During the 2002-2007 time period, when many of Intellectual Ventures' funds were likely being raised, Acacia's shares grew more than 30% per year on average without any consideration of dividends paid by Acacia which would also be part of its value growth. Over the 2002-2011 time period, Acacia's shares grew by even more. All things being equal, one might expect that a rational investor would choose to make a more liquid and less risky investment in Acacia's stock, than an illiquid and riskier investment in Intellectual Ventures – unless Intellectual Ventures had the promise of

substantially greater returns. Nevertheless, we will use a conservative 20% return for our calculations of Intellectual Ventures' minimum expected return to investors. Intellectual Ventures has said that of the money it makes from the investors' capital, it intends to keep 20% of the profit for itself as carried interest and that it will also charge a 1-2% management fee calculated as a percentage of capital raised. We will use the figure 1.5% as an average management fee for simplicity. Therefore, the total expected minimum revenue needed to generate anticipated profits for the investors and Intellectual Ventures as well as paying the management fees would need to be a little over 25% per year.

Although the length of investment is an unknown parameter, assume a 10-year investment lifetime, which is not uncommon in the venture capital world.⁵⁰ Combining these parameters with \$5 billion in investment would yield a lifetime revenue expectation for all the funds of roughly \$40 billion– to be considered a minimally successful investment. This calculation assumes that investors receive the profits at the end of the fund's lifetime. If one assumes that the funds have lifetimes longer than 10 years, then the revenue expectations grow substantially larger. If, for example, Intellectual Ventures has pegged the revenue expectations at the 20-year lifetime of a patent, the lifetime expectation for the funds jumps to a minimum of \$244 billion in order to generate the expected profits and cover management fees and capital costs.

⁵⁰ Venture capital firms generally require long-term investments in which the investor does not expect returns for 7-10 years. National Venture Capital Association, *FAQ*, (October 1, 2011) http://www.nvca.org/index.php?Itemid=147&id=119&option=com_content&view=article. There is a 20% minimum venture capital fund return. See, Basil Peters, *Exit Strategies for Angel Investors*, slide 19 Northwest Energy Angeles, Sept. 11, 2009.

These calculations assume that all of Intellectual Ventures' \$5 billion in investment commitments have actually been received and invested by the company. Intellectual Ventures has been somewhat coy about how much of the \$5 billion it has actually received. If it receives just \$1.5 billion from investors (a mere 30% of the reported commitments), then the 10-year revenue expectations still amount to \$12 billion,⁵¹ an amount comparable to the amount that IBM will receive from intellectual property rights royalties over the same time period.⁵²

E. Collecting Revenue: Privateering & Other Exploits

Intellectual Ventures claims to have collected approximately \$2 billion in licensing fees so far, based on the company's disclosures and recent licensing deals.⁵³ Most large-scale IP licensing today exists only among very large technology companies, and this is consistent with Intellectual Ventures' licensing efforts at this point. Myhrvold, however, told the Wall Street Journal in 2008, that the company ultimately plans to sign up hundreds or even thousands of companies as patent licensees.

Intellectual Ventures has recently begun describing its services as bridging "the invention gap." So, in a delightful metaphorical twist, the ugly troll under the bridge now works to help the goats over the stream (although the goats presumably still tender a cash award to the helpful troll).

⁵¹ The \$1.5 billion figure over a 20-year period would presumably be expected to generate \$153 billion.

⁵² As a comparison, Intellectual Ventures has fewer than 800 employees; IBM has 427,000 employees.

⁵³ Intellectual Ventures' Licensing Overview Data Sheet for July of 2011 indicates they have collected \$2 billion in licensing revenue. Intellectual Ventures, Global Licensing Overview, (Oct. 1, 2011), *available at* http://www.intellectualventures.com/Libraries/General/Licensing_Overview_Data_Sheet_July.sflb.ashx

Until recently, Intellectual Ventures used third parties to carry out much of its litigation activities. The technique is reminiscent of the historic practice known as privateering. Privateering was an extremely effective and troubling method of waging war, which was finally abolished by treaty in 1856.⁵⁴ It allowed governments to issue a “letter of marque and reprisal” to private parties, which allowed their ships to 1) capture any ships carrying the enemy’s flag, 2) sell the ship and cargo at auction, and 3) keep the proceeds. Privateering allowed governments to enlist private parties in their aggressive activities so that the country could wage war with no impact on the treasury.

With Intellectual Venture’s version of privateering, the company sells a patent to a more aggressive licensing company, retaining a license for the Intellectual Ventures investors. The new owner is free to sue or license anyone not covered by the previous owner. The approach allows Intellectual Ventures to profit indirectly from the litigation without engaging in the expenditures or the risks of litigation.

Privateering could be a very effective way of nudging reluctant licensees in the following manner. An aggregator approaches a company, and demands that the company license one of the aggregator’s patents. When the company demurs, the aggregator sells the patent to an aggressive third party, who sues for a far higher license value. The aggregate then approaches the company again, this time demanding that the company

⁵⁴ One of the authors has previously discussed the similarity between historic privateering and the activities of modern non-practicing entities. See generally Thomas L. Ewing, *Indirect Exploitation of Intellectual Property Rights by Corporations and Investors: IP Privateering & Modern Letters of Marque & Reprisal*, 4 Hastings Sci. & Tech. L. J. (forthcoming Winter 2011). The treaty abolishing Privateering is the *Declaration Respecting Maritime Law*. Paris, April 16, 1856. The text of the treaty is available from the International Red Cross at <http://www.icrc.org/ihl.nsf/INTRO/105?OpenDocument>.

license a different one of the aggregator's patents. This time, the company may be much more compliant.

The approach could also be used to prod one's own licensees to toe the line, as speculated with the Xilinx circumstances above. Specifically, if the licensee must make payments to the aggregator based on the licensee's sales volume, and the aggregator believes that the licensee is being less than candid, the aggregator could sponsor an aggressive action by one of its proxies against a competitor of the licensee as a way to demonstrate potential consequences to its recalcitrant licensee. This approach would be reminiscent of the old Chinese adage of "kill the chicken to frighten the monkey."

While we do not know the deal terms, we did, however, find many examples of Intellectual Ventures using third-party proxies to litigate infringement claims against companies who appear to be likely licensing targets for large portions of Intellectual Ventures' portfolio. In particular, many of the patents sold by Intellectual Ventures have ended up in litigations brought by their new acquirers. Patents formerly owned by apparent Intellectual Ventures shells Viviana LLC,⁵⁵ Gisel Assets KG LLC,⁵⁶ Kwon Holdings Group LLC,⁵⁷ SF IP Properties 24 LLC,⁵⁸ Ferrara Ethereal LLC,⁵⁹ and Mission

⁵⁵ See, Assignment History provided by USPTO at <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field using "Viviana").

⁵⁶ See, Assignment History provided by USPTO at <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field using "Gisel Assets").

⁵⁷ See, Assignment History provided by USPTO at <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field using "Kwon Holdings").

⁵⁸ See, Assignment History provided by USPTO at <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field using "SF IP Properties").

⁵⁹ See, Assignment History provided by USPTO at <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee Name" field using "Ferrara Ethereal").

Abstract Data LLC⁶⁰ have been employed in patent infringement litigations respectively brought by the purchasers Picture Frame Innovations LLC,⁶¹ Patent Harbor LLC,⁶² Oasis Research LLC,⁶³ InMotion Imagery Technologies, LLC,⁶⁴ Webvention LLC,⁶⁵ and Mission Abstract Data LLC.⁶⁶ These litigations have been brought against companies such as Kodak, Hewlett Packard, Samsung and CBS Radio. Don Merino, senior vice president of licensing at Intellectual Ventures has said the sales were a logical step for the company and essentially denied that they related to privateering.⁶⁷ “I have enough of a set of assets where it just makes sense to start turning inventory,” he told Dow Jones in a 2010 interview.⁶⁸ Selling expiring assets makes perfect business sense, of course. Nevertheless, the technique could be used, both to maximize aggressive litigation returns while attempting to stay at arm’s length, as well as reinforcing the message to one’s own

⁶⁰ See, Assignment History provided by USPTO at <http://assignments.uspto.gov/assignments/?db=pat> (search in “Assignee Name” field using “Mission Abstract”) and subsequent assignment from Intellectual Ventures Audio Data LLC. IV also continues to sell patents, such as the recent sale from IV’s Sinon Data LLC to Personal Voice Freedom LLC, a company apparently associated with Charles Eldering’s Technology, Patents, and Licensing Inc.

⁶¹ See, e.g., *Picture Frame Innovations, LLC v. Eastman Kodak Company et al.*, 1:2009-cv-04888 (ND Ill 2009). (Intellectual Ventures generally denies publicly having any involvement in this litigation. Nevertheless, we note that in the litigation, Kodak argued that Picture Frame lacked the right to sue, given rights in the patent retained by Viviana and/or Intellectual Ventures. Kodak’s counsel termed the Picture Frame’s agreement “a hunting license” in motions filed before the court. The case settled in January of 2011 without rulings on Kodak’s motions, and the terms of the settlement have not been made public.)

⁶² See, e.g., *Patent Harbor, LLC v. LG Electronics, Inc. et al.*, 6:2010-cv-00436 (ED Tex, 2010).

⁶³ See, e.g., *Oasis Research, LLC v. Adrive, LLC et al.*, 4:2010-cv-00435, (ED Tex 2010).

⁶⁴ See, e.g., *InMotion Imagery Technologies, LLC v. JVC Americas, Corp. et al.*, 2:2010-cv-00474 (ED Tex 2010).

⁶⁵ See, e.g., *Webvention LLC v. Adidas America Inc. et al.*, 2:2010-cv-00410 (ED Tex 2010).

⁶⁶ See, e.g., *Mission Abstract Data LLC v. Beasley Broadcast Group Inc. et al.*, 1:11-cv-00176-LPS (D. Del 2011). Note that a Rule 7.1 filing in *Mission Abstract Data* states that the sole owner of this plaintiff is Digimedia Holdings, LLC, a Delaware entity formed in January 2011 just a few weeks prior to the assignment of patents from Intellectual Ventures Audio Data LLC. One could conclude that Mission Abstract Data has different owners now than it did prior to the transaction with Intellectual Ventures Audio Data LLC. Mission Abstract Data LLC was formed as a company in April 2007.

⁶⁷ Stuart Weinberg, *Intellectual Ventures Patent Divestitures Continue*, Dow Jones Newswires, February 24, 2010, available at <http://wsj.com>; see also Tom Ewing, *Introducing the Patent Privateers*, INTELLECTUAL ASSET MANAGEMENT, January/February 2011 at 31, 36.

⁶⁸ *Id.*

license targets that cooperation is the better strategy.⁶⁹ In addition, when the extent of the patent portfolio is unclear, the technique could be used to hint to targets that the patent being offered for licensing is only one piece of a more extensive portfolio in that area.

In another example of using third parties for infringement litigation, Avistar Communications sold a group of 41 patents and applications to Intellectual Ventures Fund 61 in December of 2009 for \$11 million.⁷⁰ In June of the following year, Intellectual Ventures re-sold these patents to Pragmatius.⁷¹ Five months later, Pragmatius used three of these patents to sue Facebook, YouTube, LinkedIn, and PhotoBucket.com for patent infringement.

Pragmatius has also filed infringement lawsuits against the major United States cable companies, including Time Warner Cable, Cox Cable, Charter Communications, and Comcast, for infringement of two additional patents that were acquired from Intellectual Ventures prior to that lawsuit.⁷² An Intellectual Ventures shell company had acquired these patents in 2007 as part of a larger patent lot purchased at an Ocean Tomo patent auction for \$3.025 million.⁷³ While Intellectual Ventures probably does not own

⁶⁹ While discussing the merits of litigation versus licensing, Peter Detkin said, “litigation is a highly inefficient way to do licensing. But let’s not lose sight that litigation is just licensing by other means.” *This American Life: When Patents Attack*, Chicago Public Radio (Jul. 22, 2011) (downloaded at <http://www.thisamericanlife.org/radio-archives/episode/441/when-patents-attack>)

⁷⁰ According to Avistar’s SEC filings, the complete transaction involved 99 US and foreign patents and 26 pending applications worldwide. Avistar Comm’ns, (Form 10-K, Exhibit 10.39) (Mar. 30, 2010).

⁷¹ These are the only patents whose ownership has been recorded to Pragmatius.

⁷² USPTO assignment database, <http://assignments.uspto.gov/assignments/?db=pat> (search in “patent number” field for U.S. No. Patents “5581479” and “5636139”), showing patent rights passing from Lot 20 to Intellectual Ventures to Pragmatius.

⁷³ See *Highlights of Ocean Tomo Spring 2007 Intellectual Property Auction*, Winston & Strawn LLP (May 2007), available at http://www.winston.com/siteFiles/publications/Ocean_Tomo.pdf (disclosing that maximum lot price was \$3.025 million); see also, USPTO assignment database, <http://assignments.uspto.gov/assignments/?db=pat> (search in “patent number” field for U.S. No. Patents “5581479” and “5636139”), showing patent rights passing from Lot 20 to Intellectual Ventures.

Pragmatus, it is not presently clear if Intellectual Ventures sold the patents for a lump sum cash payment or whether it is entitled to receive a percentage of the commercialization profits, including patent infringement damage awards and settlements. Deal terms comprising an upfront cash payment plus a revenue share seem fairly common in the patent marketplace generally.⁷⁴

The activities described above are only some examples of Intellectual Ventures' transfers to third parties for the purpose of intellectual property rights exploitation through litigation and/or licensing that we came across.⁷⁵ We suspect there may be many more examples.

After primarily using third parties to file infringement litigations, Intellectual Ventures began suing companies directly in December 2010. On a single day, Intellectual Ventures filed three large patent litigations, one against a group of software security companies, one against DRAM and flash memory manufacturers, and one against field programmable gate array (FPGA) manufacturers.⁷⁶ The company has filed additional

⁷⁴ Peter Detkin said, "We sell for some amount of money up front, and we get some percentage of the royalty stream down the road that is generated from these assets." *This American Life: When Patents Attack*, Chicago Public Radio (Jul. 22, 2011) (downloaded at <http://www.thisamericanlife.org/radio-archives/episode/441/when-patents-attack>)

⁷⁵ See, e.g., Patent Harbor, LLC v. Audiovox Corp. et al., 6:2010-cv-00361 (ED Tex. 2010); Patent Harbor, LLC v. Dreamworks Animation, Inc., 6:2011-cv-00229 (ED Tex. 2011); Patent Harbor, LLC v. Twentieth Century Fox Home Entertainment, LLC et al., 6:2010-cv-00607 (ED Tex. 2010); InMotion Imagery Tech., LLC v. Penthouse Digital Media Productions, Inc. et al., 2:2010-cv-00084 (ED Tex. 2010); InMotion Imagery Tech., LLC v. Notorious Productions, Inc. et al., 2:2011-cv-00415 (ED Tex. 2011); InMotion Imagery Tech., LLC v. LFP Video Group, LLC et al., 2:2011-cv-00261 (ED Tex. 2011). We have not checked all of IV's 11,000 US patents to see which ones have been sold to third parties, but we suspect that IV has sold more patents than the ones identified here.

⁷⁶ Intellectual Ventures I LLC et al v. Altera Corp. et al, 1:2010-cv-01065 (D. Del. 2010); Intellectual Ventures I LLC et al v. Hynix Semiconductor Inc. et al, 1:2010-cv-01066 (D. Del. 2010); Intellectual Ventures I LLC et al v. Canon Inc. et al, 1:2011-cv-00792 (D. Del. 2011).

infringement suits against the parties in other jurisdictions including the International Trade Commission.

B. Other Mass Aggregators & Interconnections

Intellectual Ventures' success in raising capital has led to the creation of a number of smaller versions of the company. We will discuss a few such organizations briefly. It is unclear whether and to what extent Intellectual Ventures has partnered with these companies, but there are a number of striking connections and interactions among them. It is possible that Intellectual Ventures maintains ties to such other organizations as a way of lowering its exposure for various deals. In addition, with the amount of capital at Intellectual Ventures' disposal, it would make sense for the company to make some investments of its own.

i. Acacia Research Corporation

Acacia Research Corporation likely represents the first modern mass aggregator. Acacia is the largest publicly traded patent-licensing company, and has executed more than 1,000 license agreements across 104 of technology licensing programs.⁷⁷ The company's operating subsidiaries (a suite of limited liability companies) own or control the rights to more than 180 patent portfolios.⁷⁸ These portfolios relate to technologies

⁷⁷ See, Acacia Form 10-Q For The Quarterly Period Ended June 30, 2011; available at <http://www.sec.gov/Archives/edgar/data/934549/000093454911000016/actg10q063011.htm>

⁷⁸ *Id.*, noting that "Acacia's only identifiable intangible assets at June 30, 2011 and December 31, 2010 are patents and patent rights. Patent-related accumulated amortization totaled \$33,058,000 and \$31,198,000 as of June 30, 2011 and December 31, 2010, respectively."

from consumer electronics to automotive technologies and from medical devices to security technologies. Acacia's licensees include companies as diverse as 3M, Microsoft, Mitsubishi, Bloomberg, Nokia, and the Walt Disney Company.⁷⁹ Acacia recently began a turnkey licensing program for operating companies whose operations now include licensing more than 40,000 patents owned by Renesas, the world's third-largest semiconductor company.⁸⁰

Acacia has been among the most litigious of the non-practicing entities. According to one report, the company and its subsidiaries have been plaintiffs in 280 patent lawsuits and defendants (presumably from declaratory judgment actions) in still more litigations.⁸¹ Early Acacia licensing assertions related to a portfolio of patents relating to audio and video transmission and receiving systems, commonly known as audio-on-demand and video-on-demand.

Acacia⁸² has been a public company for nearly 10 years, and counts among its investors household mutual fund managers like Oppenheimer Funds, Fidelity, and the Vanguard Group.⁸³ The company's stock has generally followed a steadily upward trend. From the beginnings of public trade in the ACTG stock on Dec. 17, 2002, the shares have

⁷⁹ Acacia Research Corp., Investment Profile, July 2011; available at: <http://www.acaciatechnologies.com/docs/AcaciaFactSheet.pdf>

⁸⁰ Press Release, *Renesas Electronics And Acacia Research Enter Into Strategic Patent Licensing Alliance*; Aug. 24, 2010; available at <http://www.renesas.com/press/news/2010/news20100824.jsp> (Renesas is an entity formed by the merging of the semiconductor businesses of three Japanese companies—Hitachi, Mitsubishi, and NEC.)

⁸¹ Daniel P. McCurdy, *Patent Trolls Erode the Foundation of the U.S. Patent System*, Science Progress (Jan. 12, 2009); <http://scienceprogress.org/2009/01/patent-trolls-erode-patent-system/>.

⁸² Trading as ACTG on the NASDAQ exchange.

⁸³ See, *Shareholders Major ACTG Acacia Research Corporation Shareholders*, Morningstar, <http://investors.morningstar.com/ownership/shareholdersmajor.html?t=ACTG®ion=USA&culture=en-US+%28%29> (click tab for "Institutions").

risen from \$1.85/share to \$40.28/share by Sept. 27, 2011, representing a 36%/year rise over the 2002-2011 period.⁸⁴

Acacia, which began operations in 1993, initially had two branches, one branch that made products and another branch that licensed patent rights, initially to V-chip technology.⁸⁵ Over time, the product-making side of the company, which produced a system for rapid creation of DNA and other compounds on a programmable semiconductor chip, has somewhat diminished in significance.

In August 2010, a wholly owned subsidiary of Acacia became the general partner of the Acacia Intellectual Property Fund, L.P. (the “Acacia IP Fund”), which was formed in August 2010. The Acacia IP Fund is authorized to raise up to \$250 million.⁸⁶ The Acacia IP Fund aims to follow in the patent-licensing work that Acacia has pioneered.

ii. Transpacific IP Ltd.

Transpacific IP Ltd. began operations in Taiwan in 2004 and has expanded to include offices in Hong Kong, Beijing, Tokyo and Singapore. Unlike the typical intellectual property aggregator, Transpacific seems to have kept a very low profile with a fairly nondescript website and only a few news stories about the company.

⁸⁴ This rise does not include any dividends paid during this period. See, Google Finance for Acacia Research (ACTG) from Dec. 16, 2002 to Sept. 27, 2011; <http://www.google.com/finance/historical?cid=681024&startdate=Jul%20%2C%202001&enddate=Oct%20%2C%202011&num=30&start=2220#>

⁸⁵ See, e.g., Acacia Technologies Licenses Digital Media Transmission Technology to NXTV, Jan. 2, 2004; available at <http://www.acaciaresearch.com/pr/010204NXTV.pdf>

⁸⁶ *Supra* note 89.

Despite its low profile, the company has amassed a portfolio of more than 3,000 US patents and applications.⁸⁷ The company has purchased these patents from Asian companies as well as US companies. It is possible that Transpacific and Intellectual Ventures conducted some sort of business arrangement with each other in late 2007 or early 2008, although the terms and the timing are unclear. During this time period, a number of Transpacific's patents seem to have shifted to new intellectual property attorneys who also appear to represent Intellectual Ventures for patent prosecution matters.

We initially found Transpacific while searching for Intellectual Ventures shell companies but concluded that Transpacific is probably not an Intellectual Ventures shell, given that it seems to have its own corporate identity. Transpacific's corporate structure seems to resemble that of Intellectual Ventures but in miniature, including a number of shell companies of its own.

Intellectual Ventures has purchased patents from Transpacific and its shells. For example, two of the patents Intellectual Ventures is using in its spate of direct infringement lawsuits filed at the end of 2010 were purchased from Transpacific.⁸⁸ The transaction was characterized as a merger in documents filed with the USPTO.

We noted above that Transpacific and Intellectual Ventures often share the same patent counsel. The sharing is so close that in one instance, a patent practitioner

⁸⁷ Plus an even greater number of non-US patents/applications.

⁸⁸ Intellectual Ventures I LLC et al v. Altera Corp. et al, 1:2010-cv-01065 (D. Del. 2010); Intellectual Ventures I LLC et al v. Hynix Semiconductor Inc. et al, 1:2010-cv-01066 (D. Del. 2010); USPTO assignment database, <http://assignments.uspto.gov/assignments/?db=pat> (search in "patent number" field for U.S. No. Patents "6260087" and "5687325"), showing Transpacific's involvement in the assignment of these patents to Intellectual Ventures.

mistakenly filed a power of attorney signed by a Transpacific representative in the prosecution file for a seemingly unrelated Intellectual Ventures shell company, a mistake one would not expect to see with completely unrelated portfolios.⁸⁹

iii. RPX

John Amster founded RPX in September 2008. Just prior to founding the company, Mr. Amster was Intellectual Ventures' general manager of strategic acquisitions and vice president of licensing. RPX's business model is to buy potentially problematic trolling patents and then license those patents to its members. Thus, the company's members can head off the problems of intellectual property infringement litigation for a fraction of the cost. The company has grown rapidly, with annual revenues now in excess of \$65 million. RPX held its initial public stock offering in 2011.

It is possible that some of Intellectual Ventures' investors wanted to participate in an aggregator that overtly operated as a patent defense fund, and a fund limited more to areas directly related to its investors' businesses and interests, and that RPX was formed to fill this market need. The patents that RPX acquires tend to be somewhat more along the lines of nuisance value patent than the patents that Intellectual Ventures acquires, and it is possible that the two companies may not often find themselves competing for the purchase of a given patent. At present, RPX has signed up approximately 65 technology

⁸⁹ The power of attorney filed for US Patent 7,427,742 on Sept. 2, 2010 is for Tang Sung Capital, a TransPacific IP shell, when the correct owner of the patent is IV's shell Buvane Holdings. A power of attorney for Buvane was filed in the case on Jan. 11, 2011. We note that nothing in the assignment history for the '742 patent indicates that it was ever owned by a TransPacific shell; in contrast IV has done numerous transactions with Cypress Semiconductor, the patent's previous owner. Thus, it would seem that the patent prosecutor was simply confused about which power of attorney paper to file, a mistake that does not often arise in completely unrelated portfolios.

companies, about half of which have either sold patents to Intellectual Ventures or have invested in Intellectual Ventures.⁹⁰

RPX has spent over \$300 million acquiring patents and controls them via several funds, such as RPX-LV Acquisition LLC and RPX-NW Acquisition LLC. However, while RPX licenses or buys patents for its current members, it does not always retain rights to these patents and acknowledges that the patents could later be used by other potentially litigious owners to bring suits against companies that were not members of RPX at the time in which it engaged in those licenses.⁹¹ RPX subscribers apparently do not enjoy a perpetual license to patents owned by the firm until after a three-year licensing period, which may inhibit a member from leaving RPX as patents acquired inside the three-year window may become unlicensed.⁹²

⁹⁰ RPX Corp., Final Prospectus (Form 424B4) (Sep. 16, 2011).

⁹¹ In other words, if I am a company and I am worried about a troublesome patent that could be used against me, RPX can buy the patent and transfer the patent to a troll reserving a license for all RPX investors. The troll is then free to go after non-RPX investors, presumably their competitors. According to RPX, “in nearly a third of our transactions, we acquire rights only for our clients, and we have already begun to sell patents. Those joining later may not get the full benefit of licensing to our broad portfolio that our earlier clients enjoy.” RPX Corp., FAQs, <http://www.rpxcorp.com/index.cfm?pageid=23> (last visited Sep. 30, 2011).

⁹² See, *Order No. 40, Initial Determination Granting Joint Motion to Terminate Investigation as to Respondent Performance Designed Products LLC, In the Matter of Certain Motion-Sensitive Sound Effect Devices and Image Display Devices and Components and Products Containing Same*, Inv. No. 337-TA-773, US International Trade Commission, 2011 (Appendix A contains a redacted version of a template RPX license, and the language above is found in Section 2.1(c).) and see, *Order No. 11, Initial Determination Granting Joint Motion to Terminate Investigation as to Vivitek, In the Matter of Certain Motion-Sensitive Sound Effect Devices and Image Display Devices and Components and Products Containing Same*, Inv. No. 337-TA-773, US International Trade Commission, 2011 (Appendix A contains another redacted version of a template RPX license, and the language above is also found in Section 2.1(c).)

iv. Round Rock Research

Round Rock Research, LLC holds a portfolio of more than 3,400 US patents. All of these patents were acquired from Micron Technology in December of 2009 and collectively represent roughly 20% of Micron's total patent assets. The company was incorporated in Delaware nearly a year before it was publicly announced that John Desmarais, a prominent US patent litigator, would be leading the company.⁹³ It was also formed nearly a year before the 3,400 patents were transferred from Micron to Round Rock.

Micron has not made a formal filing with the SEC regarding the large patent sale to Round Rock or issued a press release about it. Curiously, Micron's annual disclosures to the SEC from 2007-2010 report a consistent figure for the number of patents held by the company and show no drop in the number of patents owned. Nevertheless, in litigation filings, Round Rock says that it has no parent company and that no publicly held company owns 10% or more of its stock. This has raised questions as to who owns Round Rock and/or who financed the sale.⁹⁴

Desmarais is the only public face for Round Rock.⁹⁵ One could estimate that the value of 3,400 Micron patents probably approaches or exceeds a hefty fraction of \$1

⁹³ After hearing the definition of "privateer" used above, Desmarais conceded that he was one, adding, "I've been called worse things." John Desmarais, Round Rock Research, Comment made during a panel discussion of privateering at the Intellectual Property Business Congress in San Francisco, (Jun. 20, 2011).

⁹⁴ See, e.g., Round Rock Research v. HTC Corp., 1:10CV00840 (D. Del 2010).

⁹⁵ Desmarais, *supra* note 95.

billion,⁹⁶ which is seemingly a larger sum than even a successful patent litigator would be likely to muster from his own resources.

Suggesting a connection between Round Rock and Intellectual Ventures would be speculation, but we do note an interesting number of intersections between the people involved in each entity. For example, Desmarais is the litigator for the patent infringement lawsuit that Intellectual Ventures has filed against the field programmable gate array manufacturers. He is also the litigator for one of the Pragmatius cases filed using patents formerly owned by Intellectual Ventures, as well as the litigator for Oasis Research, a possible Intellectual Ventures privateering operation. Melissa Finocchio, Intellectual Ventures' chief litigation counsel, was formerly the head of the litigation department at Micron. In addition, Samsung has reportedly signed separate licensing agreements in 2010 with Round Rock, Micron Technology, and Intellectual Ventures.⁹⁷

II. Potential Positive Effects

We will begin by examining the potential positive effects that mass aggregators could bring. What opportunities or failures are remedied by their appearance in the

⁹⁶ The Nortel patent auction was completed on July 1, 2011 for \$4.5 billion and comprised a comparable number of patents albeit in a different technical subject. Nortel Networks Corp., Current Report (Form 8-K) (Jul. 1, 2011).

⁹⁷ Round Rock is to some extent the successor to Keystone Technology Solutions, LLC. Keystone was closely tethered to Micron and may well have been wholly owned by Micron. Many of Round Rock's patent assets began as Micron properties, were transferred to Keystone, transferred back to Micron, and then transferred to Round Rock. Keystone does not appear to have had any employees who were not also Micron employees.

market? What positive implications do these mechanisms have for innovation or for individual players in the world of invention?

A. The Forgotten Inventor

In a perfect world, there might be no role for mass aggregators. An inventor, incentivized by the rewards available through the patent system, creates an invention bringing forth the idea for all to see and benefit from. The inventor either manufactures a product resulting from the invention or licenses the invention to others for manufacture. Those who want to enter a particular commercial space, thoroughly scour the record of patents granted to determine whether they must obtain rights from any patent holders. If rights are needed, the parties willingly negotiate a license and the product goes forward. At the end of the day, inventors are rewarded for the innovations they bring to the field, and society benefits from the introduction of new products and ideas.

The patent system, however, is far from perfect, and the pathway from invention to patent to product is unlikely to be so simple, direct, or focused on Patent Law. Ideas and information can permeate intellectual exchanges, particularly in fields where academic research plays an important role. Such ideas may skip lightly along a discussion pipeline, moving around unmoored from their intellectual property tethers. Producers may incorporate ideas unconsciously, failing to recognize that the inspiration or credit belongs to someone else. In another scenario, a producer develops the idea through independent creation often completely unaware that someone else was technically “first” with the idea but maybe not with the product. Numerous researchers and inventors may

be working on similar issues at the same time, as they try to push through the barriers at the edge of a field. A great invention may fail (initially) as a commercial product because other, unrelated but nevertheless enabling technologies, are themselves too immature to support a successful commercial product. Later, when the enabling technologies mature, the later innovators may be completely unaware that someone else pioneered similar products but failed commercially.⁹⁸

In theory, the producer should be able to search for relevant patents and arrange necessary licensing, but in the real world, this description is no more than a convenient myth. Many patent attorneys actively counsel their clients not to look at issued patents for fear of their client being put on notice, which risks the beginnings of a damage calculation plus the possibility of additional damages due to willfulness;⁹⁹ many corporations have adopted similar firm-wide directives. Limited resources at the Patent and Trademark Office sometimes thwart patent examiners from screening out bad patents and weak claims. With roughly 2 million active US patents,¹⁰⁰ identifying all potentially relevant patents is tremendously challenging. Moreover, it is difficult, if not impossible, to know in advance how broadly a patent will be interpreted and whether a particular patent claim will be upheld.¹⁰¹ Much of this uncertainty stems from the fact that the metes and bounds of the patent, when enforced, are determined by the court through the process

⁹⁸ One example of this phenomenon plays out in the *NTP v. RIM* case.

⁹⁹ 35 U.S.C. § 284 (2006) (“[T]he court may increase the damages up to three times the amount found or assessed.”)

¹⁰⁰ According to the World Intellectual Property Organization, there were 1,930,631 active patents in the United States in 2009. *Statistics on Patents*, World Intellectual Property Organization, <http://www.wipo.int/ipstats/en/statistics/patents/> (last visited September 30, 2011).

¹⁰¹ ROBIN FELDMAN, *RETHINKING PATENT RIGHTS* (forthcoming May 2012; Amber Hatfield Rovner, *Cannons of Patent Claim Construction*, 873 *PLI/Pat* 85, 130 (2006) (“If one thing is certain . . . it is that claim construction is inherently uncertain.”); John M. Golden, *Construing Patent Claims According to Their “Interpretive Community”*: *A Call for an Attorney-Plus-Artisan Perspective*, 21 *Harv. J.L. & Tech.* 321, 324-25 (2008).

of claim construction, a process that is notoriously unpredictable.¹⁰² In a classic example of the problem, two recent litigations happening at the same time within the same district court produced different constructions of the same claim term.¹⁰³

Even when a producer has diligently acquired all the licenses that appear to be needed, a new party may appear. In a problem known as patent stacking, producers find themselves paying out ever-greater amounts of their revenue to a theoretically unlimited number of patent holders. There is no law, rule, or guideline that necessarily limits the aggregate number of intellectual property licenses for a product to a fixed percentage of revenue, and it is theoretically possible for the collective amount of royalties to exceed 100% of revenue.¹⁰⁴

In short, the patent system works just fine for generating patents but stumbles in rights licensing.¹⁰⁵ Some producers take licenses from aggressive licensors whose patents may not be infringed while other producers play games to avoid licensing rights

¹⁰² For commentary on the uncertainty of claim construction, and thereby claim scope, *see, e.g.*, Gretchen Ann Bender, *Uncertainty and Unpredictability in Patent Litigation: The Time is Ripe for a Consistent Claim Construction Methodology*, 8 J. INTELL. PROP. L. 206-207 (2001) (noting that the Federal Circuit changed lower courts' claim interpretations in about 40% of cases between 1996 and 2001, which indicates a large degree of uncertainty for inventors and practitioners); Matthew Sag & Kurt Rohde, *Patent Reform and Differential Impact*, 8 MINN. J. L. SCI. & TECH. 33-35 (2007) (noting that the Federal Circuit's failure to adopt a consistent methodology for claim construction has created "significant doctrinal instability and confusion in the lower courts"); R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1161-1163 (2004) (analyzing the Federal Circuit's decisions involving claim interpretation from 1996 to 2002 and finding a pattern of panel-dependent outcomes, as well as variability in the choice of methods used in claim construction by individual judges). *See also* Jeffrey A. Lefstin, *The Formal Structure of Patent Law and the Limits of Enablement*, 23 BERKELEY TECH. L.J. 1212 (2008) (offering that, due to the formalist structure of patent law, all claims are infinite in scope).

¹⁰³ *See* *Arlington Indus. v. Bridgeport Fittings, Inc.*, 632 F.3d 1246, 1248 (Fed. Cir. 2011).

¹⁰⁴ Eleven patent holders each entitled to 10% of gross revenue would amount to 110% of revenue.

¹⁰⁵ And may stumble even further in fulfilling its ultimate *raison d'être* in society.

from parties whose patents probably are infringed. It's a hard knock life for the small inventor and the forthright producer.¹⁰⁶

Even when the proper parties do identify each other, information gaps, valuation difficulties, and other transaction obstacles may prevent consummation of a deal. Plagued by boundless uncertainty, insufficient information, and high transaction costs, the true patent system looks nothing like the idealized version.¹⁰⁷ Imagine a real property market where almost no comparable information is available. The sales price for the house next door is unavailable as is the sale price for the house two blocks away with an identical floor plan.¹⁰⁸

In this world of imperfections, mass aggregators may provide a market mechanism for the forgotten inventor whose innovations are in use every day but who remains uncompensated. By creating a market for monetization of patents, mass aggregators might make it possible for individual inventors to find others who have the capital and expertise to identify and pursue claims against those who are producing products that infringe.

Compensating existing inventors does not increase the store of available products or necessarily fund further innovation. One could argue, nevertheless, that a market for patent monetization benefits innovation beyond simply providing cash for the patent

¹⁰⁶ Charles Strouse and Martin Charnin, "It's a Hard Knock Life," Annie, 1977.

¹⁰⁷ Anne Kelley, *Practicing in the Patent Marketplace*, 78 U. CHI. L. REV. 115, 130 (2011); Scott Stern, *The Impact of Uncertain Intellectual Property Rights on the Market for Ideas: Evidence from Patent Grant Delays*, Research Roundtable: Law & Economics of Innovation II 10-15 (2008), <http://www.law.northwestern.edu/academics/searle/papers/Stern.pdf>; Dan L. Burk & Mark A. Lemley, *Quantum Patent Mechanics*, 9 LEWIS & CLARK L. REV. 29, 53 (2005).

¹⁰⁸ See, e.g., Nathan Myhrvold and Mark Lemley, "How to Make a Patent Market" (2007), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1012726.

holder. Inventors as a whole may be more likely to bring forth new inventions if the mechanisms for reward operate more effectively than the roulette wheel that inventors face today.¹⁰⁹

B. The Middleman

In addition to the possibility of compensating forgotten inventors, one could argue that mass aggregators serve as a form of efficient middle man, a market intermediary who helps patents find their way to those who would exploit them to create new products. Inventors may not have the capital, expertise, or other necessary capacity to manufacture products. One could see the market for patent monetization as a matching system moving patents to those with proper production capacity.

Middleman systems do have some precedence in the world of innovation finance. Venture Capitalists have been known to set up incubators to help those with ideas bring them to fruition. The market for patent monetization could be another variant on the theme. One possibly stark difference, however, is that the patent aggregators work purely with patent legal rights and not with technology licenses. Similarly, they do not tend to push the direction of new creations but instead scoop up creations in areas of interest to them, which tend to be the “hot” technology areas of today and not the beneficial technologies of tomorrow. In short, there does not seem to be a technology aggregator who works to facilitate the spread of otherwise unknown information and know how as

¹⁰⁹ We will discuss the 26-year “time lag” of patent exploitation and “To Serve Man” later.

opposed to spreading legal rights whose boundaries are set forth on publicly available websites and patent libraries.

As described above, Intellectual Ventures, if not the other mass aggregators, does have a laboratory set up like an incubator.¹¹⁰ The problem with the notion of mass aggregators as middle men connecting innovators with production capital and capacity, is that for the most part, they do not seem operate that way. Very little mass aggregator activity appears to be of the middleman variety. Most activity seems to be focused on the interaction of existing patents with existing products. In short, the mass aggregators are not “technology push” in the sense of directing the spark of creation for tomorrow’s new products. Rather, their activities follow the pattern of scanning the horizon to pick out today’s hot technology areas and then finding and securing orphaned and non-aligned patents that can be used to extract a return from today’s products.

In theory, a market for patent monetization could operate as a type of exchange, where buyers and sellers can meet with lower transaction costs. Exchange markets, however, do invite arbitration and speculation, which does not always have a stabilizing economic influence. The speculative effects are multiplied by the extreme information asymmetries in the intellectual property rights markets in which some parties have access to extensive market information and other parties have little more than a gut feel. For this and other reasons, exchange systems tend to have a fairly extensive degree of regulation and supervision.

¹¹⁰ The lab, however, is a mere 27,500 square feet and tends to do little more than contract applied research in anti-malarial devices for the Bill and Melinda Gates Foundation. *Our Inventions*, Intellectual Ventures, <http://www.intellectualventures.com/OurInventions.aspx> (last visited September 30, 2011).

C. The Litigation Defense Fund

The most likely positive role for mass aggregators may be as a Litigation Defense Fund. The patent world is characterized by extensive bargaining.¹¹¹ Of particular relevance to the aggregator scenario, a company faced with an infringement claim may look at its own portfolio to see what patents can be asserted against the entity that is threatening them. In other words, suppose you sue me for patent infringement. If I have an extensive patent portfolio and can threaten to assert them against your products, you may be more willing to settle your infringement claim against me, or we may be able to work out a cross-licensing arrangement. I am much more vulnerable to infringement suits, both ones that strong and ones that are weak, if I do not have appropriate patents to bargain with.

Wouldn't it be nice if one could find precisely the patent one needs at the just the right moment? Mass aggregators seem to be organized to provide exactly that service. Recall for example, the Verizon scenario described above, in which Verizon purchased patents from the Intellectual Ventures portfolio to assert against TiVo as a counterclaim in TiVo's infringement litigation against Verizon.¹¹² This is reminiscent of the Just-In-

¹¹¹ FELDMAN, *supra* note 96 (arguing that patents do not grant clear, definitive rights but rather serve as the beginning of the bargaining over the contours of those rights).

¹¹² See discussion at text accompanying note 44, *supra*.

Time inventory strategy, in which materials are purchased and products are made only as they are actually needed to meet customer orders.¹¹³

One can think of mass aggregators as allowing Just-In-Time Patenting. When a company is sued for infringement or must enter into a negotiation to acquire rights from another entity, the company can shop for and acquire precisely the patents that could present a counter threat to the opposing party. When the litigation is complete, the patent can be returned. This type of strategy could ensure that a company has the comfortable freedom to operate vis-à-vis its competitors without worrying about patent suits that are the scourge of the modern patent world.¹¹⁴

In addition to the Verizon example, several other companies have successfully used this tactic to mitigate lawsuits brought against them.¹¹⁵ Hewlett Packard, for example, filed an infringement suit against Acer in March 2007.¹¹⁶ Acer, a Taiwanese company, subsequently bought several patents from a Taiwanese research organization,¹¹⁷ and then asserted the patents in a countersuit against HP.¹¹⁸ The lawsuit was settled by mid-2008.¹¹⁹

¹¹³ *Just in Time (JIT) Manufacturing and Inventory Control System*, Accounting for Management, http://www.accountingformanagement.com/just_in_time.htm (last visited September 30, 2011).

¹¹⁴ Renting patents will do little to discourage lawsuits by non-practicing entities, however.

¹¹⁵ These examples are discussed in Ewing, *supra* note 54.

¹¹⁶ *Hewlett-Packard Co. v. Acer, Inc.*, No. 02-07-CV-103-CE, 2008 U.S. Dist. LEXIS 25952, at *3 (E.D. Tex Mar. 31, 2008).

¹¹⁷ See, USPTO assignment database, <http://assignments.uspto.gov/assignments/?db=pat> (search in “patent number” field for U.S. No. Patents “5977626”, “6188132”, “6788257”, “6280021”, showing execution dates to Acer in September and July of 2007); Who We Are, Indus. Tech. Research Inst., <http://www.itri.org.tw/eng/about/article.asp?RootNodeId=010&NodeId=0101>.

¹¹⁸ Erica Ogg, *Acer Sues HP Again Over Patents*, CNET News Blog (Oct 31, 2007, 3:40 PM PDT), http://news.cnet.com/8301-10784_3-9808687-7.html.

¹¹⁹ Press Release, Hewlett Packard, HP and Acer Settle Patent Litigation (June 8, 2008), <http://www.hp.com/hpinfo/newsroom/press/2008/080608a.html>.

Similarly, Samsung defended itself in a patent infringement case by buying patents and then using them in a countersuit against Matsushita.¹²⁰ Over the course of the litigation, Samsung also filed counterclaims related to patents that it had previously obtained from a German government agency.¹²¹

It would be difficult to overestimate the value of having an effective response to the problem of modern patent litigation. It is tremendously challenging, if not impossible, to determine whether an asserted patent is valid and whether it applies to the product it is being asserted against. Patent litigation is lengthy and expensive, and it is tough to predict the outcome of any individual case. When a company is sued for infringement, the rational choice may be to pay the person bringing the claim, even if the claim is quite weak. If a settlement cannot be reached, a company must slog through years of exhausting litigation that can drain the company's finances, distract the company's executives, and generate negative publicity. The ability to acquire the perfect weapon, tailored to a particular patent litigation, just at the time it is needed would be of great value to modern companies.

Mass aggregators may offer a secondary function that can also help with litigation woes. Just-in-Time Patenting will not necessarily help in fending off trolls. Trolls, by definition, are non-practicing entities. Thus, trolls do not have any products that might be

¹²⁰ Brief of Plaintiff at 5, *Matsushita v. Samsung*, No. 02-336, 2005 U.S. Dist. Ct. Motions LEXIS 32374 (D.N.J. 2005); USPTO Assignment history for the '693 patent at <http://assignments.uspto.gov/assignments/?db=pat> (search in "patent number" field for U.S. No. Patent "5481693", showing transfer to Samsung from SonicBlue on Nov. 14, 2002); Eric Hellweg, *SonicBlue's Bankruptcy: Big Media Wins*, CNNMoney.com (Mar. 27, 2003), <http://money.cnn.com/2003/03/27/technology/techinvestor/hellweg/index.htm>.

¹²¹ See, USPTO Assignment history for '209 patent at <http://assignments.uspto.gov/assignments/?db=pat> (search in "patent number" field for U.S. No. Patent "5181209," which was purchased from the German aerospace research center now known as Deutsches Zentrum für Luft- und Raumfahrt e.V.).

vulnerable to threats from other patents. There may be complicated strategies, in which patents can be used through third parties to interfere with a particular troll's activities, but in general, Just-in-Time patenting is not a troll solution.

Mass aggregators, however, can impede activities by non-practicing entities in other ways. Large patent pools with vast capital resources can deal with trolls by sopping up their potential patent inventory when it appears on the market. In other words, an aggregator on behalf of its subscriber operating companies may compete with trolls by buying up patents that could possibly be used against any of them if they appear in an open market. The companies still incur costs to respond to the troll problem, but it may be cheaper to buy patents than to buy off trolls, and it is certainly less distracting and aggravating for company executives. In addition, the anti-troll patent acquisition activity is outsourced to a third party – the mass aggregator – who may gain experience as a repeat player in the market for patent monetization, allowing the company to focus on its core activity of production.¹²²

Similarly, the aggregator may approach a non-practicing entity that has already sued or threatened to sue members of the aggregator's anti-troll club and simply buy the patent and or secure licenses. This process may provide settlement for the operating company members at lower cost than they would spend litigating (and settling) individual

¹²² One philosophical conundrum with this strategy, however, is whether the mass aggregator expressly abandons the purchased patents, thus eliminating them forever as a threat to anyone or whether the mass aggregator subsequently solves the "free rider" problem by "trolling" against non-aggregator subscribers using the purchased patents. In the first approach, the aggregator performs a community service at the expense of its subscribers and financial backers; in the second approach, the aggregator essentially becomes a troll itself.

lawsuits, although one could question whether it constitutes horizontal collusion by competitors.

This process may also be good for the aggregator's business. When the non-practicing entity has also sued companies who are not members of the aggregator, the aggregator may also purchase additional licenses or make other arrangements with the non-practicing entity that make "joining the club" attractive for the non-member operating companies. Of course, this process does not really break the non-practicing entity's business model, and in some sense provides it with greater certainty of an ultimate deal, albeit possibly at a lower profit.¹²³

This particular anti-troll approach also has a pleasant side effect. As the aggregator amasses patents, those patents can be used as a hammer to bash competitors who haven't joined the club, and the income can be used to defray the costs of acquisition.

Intellectual Ventures has taken a particularly forward-looking approach to the activity. By signing up universities, research labs, and inventors, Intellectual Ventures has optioned future patentable ideas prior to their conception. In other words, they are not just swatting the pesky mosquitos; they are actually draining the swamp. Of course, this analogy assumes that "the swamp," also known as a "biologically diverse wetland," is a bad thing that all parties agree should be drained, filled in, paved over, and forgotten.

The value of this litigation defense and anti-troll activity may explain why some of the largest market incumbent technology companies are listed as early investors and

¹²³ This may encourage the non-practicing entity to enter a "volume business" on a lower revenue per unit transacted basis, *e.g.*, mass production.

participants in mass aggregators. These companies may find the possibility of a defense fund tantalizingly appealing, even if they would be more reluctant to join troll-like activity. In addition, the pressure of joining a mass aggregator becomes greater across time. As your fellow technology companies sign up, it becomes harder to resist, even if it falls outside of corporate policies or the goals to which one might otherwise aspire. Business is a form of communication, and market actors tend to replicate the behavior of others.

If the model works well enough, it could become more than Just-In-Time patenting. Over time, a company may not have to do much more than rattle the defensive sword against a competitor. The largest market incumbents presumably have the greatest potential access to the Just-in-Time patents. When one has an insurmountable weapon, there is no need to use the weapon.¹²⁴ In this context, as companies demonstrate that they have access to any sort of patent for use against any sort of company via access to a pool, the amount of producer v. producer patent litigation could potentially be reduced as prospective litigants contemplate the potential impact of a new, unknown weapon that the well-heeled market incumbent could assert against them by virtue of its platinum club card. Thus, participating in a patent mass aggregator becomes a form of insurance. One may never need it, but it is there if necessary. Like any doomsday device, however, it

¹²⁴ But then again, maybe not. In the period immediately following the Second World War, the US government assumed that it could fight all future wars using nuclear weapons and consequently wouldn't need nearly as many soldiers, sailors, and marines. The armed services competed fiercely over control of nuclear weapons because the government was considering eliminating at least one of them. But when the Korean War came along, the strategists soon realized that some wars would be fought on scales that would not justify the use of nuclear weapons, and consequently, conventional weapons became much more attractive again and each of the separate services thrived.

needs to be advertised and concretized with strategic demonstrations of its potential power.¹²⁵

Finally, in thinking about the troll activity that mass aggregators could potentially counter, one must be careful that the cure is not worse than the disease. As patent scholars Meurer and Bessen point out in their book, troll activity accounts for only a small part of the costs of the patent system.¹²⁶ If the potential harms from this anti-troll approach are too great, the solution could be worse than the problem. We will turn to considering the potential harms from mass aggregation activity.

III. Potential Harms

If the patent system worked efficiently, one might be able to anticipate and measure the types of positive effects described above. The patent world, however, is far from perfect. In fact the same market imperfections that fuel the trolling phenomenon are likely to prevent the market for patent monetization from offering the positive effects contemplated and to create harm instead. The aspects of the patent system that ensure high transaction costs, encourage nuisance litigation, and create incentives for inefficient behaviors will carry over to the new patent system with the addition of aggregators.

¹²⁵ See, e.g., Stanley Kubrick, *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb*, (Columbia Pictures, 1964). (The problem with the Soviet “doomsday device” was that they had not told the Americans they had developed it.)

¹²⁶ JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 160 (2008).

The overarching problem is that it is difficult, if not impossible, to get a quick and inexpensive answer in a patent dispute. Given the difficulty of translating the abstract language of a patent from one context to another, the lack of predictability in patent decisions, and other uncertainties in patent law, it is difficult to tell whether a particular patent claim will be upheld and whether a particular product will be found to infringe a given claim.¹²⁷ No matter what the trial court decides, litigants have fairly good chances that the Court of Appeals for the Federal Circuit may find differently. The cost of finding an answer to the question is quite high in terms of both dollars and time. Patent litigation is lengthy and expensive, so the cost of testing whether a particular threat of infringement has merit will be high. The cost is so high, in fact, that testing a threat can easily exceed the cost of settlement, and parties may rationally choose to pay a complainant even when the claims seem quite weak.

In calculating the potential costs of litigating an infringement claim, a company must also include the risk that damages will be assessed. Current doctrines on measuring damages from patent infringement can result in awards that have a devastating impact on a company. Suppose a company makes a complicated, multi-component product. If one component of the company's product is found to infringe someone else's patent, the damages may far exceed the value of that component to the overall product.¹²⁸ The greatest risk from an infringement suit, however, is that the company's product will be

¹²⁷ For a discussion of the uncertainty of language and other uncertainties inherent in patent law, see Feldman, *supra* note 96.

¹²⁸ Feldman, *supra* note 96; Mark A. Lemley, *Distinguishing Lost Profits from Reasonable Royalties*, 51 WM. & MARY L. REV. 655, 664 (2009); Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2003 (2007).

simply shut down. Although the Supreme Court recently ruled that patent holders are not automatically entitled to an injunction after proving that someone is infringing the patent, nevertheless, injunctions are still frequently granted.¹²⁹ Having to shut down the entire product could be devastating, even if the product could eventually be reconfigured to avoid infringing. In short, the problem is not just the high costs of getting an answer but also the risks associated with getting an adverse answer. These are not bets that the typical commercial actor wants to accept, who may therefore want to make the problem go away by settlement.

Such tremendously high transaction costs have the effect of incentivizing suboptimal behavior from all actors. For example, patent holders have an incentive to assert marginal patents in the hopes of getting the company to settle for an amount less than it would cost the company to litigate. With insufficient validity and valuation information, some patent holders asserting valid patents that are being infringed may seek damages far in excess of the patent's value. Conversely, operating companies have an incentive to utilize the power that comes from their ability to employ better legal counsel in these complex interactions, even when the operating companies suspect that they are infringing a valid patent.

Even perfectly honest and diligent operating companies are caught in the maelstrom. With the millions of active patents on record, each of which may have dozens or even hundreds of claims, combined with the difficulty of knowing how they will be

¹²⁹ eBay v. MercExchange L.L.C., 547 U.S. 388 (2006); Lily Lim & Sarah E. Craven, *Injunctions Enjoined; Remedies Restructured*, 25 SANTA CLARA COMPUTER & HIGH TECH. L.J. 787, 798 (2009) (saying that injunctions are still granted in 72% of cases after eBay v. MercExchange).

interpreted, it is impossible to know with certainty that one's product will not infringe someone else's patent claims. In this environment, lawyers may encourage company executives not to search, to avoid the greater damages available from willful infringement. In a similar vein, patent counsel will instruct inventors not to search extensively for prior art, because a patent applicant need only disclose prior art that the applicant knows about.

In short, the patent system is plagued by a vast supply of patents, many of which may be quite weak. The present system for granting patents does not overtly consider the overall patent supply in a given technical area in granting new patents.¹³⁰ In addition, regardless of whether the patent is weak or strong, the range of each patent cannot be determined without a large investment of time and effort, and any pre-litigation predictions about the scope of a patent may prove incredibly wrong.

Mass aggregation will not alter the high transaction costs of obtaining an answer within the system, the vast supply of patents, or the incentive structures of the parties involved. These characteristics will persist regardless of whether the patent holder is an original inventor, a traditional troll, or a mass aggregator.

One can think of mass aggregation as the patent system on speed.¹³¹ More bargaining and swordplay will take place among a company producing products, its competitors, and non-practicing patent holders, but some of the parties involved in this

¹³⁰ The technical distance between issued patent claims in crowded fields may be lessened, leading to patents with narrower claims, but the Patent Office has yet to declare that it is even "difficult" to obtain a new patent in any given area, and no one has demonstrated that new patents in crowded areas are impossible to obtain. The patent prosecution system essentially functions as a bargaining process between the Patent Office and its "customers," the patent applicants.

¹³¹ More than six years ago, at the very beginning of its massive patent acquisitions, Intellectual Ventures was described as "a troll on steroids." Lisa Lerer, "Going Once," *Corporate Counsel*, Nov. 1, 2005; <http://www.law.com/jsp/cc/PubArticleFriendlyCC.jsp?id=900005439584>.

gamesmanship will be larger and have more sophisticated weaponry. Trolling activity will occur, but it will be carried out more often and by larger trolling entities. Without changing the basic incentive structures of the patent system, mass aggregation will be no better than the current patent system at rewarding the deserving inventor and greasing the wheels of innovation while protecting diligent producing companies. One could even argue that the mass aggregation activities will act as a multiplier for the worst aspects of the present system – deserving but low capitalized patentees will be further marginalized while product companies are forced to license greater numbers of marginal patents.

If mass aggregation were merely no better than the current system, one might not be too concerned over about its appearance. Unfortunately however, while mass aggregators are likely to create harms to innovation as a whole.

A. A Tax on Production

In our vastly imperfect patent system in which transaction costs are substantial, information is difficult to obtain and is asymmetrically distributed, and the cost of testing the validity of a patent may be quite high, mass aggregators will be able to extract value through patents regardless of the strength of the patents they are asserting. The value ultimately would have to come through payments from manufacturers of current products, and the process would serve as a tax on current products.

Such a tax on current on production may serve to decrease future production and or operate as a cost passed on to consumers. When costs of production increase, potential manufacturers must factor that cost into the decision of whether to produce. As the price

point for rational production rises, fewer products will cross the threshold at which it is worth introducing the product.

From another perspective, the tax on production also could end up reducing R&D. Although tracing spending decisions in a single firm is complex, at a very simple level, a company that must spend more on current production costs will have less to spend on research and development of new products. Many companies have historically funded their R&D from the same source that pays the company's licenses.¹³²

From either perspective, a tax on production is likely to have the effect of reducing genuine product innovation. Thus, the products and services that are being created with the introduction of the market for patent monetization may not be ones that society wishes to encourage.

B. Opportunities for Anticompetitive Conduct

Certain characteristics of the market for patent monetization make it an excellent vehicle for anticompetitive conduct. The market for patent monetization itself may never be truly competitive. For example, the market for patent monetization may have first mover advantages. As many scholars have noted, larger groupings of patents may be more useful than smaller groupings or individual patents.¹³³ With mass aggregation, early players in the field may become large enough to ensure success before others enter the

¹³² This has led to what is sometimes known as “the two-dollar swing.” For every royalty dollar exchanged from between a company and a competitor, a two-dollar differential is created between them if inbound and outbound licensing fees are tied to R&D funding.

¹³³ See, Peter N. Detkin, 6 J. Marshall Rev. Intell. Prop. L. 636, 641 (2007).

market, not because the early players are better at evaluating patents and choosing good ones, but because of their sheer size combined with tactics used to intimidate. This phenomenon could create entry barriers such that those who come later will never be able to compete on even terms.¹³⁴

Antitrust law established some time ago that being big is not bad, in and of itself. Certain tactics, however, are troubling when taken by those who have the power to hurt consumer welfare in a particular market by adversely affect prices, quantities, qualities, or varieties of goods and services that are currently or potentially available.¹³⁵ In other words, big is not bad; it is what you do with your girth that matters. If entry barriers do exist, early entrants into the mass aggregation game may have the girth and the tactics that would raise antitrust concerns.

We note, as an initial point, that the extensive ties among the various mass aggregators should raise questions and concerns about horizontal collusion. The complexity and opaque nature of the corporate structures make it extremely difficult to track the interactions and connect the dots.

For example, consider the scenario suggested above in which the mass aggregator negotiates a license from a troublesome troll on behalf of its members. Under certain circumstances, one might consider this to be an example of horizontal collusion in which competitor producing companies join together to force a lower price from a supplier.

¹³⁴ Patents are unique goods somewhat like fine art. It is for similar reasons that the Getty Museum announced early on that it would stick to acquisition in certain key areas and would provide grants and subsidies to other museums. Otherwise, the best art would always be acquired by the Getty given the size of its endowment.

¹³⁵ See, Antitrust Guidelines for the Licensing of Intellectual Property, DOJ/FTC Report, April 6, 1995, p.2, accessible at <http://www.justice.gov/atr/public/guidelines/0558.htm>.

In the largely unregulated environment of this early market, there do seem to be opportunities for horizontal interactions that could raise questions about anticompetitive behavior. For example, one prospective investor in mass aggregators reported interesting interactions between two aggregators, Acacia and RPX.¹³⁶ According to the investor, the two entities have a monthly call in which Acacia describes the producers they are in the process of targeting and the patents they will assert against the producers. Acacia then names a price for the patents in question, and RPX purchases the patents if it wishes.

Most likely, the interactions constitute nothing more than innocent, periodic sales discussions. Under other circumstances, however, the interactions could constitute horizontal collusion. This emerging market environment is reminiscent of the Wild West, in which the early settlers created and enforced their own norms, and there was little scrutiny or law enforcement from sovereign entities.

D. Raising Rivals' Costs¹³⁷

The current market for patent monetization offers other opportunities for anticompetitive behavior. For example, wouldn't it be nice if you could create a tax on production for your competitor while keeping your own costs low? The market for patent monetization may be a good vehicle for that. Characteristics such as entry barriers to keep new entrants out, the inability to quickly resolve issues of patent validity and application, as well as the extensive bargaining inherent in the patent system provide

¹³⁶ See email from investor on file with authors.

¹³⁷ Thomas G. Krattenmaker & Steven C. Salop, Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price, 96 Yale L.J. 209 (1986).

ample opportunities for using the market for patent monetization to raise rivals' costs. A tax on production is even more troubling when administered through a market concentrated in the hands of a few actors.

Consider the recent lament of Google's chief legal officer, David Drummond. Google purchased a smartphone operating system called Android to compete with Apple's iPhone and smartphone devices that use Microsoft's Windows system. As sales of Android increased, Apple and Microsoft joined a coalition of companies to purchase a set of patents from recently acquired Novell. Apple and Microsoft then teamed up in a second coalition to purchase a large set of telecommunications patents at auction from recently bankrupt Nortel Networks. Drummond complained that the group entered the Nortel auction, sending the bidding far above expected value, in order to prevent Google from purchasing the patents and to assert those patents against makers of Google's Android phone in an effort to raise the cost of the phone.¹³⁸ As Drummond commented so colorfully, "Microsoft and Apple have always been at each other's throats, so when they get in bed together you have to start wondering what's going on."¹³⁹

The Justice Department, expressing concerns over the competitive effects of the group's purchase of the Novell patents, insisted on certain requirements, including that 1) Microsoft sell back the Novell patents and maintain only a license; and 2) all of the

¹³⁸ See David Drummond, The Official Google Blog, When Patents Attack Android, (Aug. 4, 2011), <http://googleblog.blogspot.com/2011/08/when-patents-attack-android.html> (describing Microsoft's effort in demanding \$15 in licensing fees per phone from various Android phone makers) (citing Miyoung Kim, Thomson Reuters, *Microsoft Wants Samsung to Pay Smartphone License: Report* (Chris Lewis ed., July 6, 2011), <http://www.reuters.com/article/2011/07/06/us-samsung-microsoft-idUSTRE7651DB20110706>).

¹³⁹ Drummond, *supra* note 138.

patents acquired must be available for open source licensing.¹⁴⁰ These requirements are cold comfort to Google, which is still subject to efforts by members of the group to assert the Nortel patents acquired in various ways against makers of Android phones.¹⁴¹

Apparently as a response to the Nortel auction, Google purchased Motorola Mobility, a mobile telecom arm of Motorola, for \$12.5 billion in August 2011.¹⁴² The acquisition gives Google access to some 17,000 patents owned by Motorola Mobility.¹⁴³

Concerns about the possibility of raising rivals' costs are particularly troubling in light of the privateering behavior that is prominent for most of the mass aggregators. Tom Ewing has described extensively how privateering through third parties can be used to damage one's competitors or advance one's competitive position through a variety of techniques. These include privateering activities that bring patent lawsuits aimed at scaring off a competitor's customers and suppliers; patent suits timed to lower the stock price before an initial public offering or a merger so that the potential investor buys the stock for less, and privateering activity in a particular nascent field, which is designed to

¹⁴⁰ U.S. Dept. of Justice, CPTN Holdings LLC and Novell Inc. Change Deal in Order to Address Department of Justice's Open Source Concerns, Justice News (Apr. 20, 2011), <http://www.justice.gov/opa/pr/2011/April/11-at-491.html>.

¹⁴¹ See, e.g., Miyoung Kim, Microsoft Wants Samsung to Pay Smartphone License: Report, Reuters (Jul. 6, 2011, 6:24 AM), <http://www.reuters.com/article/2011/07/06/us-samsung-microsoft-idUSTRE7651DB20110706>; Microsoft Sues Motorola over Android, Guardian Technology Blog (Oct. 4, 2010), <http://www.guardian.co.uk/technology/2010/oct/04/microsoft-motorola-android-patent-lawsuit>. Of major concern is the fact that a large number of the Nortel patents are related to emerging industry standards for fourth-generation (4G) wireless technology. See, e.g., Jamie Sturgeon, *Financial Post, Five Years that Changed Everything* (Aug. 20, 2011), <http://business.financialpost.com/2011/08/20/five-years-that-changed-everything/>. Not surprisingly, Google appears to be purchasing patents en masse themselves, recently acquiring a portfolio of more than 1000 patents from International Business Machines. See Amir Efrati, Wall Street Journal, *Google Buys IBM Patents* (July 29, 2011), <http://online.wsj.com/article/SB10001424053111904800304576475663046346104.html>.

¹⁴² See, Press Release, *Google to Acquire Motorola Mobility*, Aug. 15, 2011; located at: <http://investor.google.com/releases/2011/0815.html>.

¹⁴³ Victoria Slind-Flor, *Google, Nokia, Easyjet, 'Snakeman,' Yahoo!, UMG: Intellectual Property*, Bloomberg, Oct. 4, 2011; located at: <http://www.bloomberg.com/news/2011-10-04/google-nokia-easyjet-yahoo-umg-intellectual-property.html>.

distract young management and drive risk capital towards particular companies.¹⁴⁴ If particular mass aggregators accumulate sufficient power, then those who are “in the gang” have a tremendously powerful club that could be used for anticompetitive activity.

Society should be particularly concerned about privateering activity aimed at next-generation technologies that threaten to unseat an entrenched monopolist.¹⁴⁵ If participants in mass aggregators are well-entrenched monopolists, for example, patent lawsuits could conceivably be used to burden next-generation technology or soften them up for easier purchase. Imagine if Microsoft had purchased Sergei Brin and Larry Page’s little search engine long before Google became a competitive threat.

The purchase of the Novell and Nortel patents has focused attention on activities in the smartphone sector. In general, however, purchasing patents to assert against a competitor, either directly or through third-party proxies, in an effort to raise the competitor’s costs is a type of behavior that can be difficult to detect and even harder to deter. A targeted competitor could try to assert private antitrust claims or claims of patent misuse.¹⁴⁶ Current doctrinal trends in both areas, however, make these claims difficult to pursue. The Federal Circuit is hostile to claims of patent misuse and rarely finds such claims to be valid.¹⁴⁷ Antitrust claims are even more difficult to pursue.¹⁴⁸ In general, one

¹⁴⁴ See Ewing *supra* note 54

¹⁴⁵ See Robin C. Feldman, *Defensive Leveraging in Antitrust*, 87 GEORGETOWN L.J. 2079 (1999).

¹⁴⁶ Particular to smartphones, patents that are essential to communication standards have been subject to high antitrust scrutiny. Members of standards bodies are required to license their patents on Fair Reasonable and Non-Discriminatory (FRAND) terms. However, due to the massive number of patents held by different members and the effect of cross-licensing on license rates, it is nearly impossible to find similarly-situated licensees in order to determine whether offered license rates are anti-competitive. *Qualcomm v. Broadcom* is a singular case finding an antitrust violation because the licensor had blatantly offered reduced license rates for standard-essential patents to customers.

¹⁴⁷ See, e.g., Robin C. Feldman, *The Insufficiency of Antitrust Analysis for Patent Misuse*, 55 HASTINGS L.J. 399 (2003) (arguing the fundamental limitation of antitrust analysis to evaluate abusive licensing

has a right to petition the government, even if the successful petition would have an anticompetitive impact, and the definition of government include includes a petition to a court.¹⁴⁹ There is an exception in which one can base an antitrust claim on court filings that constitute sham litigation. This requires a finding that from both an objective and subjective perspective, the claim filed was a sham.¹⁵⁰ Given the uncertainties in patent interpretation, however, it is extremely difficult to establish that assertion of a patent against a product is a sham, particularly given the high burden of proof that some courts have required in sham litigation cases. In sum, it is tremendously difficult to succeed in a private antitrust claim.¹⁵¹

Competition authorities, such as the Federal Trade Commission, the Department of Justice, and state antitrust agencies might choose to file antitrust claims. These tend to be slow moving processes, however, and these agencies would face the same hurdles as private antitrust claimants. By the time the competition authorities detect the behavior, and the courts understand it enough to make room in the doctrines, early movers may have reaped gathered their rewards and moved on to other tactics. In short, the type of tactics available to mass aggregators, given characteristics of patents and the structure of

practices). The Federal Circuit most recently re-affirmed the strict limits of the patent misuse doctrine in *Princo Corp. v. ITC*, 616 F.3d 1318, 1329 (Fed. Cir. 2010) (“Recognizing the narrow scope of the doctrine, we have emphasized that the defense of patent misuse is not available to a presumptive infringer simply because a patentee engages in some kind of wrongful commercial conduct, even conduct that may have anticompetitive effects.”).

¹⁴⁸ FELDMAN, *supra* note 111, at Chapter 5.

¹⁴⁹ The Noerr-Pennington doctrine is rooted in the constitutional right to political speech and allows citizens to petition the government without fear of antitrust liability. *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961); *United Mine Workers v. Pennington*, 381 U.S. 657 (1965).

¹⁵⁰ *Prof'l Real Estate Investors v. Columbia Pictures Indus.*, 508 U.S. 49, 60-61 (1993) (articulating the present standard for sham litigation).

¹⁵¹ FELDMAN, *supra* note 111, at Chapter 5.

the market for patent monetization may raise troubling concerns of anticompetitive effects.

E. Other Troubling Market Behavior

Although details of mass aggregator behaviors are difficult to come by or to confirm, one fascinating episode involving RPX gives a rare inside view of the types of tactics that mass aggregators have used. In January of 2011, the owner of a Russian technology company contacted the FBI to suggest that criminal charges be filed against RPX for allegedly engaging in extortion, mail or wire fraud, and racketeering. The letter, signed by the CEO and Chief Intellectual Property Counsel of Kaspersky Labs was reproduced on the GameTime IP Blog on May 31, 2011.

The letter described the following allegations. According to Mr. Kaspersky, a non-practicing entity named IPAT sued his company and 23 other companies for patent infringement. Eventually, 22 of the companies signed confidential settlement agreements and were released from the suit, and eleven of those became members of RPX.

According to the letter, Kaspersky's company was approached by RPX as well in an email explaining that RPX had acquired the patents in the lawsuit and could release Kaspersky from the suit in exchange for a 3-year membership in RPX at a cost of \$160,000 a year. With such a membership, Kaspersky Labs would be released from the suit and would have the benefit of not being sued in connection with any of the other RPX patents.

Mr. Kaspersky says that in the three months following the initial contact, he received additional letters and emails from RPX, noting that other defendants in the suit had joined RPX and been released, that the deadline for joining would soon expire, and that if Kaspersky were to ever sue other members of RPX, RPX would make patents from its pool available to that member to defend or counterclaim against Kaspersky. Finally, Mr. Kaspersky received an email from RPX explaining that even though RPX had pledged not to use its patents offensively, RPX could sell its patents to third parties to be used against non-RPX members. (In such a scenario, of course, the few holdout companies would become the only targets.) The message also suggested that companies who did not contribute financially to the settlement would harm their relationship with industry peers.

As far as we have been able to determine, the FBI has taken no action in response to the Kaspersky letter. Nevertheless, it is not hard to understand how a foreign entity might interpret this type of patent interaction as extortion. The episode also highlights the need for better definition of what is legal and what is not in this arena. For example, when would behavior analogous to what is described in the Kaspersky letter cross the line into anticompetitive behavior? Could the facts ever be such that it would constitute an attempt to monopolize a market by organizing a cartel? In asking that question, what market should we be analyzing, the market for the product covered by the patent, the market for patents in this product arena, or the market for monetization of patents as a whole?

In addition, when should the legal rules require disclosure of a relationship between parties, either for conflict of interest rules, corporate disclosures, antitrust, or agency purposes? What would constitute a sufficient relationship between the parties to

require disclosure? For example, if a mass aggregator's members include all but one player in a particular arena, and the mass aggregator transfers the patent to a third party giving the third party the right to sue only those who are not members of the mass aggregator, is the third party acting as an agent of the aggregator when it sues the only holdout? These are the types of questions that current law is ill-equipped to handle.

F. Odd characteristics of the inputs supplying the market

In addition to harm from a tax on current production and opportunities for anticompetitive conduct, the new market for patent monetization has other characteristics that raise the specter of harm to innovation and innovation industries. Consider first the odd characteristics of the inputs that are supplying the market for patent monetization.

One can think of mass aggregators as any other type of market producer. Aggregators have a product to sell, and they must purchase inputs to create the product. In this case, the sole raw materials are patents and patent applications.

Purchasing patents as raw inputs for something other than a manufactured product differs from the traditional assumptions about the role of patents in the economy.¹⁵² The primary role of patents as it has developed in the modern economy is to allow an inventor or the inventor's licensee to have market space for bringing a new product to market from the invention by excluding others from making, using, or selling the invention.¹⁵³ As

¹⁵² Of course, some historical inventors such as the Wright Brothers were primarily interested in licensing their patents rather than making products, but such inventors were outliers.

¹⁵³ We note that we are describing the role of patents in the modern economy, rather than the description necessarily promulgated in judicial decisions.

described above, however, aggregators make almost no effort themselves to cross the divide from patent to product.

Patents are also created or acquired for defensive purposes. Once a company secures patent rights to an invention, that company frequently tries to patent possible variants of the invention, to keep competitors from making a close substitute for the product.¹⁵⁴ Patents also flow out of R&D activity as academic institutions or commercial R&D departments search for innovations, patent them, and then put them aside, hoping to find a licensee who will develop the product or to turn to them when the company is ready to pursue new products.

Once inventions have been created and patented, they traditionally change hands for a limited set of reasons, most of them related to product development. Companies producing a product may acquire patents or license them to create what is known as “freedom to operate”, that is the ability to produce a product without concerns of infringement suits.¹⁵⁵ Along these lines, patents may also be acquired to create a robust portfolio so that competitors who might be tempted to file an infringement claim will be deterred or rebuffed by the number of patents that the company can threaten in return. Companies also find themselves with a varied patent portfolio through mergers and acquisitions, which may bring patents that range far from the company’s core products.

¹⁵⁴ This is called “defensive patenting”, in which patent continuations (procedural revisions of patent applications) are used to create new claims for different variants. For a discussion of use of defensive patents as bargaining chips in cross-licensing, see William E. Kovacic, *Intellectual Property Policy and Competition Policy*, 66 N.Y.U. ANN. SURV. AM. L. 421 (2011).

¹⁵⁵ Analysis of freedom to operate is complicated by the sheer volume of issued patents as well as the possibility of overlapping rights, termed by Carl Shapiro as a “patent thicket.” See Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools and Standard Setting*, in 1 INNOVATION POLICY AND THE ECONOMY 119 (Adam B. Jaffe, Josh Lerner & Scott Stern eds., 2001).

Thus, the patents that are now being acquired as inputs for mass aggregators traditionally have been created and exchanged for other reasons, if at all.¹⁵⁶ Whether patented offensively or defensively, inventions have typically been created and acquired either in hopes of creating a commercial product or for reasons closely related to a commercial product. These inputs, very few of which would ever generate revenue, are now being monetized and traded independent of underlying products.

In the words of the patent system, we are finding a “new use” for these old products as inputs for the mass aggregator product. The new use, however, is not necessarily a good use, from society’s perspective, although it might potentially generate huge returns for certain investors and early adopters.

C. Odd Characteristics of the Aggregator Business

Although there are many ways to conceptualize the product that mass aggregators offer, consider the following perspective: What is the mechanism by which mass aggregators expect to generate income to share with their investors? Some investors receive the benefit of being able to use the portfolio as a shield from infringement litigation, but not all investors need this particular benefit. Investors such as the William & Flora Hewlett Charitable Foundation and the World Bank, for example, are unlikely to worry much about patent infringement lawsuits. All investors, however, are promised a share of the profits from the mass aggregator’s core business. That business involves gaining a return by monetizing patents.

¹⁵⁶ We note that small trolls prototyped the process of altering the uses of patents many years ago.

In order to gain a direct return from monetizing patents, the return must be collected from revenues on existing manufactured products. Someone, someplace has to make something that is at least sort of like the patented invention. There is simply no other way to make a penny from a patent.¹⁵⁷ In other words, the aggregator's level of return depends on how successful it is at extracting value from existing products or products close to the production pipeline. In a world of perfect information (especially regarding valuation), low transaction costs, and a smoothly functioning patent system, one might have fewer concerns about any negative effects on the innovation system. Aggregators would simply play the role of ensuring that the proper value is shared with the proper inventor, an activity that might well stimulate future innovation.¹⁵⁸

In the real world of patents, however, the picture is quite different. As described above, the system is not effectively structured to filter out or even retard weak or misapplied patents, and the costs and risks of litigating an infringement suit may far exceed the costs of paying off a claimant. Thus, the result of having a market for patent monetization is not simply that the forgotten inventor triumphs; patents are monetized regardless of whether they are strong or weak.¹⁵⁹

¹⁵⁷ A technology license and/or know how would be a different matter.

¹⁵⁸ Although even in a perfect system, one would presumably want to balance the royalties that are going to old technology (up to 26 years old) as opposed to rewards/royalties going to newer technologies. Most new patents expire 20 years, more or less, after their filing, but damages can be collected up to six years after infringement has occurred.

¹⁵⁹ Indeed, one of the benefits of the aggregator model is that it achieves the scale of the licensing operations of the large operating companies, such as IBM, where at least a few patents from a portfolio of 30,000 active patents is almost certain to be at least arguably infringed by any licensing target – and there are few reasons why the prospective licensee should review the 30,000 active patents and develop strategies for arguing invalidity and/or non-infringement – which is precisely the game played by operating companies when approached by a small portfolio comprising just a few patents.

To put it bluntly, the successful aggregator is likely the one that frightens the greatest number of companies in the most terrifying way. In fact, a potentially successful approach might be to use a large number of patents of questionable value acquired cheaply and mixed in with a handful of strong ones.¹⁶⁰ When the aggregator knocks on the door, manufacturers may capitulate simply because the aggregator is the biggest, baddest guy on the block.¹⁶¹

This may not be the type of market that society wishes to encourage. At the very least, society might want to curtail certain behaviors, if not forbid them altogether. How can one do this, however, without causing even greater harms to the innovation system? How does one water the garden so that only the beneficial plants grow while the weeds wither?

E. Economic Stability

Although the possibilities are more remote, one should also consider the potential negative effects for the broader economy. Patents are linked to innovation in general, which is likely to affect all sectors. Thus, the effects of the market for patent monetization could be felt broadly across the economy.

¹⁶⁰ This approach, of course, arguably mimics the approach target for a generation by the large operating companies in conducting their licensing operations. This is precisely the reason behind legendary licensing procedures such as the ruler metric in which each side literally measures its stack of patents against the other side's stack.

¹⁶¹ A process frequently described at IP symposiums as “a value proposition.”

One reference point could be the dot.com crash of the early 2000s, which had a negative impact on the economy as a whole.¹⁶² The run-up to the dot.com crash featured large amounts of capital flowing into early stage and speculative technology companies, mostly related to the Internet. Many of the companies had yet to develop a product or to turn a profit; this was the era of “vaporware”, in which companies could receive funding, go public, and sell products on little more than the promise of what they might be able to develop. Everyone agreed that some companies would surely strike it rich in the Internet game, and investors were willing to bid up prices on shares of entities with little proven value in the hopes that some of them would prove to be gold. The “irrational exuberance” that drove investment to a frenzied level eventually burst, creating a recession in the technology industry with ripple effects across the broader economy.¹⁶³

Not all of the companies that failed during the technology crash were weaklings. Many of these companies had good business models, and the myriad of ways in which the Internet could be utilized offered legitimate opportunities for economic exploitation. Others have successfully resurrected the business models for certain companies that failed when the technology bubble burst in subsequent years. Nevertheless, the sector could not absorb all the capital that was being thrown at it indiscriminately, and this, among other problems, led to the crash.

¹⁶² Roger Lowenstein thoroughly examines the fervor that led to the crash in ROGER LOWENSTEIN, *ORIGINS OF THE CRASH: THE GREAT BUBBLE AND IT'S UNDOING*, PENGUIN (2004). Discussing the cavalier attitude of analysis and use of the rising market as a benchmark for investment, Lowenstein offers the following quote from Morgan Stanley's Mary Meeker: “We have only one response to the word ‘valuation’ these days: ‘Bull Market.’” *Id.* at 111.

¹⁶³ This term, attributed to Alan Greenspan, is now used to describe a heightened state of speculative fervor. *See*, Chairman Alan Greenspan, Chairman, Fed. Res. Bd., *The Challenge of Central Banking in a Democratic Society*, Remarks at the Annual Dinner and Francis Boyer Lecture of the American Enterprise Institute for Public Policy Research (Dec. 5, 1996), *available at* <http://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm>.

Although there are certainly differences between the emergence of the market for patent monetization and the run-up to the 2002 technology crash, the similarities are interesting. Most patents traditionally have proven to have little value. The promise of a new use for this intangible and abstract asset is already driving up prices for patents and could conceivably move prices above a rational level. This is particularly true given the venture capital like returns being promised to some investors, returns that are difficult to duplicate elsewhere in the current economy. One might reasonably wonder how much capital can be absorbed into the market for intellectual property rights over a period of time without the investment activity itself causing a local economic deformation.

Specifically, if prices are driven to an irrationally high level, there could easily be a correction, one whose trajectory might be as steep as the run-up. With a sector crash, less aggressive aggregators could fail along with more aggressive ones, and publicly traded aggregators could fail along with the private ones.

Normally, if some people are foolish enough to bid prices up to an irrational level, society would be unconcerned when those investments fail. We may care more, however, if the crash is such that it impacts the economy as a whole or impairs our ability to innovate in an economy largely based on innovation. By analogy, the government would allow Border's Books to fail, for example, but would be more concerned with a threat of extensive bank failures.

Although the chances of a wild patent ride followed by a broad economic crash are remote, the scenario is worth contemplating, nevertheless. To the extent that patents

affect all sectors of the economy, one should be mindful of potentially destabilizing events.

F. “To Serve Man”¹⁶⁴

Mass aggregator activity may have additional effects that will reduce or delay the benefits of innovation. In particular, the value proposition put to inventors from 400 universities worldwide and presumably a comparable number of independent inventors may have been something along the lines that this process would facilitate the commercial development of their inventions. But there is a stark difference between just patenting an invention and building a technical prototype, developing related know how, and creating a market for the invention. To obtain a patent one does not need to have a working product. Indeed, a genuinely working product could be years away. For example, Chester Carlson’s patented experiments with dry chemical photocopying machines from 1936 until he produced the first commercially successful Xerox machine in the early 1950s. His experience provides a cautionary example of the difference between a patent and working product.¹⁶⁵ Funding an aggregator at best funds the Chester Carlson’s of the world in 1936 and not the Haloid Xerox Company of the 1950s. Chester Carlson’s work on developing a photocopier would have likely stopped once an

¹⁶⁴ Damon Knight, “To Serve Man,” (1950); immortalized as a Twilight Zone episode in 1962; <http://www.youtube.com/watch?v=m5tcgO0Ujqw>.

¹⁶⁵ Carlson’s first patent US Patent 2,221,776 claimed priority from an application filed in 1937. This initial patent was followed up by some 40 other patentable inventions over nearly a 35-year period by Carlson alone – apart from the additional inventive contributions made by Xerox employees working to elaborate Carlson’s initial inventive vision.

aggregator had purchased his first few patents.¹⁶⁶ The aggregator would then wait for someone else to take up the ideas later – maybe as much as 26 years later - and then request royalties. If Chester Carlson turned out to be the truly lone pioneer, then a practical photocopier would never have been produced, at least not on any sort of speedy timeframe.

The situation of dropped inventions has already happened before. The Fax machine, which was all the rage in the ‘80s and ‘90s was invented in the 1881 but then largely dropped with the exception of improvements for the transmission of photographs by news agencies.¹⁶⁷ Even if a Chester Carlson sells his first patent to an aggregator and continues working, his further work will not be guided by the real world fits and starts associated with making an early prototype and early commercial activity but will much more likely comprise a series of blue sky thought experiments disconnected from the real world. In short, the later patents will almost certainly be of lower value in this scenario because they build only on the shoulders of the first patent and not real experiences.¹⁶⁸

It is possible, of course, that buying up all the early Chester Carlson patents will encourage more Chester Carlson’s. For this to happen, however, Chester Carlson and many folks like him will have to believe that he got a good deal in selling his patents to

¹⁶⁶ And even if Carlson’s work continued, it would likely lack the practical groundings that come from placing products in the stream of commerce and then observing how to make them faster, cheaper, and better.

¹⁶⁷ US Patent 2,292,387 to Hedy Lamarr and George Antheil which reported the invention of spread spectrum communication and frequency hopping had nearly expired as a patent before the US Navy began preliminary work in developing a prototype. Lamarr and Antheil never sought to create a company around their invention, and the inaction resembled that of a patent aggregator. This communications technique underlies all modern communications techniques, however. For full story, see Robin C. Feldman, *Rethinking Patent Law* (Forthcoming Harvard University Press, May 2012).

¹⁶⁸ Carlson’s story is not all that different from other disruptive innovators, including but not limited to television pioneer Philo Farnsworth and the Wright Brothers.

the mass aggregator. While he might appreciate the cash that he was paid for the patents, Chester like many inventors, probably wants to see his technology developed. Society's interests would parallel Chester's in this regard. Innovations that are delayed or never produced can create little benefit for society as a whole, although such delays may possibly benefit incumbent producers since they can extend the lifetimes for what would otherwise be obsolete products. The imperfections of the patent system suggest that many of these patents would not have made it to market. Some percentage of those, however, would have stayed in someone's drawer and had little effect on the innovation system at all, other than complicating patent searches. With mass aggregators, the products go into the drawer and the patents are used against current producers who might otherwise have continued on their way unimpeded.

If the inventors who have sold to a modern mass aggregator had aspirations that the aggregator would facilitate the commercial exploitation of their inventions, they are likely to be sadly mistaken. The largest of the mass aggregators, Intellectual Ventures, has reportedly built only one prototype from all the inventions that it has purchased, and this one prototype was for an improved nuclear reactor that was co-invented by the company's founder Nathan Myhrvold.¹⁶⁹

Thus, while aggregators may defend their activities on the grounds that they are promoting innovation and the great rewards that society will receive through new

¹⁶⁹ TerraPower "was formed from an effort initiated in 2007 by Nathan Myhrvold's company Intellectual Ventures." Who We Are, Intellectual Ventures, <http://www.terrapower.com/WhoWeAre.aspx>. TerraPower has raised \$35 million. <http://www.nytimes.com/2010/06/15/business/energy-environment/15nuke.html> Compared to the \$5 billion Intellectual Ventures has ready to invest, TerraPower's \$35 million is less than 1% of Intellectual Ventures' total funding.

products, the reality may be that many fewer inventions ever become products and many more will be placed on a greatly extended trajectory. For inventors who hope that that mass aggregators will turn their patents into real products and the world will finally appreciate their innovations, the scenario is somewhat reminiscent of an old Twilight zone episode entitled, “To Serve Man.” In the episode, friendly aliens arrive and offer humanity a panacea from all the woes that beset it. The aliens even take some lucky humans back to their home planet who are so happy that they never return. Only later does humanity discover that the aliens’ book “To Serve Man” is not a gospel of benevolent duty but a cookbook.

G. Ancillary Implications

In addition to the economic concerns raised above, the accumulation of power may be troubling in light of the potential for mischief in ancillary avenues. For example, in March of 2011, a company called Mission Abstract Data LLC sued more than 100 radio industry defendants from different parts of the country for patent infringement.¹⁷⁰ Intellectual Ventures previously owned the underlying patents, and the pathway from Intellectual Ventures to Mission Abstract Data’s present owner Digimedia Holdings LLC is unclear. Similarly, the New York Times Company filed a declaratory judgment action¹⁷¹ against Webvention, LLC, which obtained its patents by merger with

¹⁷⁰ The case names 116 defendants, although many may be corporately related to each other. *See Mission Abstract Data LLC v. Beasley Broadcasting Group, Inc. et al.*, 1:11-cv-00176-LPS, (D. Del. 2011).

¹⁷¹ *The New York Times Company v. Webvention Holdings LLC*, 1:11-cv-00634-GMS (D. Del, 2011).

Intellectual Ventures' Ferrara Ethereal LLC in Nov. 2009.¹⁷² *The New York Times* lawsuit ended in less than a month after the Times obtained a covenant not to sue from Webvention on undisclosed terms.¹⁷³ Another set of patents formerly owned by an Intellectual Ventures shell company, and now owned by Patent Harbor LLC, have been used in infringement lawsuits brought against 39 entertainment companies, including DreamWorks Animation SKG, Inc.¹⁷⁴ Ironically, Myhrvold is a board member of DreamWorks Animation SKG, Inc.¹⁷⁵

Most of these litigations are in early stages and very little information is available. The action of suing a large number of media producers, however, sparked our imagination. We offer the following scenario as a hypothetical and note that there is no indication of such intent on the part of any of the companies.

Imagine a mass aggregator that is unhappy with the press coverage it is receiving or would like to encourage media support for a particular issue. With this in mind, the mass aggregator sues a large number of players in a particular sector of the media based on patents that the aggregator has recently acquired. When the parties sit down to negotiate, the mass aggregator notes obliquely that, "it is so odd to be on opposite sides of the table when we have so many issues of mutual interest."¹⁷⁶ The conversation could

¹⁷² See, Assignment Records for "[Ferrara Ethereal LLC](http://assignments.uspto.gov/assignments/?db=pat)," available at <http://assignments.uspto.gov/assignments/?db=pat>.

¹⁷³ See, Notice Of Dismissal Without Prejudice Against Webvention, *The New York Times Company v. Webvention Holdings LLC*, 1:11-cv-00634-GMS (D. Del, 2011), filed Aug. 17, 2011.

¹⁷⁴ *Patent Harbor, LLC v. Dreamworks Animation SKG, Inc.*, 6:11-cv-00229-LED (ED. Tex 2011) (The complaint was filed on May 5, 2011 and involves two patents formerly owned by Gisel Assets KG, LLC, a company that appears to be an IV shell company.

¹⁷⁵ See, Form 8-K, *DreamWorks Animation SKG, Inc.*, April 21, 2011, available at: <http://www.sec.gov/Archives/edgar/data/1297401/000119312511110112/d8k.htm>.

¹⁷⁶ This lawsuit ironically came to light about the same time that National Public Radio, not a party to the lawsuit, produced a program called "When Patents Attack," that was highly critical of Intellectual Ventures.

then touch lightly on coverage that would portray the mass aggregator in a better light or political initiatives that the media outlets might be interested in investigating or supporting. Across time as the parties work together on various issues, the settlement costs seem to move into a range that is remarkably comfortable for the media stations.¹⁷⁷

Players in the patent world are quite adept at oblique conversations. In many circumstances, a patent holder may wish to demand that a producer pay for a license without taking the risk that the producer will file a declaratory judgment action to have the patent invalidated. Declaratory Judgment actions can only be filed if there is a sufficient threat of litigation.¹⁷⁸ To avoid crossing the threshold, patent holders may send correspondence referring to areas of mutual interest or issues that might be worth pursuing. This has been described as the Dance of the Sugar Plum Letter,¹⁷⁹ and the media scenario above is simply a variation on the theme.

The type of behavior suggested in the media hypothetical would be quite difficult to identify or to address. The hypothetical is a reminder that massive power can be troubling, not just for its potential economic effects, but for its potential effects in other dimensions as well.

III. A Few Observations

¹⁷⁷ One could imagine an alternative scenario in which a new line of business as an “influence peddler.” An aggregator sues X number of media outlets for patent infringement. As a settlement, the aggregator then seeks some defined measure of editorial control. Having obtained a slice of editorial control over a huge swath of the media, the aggregator then sells this editorial control (or slices of it) to the highest bidder.

¹⁷⁸ See *MedImmune, Inc. v. Genentech, Inc.* 549 U.S. 118, 127 (2007) (requiring “a substantial controversy, between parties having adverse legal interests, of sufficient immediacy and reality to warrant the issuance of a declaratory judgment”).

¹⁷⁹ See FELDMAN, *supra* note 111, at Chapter 2. Intellectual Ventures use of the phrase “invention gaps” provides an excellent example of such communications.

The market for monetized patents, which has been created through patent aggregators, should be understood as a massive, rapidly growing, and essentially unregulated market. It has grown up quietly, remaining under the radar as early entrants have garnered power and strength. Like any market, however, it should be monitored and regulated, with sovereign entities giving some thought to whether aspects of the market should be encouraged, tolerated, deterred, or outright forbidden.

A. Regulatory Oversight

Competition authorities, such as the Federal Trade Commission and the Department of Justice, are in the best position to address the activities of mass aggregators and the market for patent monetization. Establishing the rules for this market, however, will require a certain amount of reorientation in the conceptualization of innovation markets.

The most natural FTC/DOJ regulatory structures for analyzing the activities of mass aggregators are those in the context of licensing and acquisition activity.¹⁸⁰ In licensing, the Agencies follow a set of basic principles that are applied to intellectual property licensing in general. These principles are that intellectual property is comparable to any other form of property and standard antitrust analysis applies, that intellectual

¹⁸⁰ Three agency reports are particularly useful for understanding the current agency approach. The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition, FTC Report, March 2011, accessible at www.ftc.gov/os/2011/03/110307patentreport.pdf. [Hereinafter “Evolving Marketplace”]; Horizontal Merger Guidelines, DOJ/FTC Report, August 19, 2010, accessible at www.ftc.gov/os/2010/08/100819hmg.pdf. [Hereinafter “Merger Guidelines”]; and Antitrust Guidelines for the Licensing of Intellectual Property, DOJ/FTC Report, April 6, 1995, accessible at <http://www.justice.gov/atr/public/guidelines/0558.htm>. [Hereinafter “Antitrust Licensing”].

property is not presumed to create market power, and that intellectual property licensing is generally procompetitive.¹⁸¹ The Agencies believe that problems arise, however, when a licensing arrangement harms competition among entities that would have been actual or likely competitors in the absence of the arrangement.

In analyzing intellectual property licensing agreements, the Agencies consider three basic markets that can be affected by anticompetitive licensing restrictions: goods markets, technology markets, and innovation markets. Goods markets, of course, are those related to final or intermediate goods and their close substitutes. When rights to intellectual property rights are marketed separately from the products in which they are used, the Agencies use technology markets to analyze competitive effects.¹⁸² Technology markets consist of the Intellectual Property that is licensed and its close substitutes.

Finally, licensing arrangements may have competitive effects on innovation that cannot be adequately addressed through goods or technology markets. Thus, the Agencies have identified a third type of market, innovation markets, which is defined as the research and development directed to particular new or improved goods or processes.¹⁸³

The Agencies do have particular guidelines for certain types of arrangements that may be relevant to the activities of mass aggregators, including guidelines on cross-licensing, pooling arrangements, and grant backs. Grant backs are licensing arrangements

¹⁸¹ See, Antitrust Licensing, *supra* note 180, at 2.

¹⁸² *Id.* at 8.

¹⁸³ *Id.* at 10-11.

in which the license holder agrees to give the patent holder rights to any improvements on the invention.

In the case of pooling, for example, the guidelines note that exclusion from pooling arrangements can be anticompetitive if a) excluded firms can't effectively compete in the relevant market and b) pool participants collectively poses market power in the relevant market.¹⁸⁴ Similarly, grant backs may be found anticompetitive if they substantially reduce the licensee's incentives to engage in research and development.¹⁸⁵ One should note, however, that these concerns are analyzed against a backdrop of the Agencies' perspective that licensing is generally precompetitive.

In a 2011 report on The Evolving Intellectual Property Marketplace, the Federal Trade Commission took notice of increasing activity by what it called, "patent assertion entities" or "PAEs" in the information technology industry.¹⁸⁶ In particular, the Agency noted the following:

Some argue that PAEs encourage innovation by compensating inventors, but this argument ignores the fact that invention is only the first step in a long process of innovation. Even if PAEs arguably encourage invention, they can deter innovation by raising costs and risks without making a technological contribution.¹⁸⁷

The report, however, notes the difficulty in distinguishing patent transactions that harm innovation from those that promote it, and rather than recommending antitrust action proposes various improvements in patent notice and remedies.

¹⁸⁴ *Id.* at 28.

¹⁸⁵ *Id.* at 30.

¹⁸⁶ See *Evolving Marketplace*, *supra* note 180, at 8.

¹⁸⁷ *Id.* at 9.

Although these are important considerations, a full analysis of the impact of mass aggregators requires identification of a different market. Even when Agencies think about separately marketed intellectual property rights or innovation markets, those categories are grounded in their relationship to a particular product market. Moreover, market power is measured in relationship to that product market.

When patent rights float unmoored from any underlying products on a large-scale, widespread manner such that they are traded and arbitrated, that activity begins to resemble a market of its own. This is the market we have been describing as the market for patent monetization. Viewed from this perspective, an entity could acquire market power in the market for patent monetization without necessarily holding a monopoly in any individual product markets.¹⁸⁸ Considering only product, technology, and innovation markets could miss a fair amount of worrisome activity.

Another way to think about floating patent rights and anticompetitive effects is the following: One may not need a monopoly on patents in a particular product market to create negative effects in that market. Perhaps one simply needs a large enough group of all kinds of patents in combination with tough tactics or even just a reputation for tough tactics.

Moreover, the Agencies may need to reconsider the general principle that licensing is pro-competitive. In the context of a market for intellectual property rights floating separately from invention or production, that general principle may be less applicable. One has to take a much harder look at licensing when it has become such an

¹⁸⁸ See, the discussion above about IV and the Ocean Tomo patent auctions, for example.

expansive activity that is separated so far from the activity of introducing new technologies.

The same types of considerations should be used for reorienting the Agencies' approach to acquisition of intellectual property rights. Section 7 of the Clayton Act requires that certain proposed acquisitions of assets be reported, which is interpreted as including patents. The FTC and DOJ may conduct a preliminary antitrust evaluation and decide whether to take enforcement action.¹⁸⁹

Certain transfers of intellectual property rights and transaction that grant an exclusive license are analyzed by applying the principles and standards used to analyze mergers.¹⁹⁰ Such transactions may have the effect of removing a participant from the market, in the same manner as a traditional merger would.¹⁹¹

In any merger enforcement action, the Agencies will normally identify one or more relevant markets in which the merger may substantially lessen competition. Such market definitions focus solely on demand substitution factors, which are customers' ability and willingness to substitute away from one product to another. Again, the traditional Agency focus in this inquiry would be on the market for the products that can be made by the patents that are being purchased, but not on the market for patent monetization itself. Such an inquiry would miss a wealth of potential anticompetitive conduct and consequences.

¹⁸⁹ For a description of notice and filing requirements, see <http://www.ftc.gov/bc/hsr/introguides/introguides.shtm>.

¹⁹⁰ *Id.* at 31.

¹⁹¹ Such transactions may be assessed under §7 of the Clayton Act, §§1 and 2 of the Sherman Act, and §5 of the FTC Act.

In short, competition agencies should think about a market composed of floating intellectual property rights as its own market, in order to capture the potential for harm and mischief. Courts also must be willing to understand and approach patent markets in this manner. Although the focus initially may be on patents in this market, it is possible over time it will become clear that the market for all intellectual property rights, including trade secrets and know-how as well as patents, should be considered.

Courts, agencies and government entities must also engage in doctrinal changes that will allow for the curative power of sunshine. As we encountered in trying to track the acquisition and litigation activity of the mass aggregators, many of the current doctrines in corporation and agency law allow aggregators to shield their identities from government view and from their competitors who may be subsequently blindsided in litigation. The targets themselves may be unable to determine who the aggregator is, sometimes even when the parties are in litigation. The less appealing behavior described above is much easier to carry out in secrecy than in the light of day. We should consider changes that will bring such activities to light, making them easier to monitor and evaluate their individual and cumulative effects.

B. Let the Sun Shine In

If society wishes to impose regulation on the market for patent monetization, regulators will need a method of monitoring behavior. One might also wish to make activity transparent to members of the public, who can be useful for alerting regulators to potential problems. In particular, where the law anticipates that society's interests may align with members of the public, lawmakers may choose to make information publicly

available or to provide avenues for members of the public to advance actions on their own behalf.

Current laws provide limited opportunities for identifying and tracking activity in this market and many opportunities for hiding. Mass aggregators have sufficient access to capital and legal resources to take advantage of all opportunities offered and to prepare for a host of contingencies. Among other things, the mass aggregators have constructed elaborate corporate networks that narrowly confine the legal claims that can be brought against them, providing a firewall that protects the larger organization.

Consider Searete LLC, a fairly well-known Intellectual Ventures shell company¹⁹² that exemplifies the complicated ownership and management structures employed by mass aggregators.¹⁹³ Searete has the type of complex and carefully woven legal structure that would make a defense lawyer beam with joy. It is a Delaware limited liability company with a presence in Nevada.¹⁹⁴ Searete's official manager in Nevada is "Nevada Licensing Manager, LLC," which is a Nevada corporation.¹⁹⁵ Nevada Licensing Manager's own manager is "Nevada Assets, LLC," which is a Delaware Company.¹⁹⁶ At some point, Nevada Assets, LLC presumably connects with Intellectual Ventures, LLC or one of Intellectual Ventures' many investment funds. However, the connection might be

¹⁹² John Letzing, *Microsoft's Big Brains Spill Into Patent Firm*, MarketWatch, Feb. 4, 2009, <http://www.marketwatch.com/story/microsofts-big-brains-spill-over-patent>

¹⁹³ Intellectual Ventures parks many of its "inventioning" patent applications in Searete. *Id.*

¹⁹⁴ Delaware Corporations file 3776428 shows that Searete LLC was formed on March 12, 2004; <https://delecorp.delaware.gov/tin/controller> and Nevada Corporations records show that Searete LLC, Nevada Corporate Id NV20041267664 was registered in Nevada on Nov. 15, 2004; <http://nvsos.gov/sosentitysearch/CorpSearch.aspx>.

¹⁹⁵ *Id.*, and Nevada Corporation records show that Nevada Licensing Manager, Nevada Corporate ID NV20041268216 was created on Nov. 15, 2004 <http://nvsos.gov/sosentitysearch/CorpSearch.aspx>.

¹⁹⁶ Delaware Corporations file 3881571 shows that Nevada Assets, LLC was also created on Nov. 15, 2004; <https://delecorp.delaware.gov/tin/controller>.

little more than the ownership of shares, effectively rendering almost no one responsible for its actions.

The other 1,300 or more shell companies in Intellectual Ventures' organization exist in similarly obscure networks with the "parent" company, structures permitted by the corporate laws in many states. In short, the ownership and management structures for mass aggregators is often elaborate, and state corporation laws complicate the process of finding out who actually controls any given limited liability company.¹⁹⁷

The ownership and control picture may not become much clearer even after a litigation has been filed, not only for the public but for the litigants as well. Rule 7.1 of the Federal Rules of Civil Procedure requires all nongovernmental litigants to disclose their parent corporation and any publicly held corporation owning 10% or more of their stock.¹⁹⁸ The law's purpose is not to discover litigation motives and corporate activities, but to assist judges in disqualifying themselves due to conflicts of interest.¹⁹⁹ The Rule's focus on parents and public companies, however, limits its effectiveness in disclosing the parties ultimately behind patent monetization activity, especially with mass aggregators that are not public companies.

¹⁹⁷ Nevada, for example, is known for being particularly respectful of such information. Some but far from all foreign corporations laws are also protective of such information while other countries require full disclosure.

¹⁹⁸ See, *Federal Rules of Civil Procedure* (2010), http://www.law.cornell.edu/rules/frcp/Rule7_1.htm. (The rule's first paragraph states:

Rule 7.1. Disclosure Statement

(a) Who Must File; Contents.

A nongovernmental corporate party must file 2 copies of a disclosure statement that:

(1) identifies any parent corporation and any publicly held corporation owning 10% or more of its stock; or
(2) states that there is no such corporation.).

¹⁹⁹ See, Glen Weissenberger, *Federal Civil Procedure Litigation Manual* (Matthew Bender, 2010).

Individual courts may impose additional disclosure rules that may bring further information to light. Some jurisdictions use variations of the rule. For example, the Central District of California employs the variation, known as a “Certification as to Interested Parties,” that requires disclosure of a much broader range of parties. The variation states:

L.R. 7.1-1 Certification as to Interested Parties.¹ To enable the Court to evaluate possible disqualification or recusal, counsel for all non-governmental parties shall file with their first appearance an original and two copies of a Notice of Interested Parties which shall list all persons, associations of persons, firms, partnerships and corporations (including parent corporations clearly identified as such) which may have a pecuniary interest in the outcome of the case, including any insurance carrier which may be liable in whole or in part (directly or indirectly) for a judgment that may be entered in the action or for the cost of defense. Counsel shall be under a continuing obligation to file an amended certification if any material change occurs in the status of interested parties as, for example, through merger or acquisition, or change in carrier which may be liable for any part of a judgment.²⁰⁰

²⁰⁰ See

<http://www.cacd.uscourts.gov/cacd/locrules.nsf/a224d2a6f8771599882567cc005e9d79/ddb6b1163100e00388256dc5005973ca?OpenDocument>.

Some other courts use a similarly worded variation requiring that at a first appearance in any proceeding with the court, the party must file a “Certification of Interested Entities or Persons”:

(1) The Certification must disclose any persons, associations of persons, firms, partnerships, corporations (including parent corporations), or other entities other than the parties themselves known by the party to have either: (i) a financial interest (of any kind) in the subject matter in controversy or in a party to the proceeding; or (ii) any other kind of interest that could be substantially affected by the outcome of the proceeding.

(2) For purposes of this Rule, the terms “proceeding” and “financial interest” shall have the meaning assigned by 28 U.S.C. 455 (d)(1), (3) and (4), respectively.

(3) If a party has no disclosure to make pursuant to subparagraph (b)(1), that party must make a certification stating that no such interest is known other than that of the named parties to the action.²⁰¹

²⁰¹ See, US District Court, Northern District of California, Civil Local Rule 3.16, CIV 27, <http://www.cand.uscourts.gov/filelibrary/3/Civ6-11.pdf>; these rules refer to definitions from 28 U.S.C. 455, Disqualification of justice, judge, or magistrate judge under sections (d)(1), (3), and (4) which contain the following definitions:

(d) For the purposes of this section the following words or phrases shall have the meaning indicated:
(1) “proceeding” includes pretrial, trial, appellate review, or other stages of litigation;
(3) “fiduciary” includes such relationships as executor, administrator, trustee, and guardian;
(4) “financial interest” means ownership of a legal or equitable interest, however small, or a relationship as director, adviser, or other active participant in the affairs of a party, except that:
(i) Ownership in a mutual or common investment fund that holds securities is not a “financial interest” in such securities unless the judge participates in the management of the fund;

These additional disclosure rules of either variety have proven somewhat more effective in revealing the parties ultimately behind various Non-Practicing Entity patent litigations. For example, Intellectual Ventures' involvement in several cases was not initially disclosed under Rule 7.1 but was later disclosed under the local rule variations, including one case in which a major portion of its investors were disclosed.²⁰²

For example, in *Oasis Research, LLC v. Adrive, et al.*²⁰³, the Rule 7.1 disclosure by Oasis Research stated that the company had no parent corporation and that no publicly held corporation owned 10% or more of its stock.²⁰⁴ But seven months later in complying with a local rule similar to one of the variations above, Oasis Research disclosed that "Intellectual Ventures Computing Platforce Assets LLC" had a financial interest in the outcome of the case.²⁰⁵ Intellectual Ventures co-founder Peter Detkin later conceded during a radio interview that Intellectual Ventures Computing Platforce Assets, LLC was an Intellectual Ventures shell company.²⁰⁶

(ii) An office in an educational, religious, charitable, fraternal, or civic organization is not a "financial interest" in securities held by the organization;

(iii) The proprietary interest of a policyholder in a mutual insurance company, of a depositor in a mutual savings association, or a similar proprietary interest, is a "financial interest" in the organization only if the outcome of the proceeding could substantially affect the value of the interest;

(iv) Ownership of government securities is a "financial interest" in the issuer only if the outcome of the proceeding could substantially affect the value of the securities.

See, <http://codes.lp.findlaw.com/uscode/28/I/21/455>.

²⁰² See, Defendants' Certificate Of Interested Entities Or Persons Pursuant To Civil Local Rule 3-16 and F.R.C.P. 7.1, *Xilinx v. Invention Investment Fund I LP et al.*, 11-cv-0671 (N.D. Cal. 2011), May 16, 2011.

²⁰³ *Oasis Research, LLC v. Adrive, et al.*, 4:10-cv-00435-MHS –ALM (ED Tex, 2010); the case is still ongoing.

²⁰⁴ Rule 7.1 Disclosure Statement, *Oasis Research, LLC v. Adrive, et al.*, 4:10-cv-00435-MHS –ALM (ED Tex, 2010), filed Aug. 31, 2010.

²⁰⁵ Plaintiff Oasis Research, LLC's Disclosure Pursuant To The Court's Order To Meet, Report And Appear At Scheduling Conference, *Oasis Research, LLC v. Adrive, et al.*, 4:10-cv-00435-MHS –ALM (ED Tex, 2010), filed March 10, 2011.

²⁰⁶ See, "When Patents Attack," National Public Radio, July 22, 2011, http://www.thisamericanlife.org/play_full.php?play=441.

Similarly, in *Xilinx v. Invention Investment Fund I LP et al.*,²⁰⁷ the plaintiff Xilinx filed a declaratory judgment action in California against six Intellectual Ventures affiliated companies shortly after Intellectual Ventures affiliated companies sued three Xilinx competitors in Delaware.²⁰⁸ Xilinx and Intellectual Ventures had been in licensing discussions prior to the filing of the lawsuit,²⁰⁹ Xilinx is also apparently an investor in Intellectual Ventures.²¹⁰

In the California lawsuit, Intellectual Ventures and Xilinx engaged in a battle of motions concerning whether the disclosure could be filed under seal or for attorneys' eyes only, rather than publicly. As the parties' motions began flying across the judge's bench, the judge recused herself, presumably because she became aware of the identities of the interested parties, and a new judge was appointed.²¹¹ The new judge accepted Xilinx' arguments and the Intellectual Ventures parties disclosed publicly a list of investors including more than 50 entities, such as the World Bank, the Mayo Clinic, The William and Flora Hewlett Foundation, and several universities.²¹²

²⁰⁷ *Xilinx v. Invention Investment Fund I LP et al.*, 11-cv-0671 (N.D. Cal. 2011); the case is still ongoing.

²⁰⁸ *Intellectual Ventures I LLC v. Altera Corp. et al.*, 1:10-cv-01065-LPS (D. Del. 2010); the case is still ongoing.

²⁰⁹ See, *Intellectual Ventures motion to dismiss* at page 6, line 9 and page 9, lines 11-15, *Xilinx v. Invention Investment Fund I LP et al.*, 11-cv-0671 (N.D. Cal. 2011)(Intellectual Ventures describes its negotiations with Xilinx as "routine patent licensing discussions" but concedes that after two months of negotiations, the parties had not even agreed to a non-disclosure agreement that would "allow more detailed technical discussions to proceed.").

²¹⁰ Of the four Intellectual Ventures funds listed in Intellectual Ventures' disclosure of interested parties, Xilinx is listed as a potentially interested party in two of the funds; see, Defendants' Certificate Of Interested Entities Or Persons Pursuant To Civil Local Rule 3-16 and F.R.C.P. 7.1, *Xilinx v. Invention Investment Fund I LP et al.*, 11-cv-0671 (N.D. Cal. 2011), May 16, 2011.

²¹¹ Judge Koh recused herself from the case on April 28, 2011, *Xilinx v. Invention Investment Fund I LP et al.*, 11-CV-00671-LHK (ND Cal. 2011). Judge Koh became a Superior Court judge in 2008 and a federal judge as recently as 2010; prior to that she was in private practice. By contrast, Judge Illston who was assigned to the case after Judge Koh has been a federal judge since 1995.

²¹² Defendants' Certificate Of Interested Entities Or Persons Pursuant To Civil Local Rule 3-16 and F.R.C.P. 7.1, *Xilinx v. Invention Investment Fund I LP et al.*, 11-cv-0671 (N.D. Cal. 2011), May 16, 2011.

In *Xilinx*, the court has now dismissed several of the Intellectual Ventures parties on the grounds that they were not the legal owners for some of the patents specifically mentioned in Xilinx’s declaratory judgment action.²¹³ The legal owners for these patents include some seven other Intellectual Ventures shell companies,²¹⁴ and the California judge has transferred this portion of the lawsuit to Delaware.²¹⁵ So, the network of affiliated shell companies seems to have served Intellectual Ventures well in this case because its network was so vast that Xilinx did not identify the formal owner among a group of extremely related parties, allowing transfer of portions of the case to Delaware. The case is a cautionary tale for any company targeted by a mass aggregator that one should pay careful attention to who actually owns the patents being pushed in a licensing campaign, as opposed to who is doing the licensing negotiation or who may ultimately receive the funds from the licensing or litigation. Thus, for example, when a licensing target decides to file a declaratory judgment action based on a campaign launched by Chilly Willy Licensing, LLC for the benefit of Chilly Willy Licensing Partners LP, the target should make sure to name Chilly Willy Patent Holding LLC in the complaint and be grateful that the corporate names include their function in the overall enterprise – otherwise, Chilly Willy Patent Holding will file its own complaint in the jurisdiction of its choosing while Chilly Willy Licensing seeks dismissal from the declaratory judgment action on grounds that it is not the patent owner.

²¹³ See, Order Re: Motions To Enjoin, Dismiss And/Or Transfer, *Xilinx v. Invention Investment Fund I LP et al.*, 11-cv-0671 (N.D. Cal. 2011), July 27, 2011.

²¹⁴ Defendants’ Motion To Dismiss Xilinx’s Complaint For Declaratory Judgment, *Xilinx v. Invention Investment Fund I LP et al.*, 11-cv-0671 (N.D. Cal. 2011), April 11, 2011 (the chart on page 12, lines 6-11 identifies the owners of the patents subject to declaratory judgment as Intellectual Ventures affiliates Detelle Relay KG, LLC, Roldan Block NY, LLC, Latrosse Technologies, LLC, TR Technologies Foundation LLC, Taichi Holdings, LLC, Noregin Assets N.V., LLC, and Intellectual Venture Funding LLC.

²¹⁵ *Supra* note 30.

Outside the disclosure requirements designed for judicial recusal, entities have considerable ability to camouflage their ownership. Most states offer corporate forms that allow companies to shield the identity of their owners, typically in the context of a limited liability company (“LLC”) format. In some states, such as Delaware, no public information is provided regarding the owners of such companies. Other states, such as Nevada, allow limited public disclosure of an LLC’s management, although the disclosure is also too limited to identify the ultimate owners or the names of real persons responsible for their day-to-day affairs.

For private actors in patent litigation against mass aggregator shell companies, finding the identity of the owners or investors is only one hurdle; holding the owners or investors liable for the activities of the shell corporation is far more difficult. Under most circumstances, a corporation is regarded as a legal entity separate and distinct from its stockholders, officers, directors, and investors. When a corporation is used by another entity to perpetrate fraud, circumvent a statute, or accomplish some other wrongful or inequitable purpose, however, a court may pierce the corporate veil and treat the corporation’s acts as if they were done by those controlling the corporation.²¹⁶

In battles over piercing the corporate veil, the structures being adopted by some of the mass aggregators may be helpful in protecting them. A key predicate in piercing the corporate veil concerns the presence or absence of distinct legal entities.²¹⁷ Some mass aggregators, such as Intellectual Ventures and Transpacific, are structured so that each layer is a distinct legal entity, providing a measure of protection. Courts are extremely

²¹⁶ See e.g., *Communist Party v. 522 Valencia, Inc.*, 35 Cal. App. 4th 980, 993 (1995).

²¹⁷ See, *Nelson v. Adams USA, Inc.*, 529 U.S. 460, 470-471 (2000).

reluctant to pierce the corporate veil in most circumstances,²¹⁸ and the carefully crafted legal structures will make it particularly difficult to disregard the corporate form.

Piercing the corporate veil is less of a direct issue for antitrust actions brought by either private plaintiffs or competition authorities. Under those circumstances, the mass aggregator and its shell company or third-party privateer could conceivably be charged with concerted action in violation of the antitrust laws.²¹⁹ At the very least, however, such actions would require alteration of the definition of relevant markets, as well as an enhanced system for monitoring relevant behavior.

C. Removing the Teeth of the Tiger

We cannot close the article without highlighting the systemic problems giving rise to the phenomenon of mass aggregation. One must keep in mind the peculiar elements that have brought us to the point at which large, respectable companies feel the need to sign onto patent defense funds. These are the same elements that make mass aggregation activity so potentially troubling.

Troll behavior, whether small or aggregated, is fueled by a patent system that lacks a cost-effective method of quickly resolving validity and infringement questions.

There are better uses for federal courts than using them as forums for conducting

²¹⁸ See, e.g., *Sonora Diamond Corp. v. Superior Court*, 83 Cal. App. 4th 523, 539 (2000) (noting that alter ego [piercing the corporate veil] is an extreme remedy, sparingly used); accord *Dole Food Co. v. Patrickson*, 538 U.S. 468, 475 (2003).

²¹⁹ One might also try to establish that third-party privateers were acting as agents on behalf of the mass aggregator. See Restatement of the Law (Third) Section 1 (focusing, on whether the purported agent acts on the principal's behalf and subject to the principal's control).

licensing negotiations. A copious supply of patents that are only lightly tested at the time of the grant enhances the problem. As long as insufficient information, uncertainty, and high transaction costs reign, troll activity will continue to flourish. We should focus our efforts not only on limiting troubling behavior among mass aggregators but also on making trolling a less lucrative endeavor in the first instance.

Conclusion

The patent world is poised to undergo a change of astounding proportions. A system that has operated such that the vast majority of patents bring little or no return is shifting to a system in which a substantial number of patents will become traded and monetized, largely through a system of mass aggregators. The giants among us are undoubtedly changing the patent world. The question that remains is how.

One could argue that mass aggregators could potentially have positive effects. Mass aggregators might potentially ensure that the forgotten inventor receives the compensation due or could serve as a middleman to connect inventors with capital and expertise. Mass aggregators could also serve as litigation defense funds, providing Just-in-Time patenting and creating a powerful weapon stream that will deter troublesome infringement suits. Mass aggregators may also reduce troll activity by soaking up the supply of monetizable patents. The question, however, is whether the cure is worse than the disease.

In particular, the same market characteristics that have led to the rise of troll activity are likely to plague the activities of mass aggregators as well. Without changing

the basic incentive structures of the patent system, mass aggregation will be no better than the current patent system at rewarding the deserving inventor and greasing the wheels of innovation while protecting diligent producing companies. Moreover, the activity of mass aggregation brings its own potential harms. Rather than contributing technological innovations, mass aggregators operate as a tax on current production, burdening existing products and potentially reducing future innovation and productivity. In addition, characteristics of the market for patent monetization make it an excellent vehicle for anticompetitive behavior, including horizontal collusion and single firm or multi-firm behavior that raises rivals' costs. Most important, the basic business model of mass aggregation is troubling. The successful aggregator is likely to be the one that frightens the greatest number of companies in the most terrifying way. This may not be an activity that society wants to encourage.

These and other concerns suggest that mass aggregators and the market for patent monetization should not be allowed to flourish unchecked. The burgeoning market must be properly monitored, regulated, and restricted so that the considerable risks associated with this activity may be fully contemplated and cabined.

Appendix A

Universities

- Alabama, University of
- Brigham Young University
- Bristol, University of
- British Columbia, University of
- Brunel University
- California Institute of Technology
- California, the Regents of the University of
- Campinas State University (Brazil)
- City University London
- Clemson University
- Connecticut, University of
- Darmstadt, Technical University of
- Duke University
- Florida Institute Of Technology
- Florida, University of
- Helsinki University of Technology

- Hiroshima University
- Hong Kong University
- Indian Institute of Technology - Bombay
- Kyushu University
- Manitoba, University of
- McMaster University
- Monash University
- New Jersey Institute of Technology
- New Mexico, University of
- New South Wales, University of
- North Carolina at Charlotte, University of
- Oklahoma, University of
- Ottawa, University of
- Oulu, University of
- Polytechnic University
- Ramot at Tel Aviv University
- Rhode Island University
- Rochester Institute Of Technology
- Rochester, University of
- Rutgers University
- Singapore, National University of
- Southern Mississippi, University of
- Stevens Institute Of Technology

- Stirling, University Of
- Strathclyde, University of
- Texas, University System, the Board Of Regents
- University of California San Diego
- Western Sydney, University of
- Westminster, University of

Appendix B: Investors

Investors in Various Intellectual Ventures Funds as Reported by Intellectual Ventures
in *Xilinx v. Intellectual Ventures Investment Fund I, L.P. et al.* on May 16, 2011

No.	Investor	Invention Investment Fund I	Invention Investment Fund II	Intellectual Ventures I	Intellectual Ventures II	Notes
Operating Company						
1.	Adobe Systems Incorporated		Financial Interest			
2.	Amazon.com NV Investment Holdings Inc., an affiliate of Amazon.com, Inc.	Financial Interest	Financial Interest			
3.	American Express Travel Related Services Company, Inc.	Financial Interest				
4.	Apple, Inc.	Financial Interest	Financial Interest		Financial Interest	
5.	Cisco Systems, Inc.		Financial Interest		Financial Interest	
6.	eBay Inc.	Financial Interest	Financial Interest			
7.	Google Inc.	Financial				

		Interest				
8.	Intel Corporation	Financial Interest	Financial Interest			
9.	Microsoft Corporation	Financial Interest	Financial Interest	Financial Interest	Financial Interest	
10.	Nokia Corporation	Financial Interest	Financial Interest	Financial Interest	Financial Interest	
11.	Nvidia International Holdings, Inc., an affiliate of Nvidia Corporation	Financial Interest	Financial Interest			
12.	SAP America, Inc.	Financial Interest	Financial Interest			
13.	Sony Corporation	Financial Interest	Financial Interest	Financial Interest	Financial Interest	
14.	Verizon Corporate Services Group Inc.		Financial Interest		Financial Interest	
15.	Xilinx, Inc.	Financial Interest	Financial Interest			
16.	Yahoo! Inc.	Financial Interest	Financial Interest			
Investment Fund						
17.	Allen SBH Investments LLC	Financial		Financial		Entity related to the Allen &

	Interest		Interest		Company LLC
18. Charles River Ventures	Financial Interest	Financial Interest	Financial Interest	Financial Interest	
19. Commonfund Capital Venture Partners VII, L.P.	Financial Interest		Financial Interest		Verne Sedlacek is president & CEO
20. Flag Capital		Financial Interest		Financial Interest	Diana H. Frazier and Peter Lawrence co-founded Flag
21. JP Morgan Chase Bank, N.A., as trustee for White Plaza Group Trust	Financial Interest		Financial Interest		It is not clear who are the beneficiaries of the White Plaza Group Trust.
22. Certain funds of McKinsey and Company, Inc.		Financial Interest		Financial Interest	
23. Next Generation Partners V, L.P.	Financial Interest		Financial Interest		Appears to be related to Flag Capital
24. Sequoia Holdings, LLC	Financial Interest		Financial Interest		Sequoia was founded by David Beisner
25. Sohn Partners		Financial Interest		Financial Interest	

Foundation/Universities/Non-Profits

26.	Board of Regents of The University of Texas System		Financial Interest		Financial Interest	
27.	The Board of Trustees of the Leland Stanford Junior University		Financial Interest		Financial Interest	
28.	Brown University		Financial Interest		Financial Interest	
29.	Bush Foundation		Financial Interest		Financial Interest	The Archibald Bush Foundation was established by a former 3M chairman.
30.	Cornell University	Financial Interest	Financial Interest	Financial Interest	Financial Interest	
31.	Dore Capital, L.P., and affiliate of The Vanderbilt University	Financial Interest		Financial Interest		Dore appears to have a relationship with Apax Europe VI-A, L.P.
32.	The Flora Family Foundation		Financial Interest		Financial Interest	Founded by William Hewlett and Flora Hewlett.

33.	Grinnell College		Financial Interest		Financial Interest	
34.	Howard Hughes Medical Institute	Financial Interest	Financial Interest	Financial Interest	Financial Interest	
35.	International Bank for Reconstruction and Development, as trustee		Financial Interest		Financial Interest	The IBRD is one of five banks that comprise the World Bank
36.	Legacy Ventures		Financial Interest		Financial Interest	Russ Hall, Alan Marty, and Chris Eyre are the managing directors
37.	Mayo Clinic and Mayo Foundation Master Retirement Trust	Financial Interest	Financial Interest	Financial Interest	Financial Interest	
38.	Northwestern University	Financial Interest	Financial Interest	Financial Interest	Financial Interest	
39.	Reading Hospital		Financial Interest		Financial Interest	A non-profit hospital located in Reading, Penn.
40.	The Rockefeller Foundation	Financial Interest		Financial Interest		
41.	Skillman Foundation		Financial		Financial	A Detroit-based charity that

			Interest		Interest	includes a member of the Ford family in its board of directors.
42.	TIFF Private Equity Partners	Financial Interest	Financial Interest	Financial Interest	Financial Interest	TIFF: “The Investment Fund of Foundations,” is an investment cooperative.
43.	Trustees of the University of Pennsylvania		Financial Interest		Financial Interest	
44.	University of Southern California		Financial Interest		Financial Interest	
45.	University of Minnesota		Financial Interest		Financial Interest	
46.	The William and Flora Hewlett Foundation		Financial Interest		Financial Interest	
Individuals						
47.	Dobkin, Eric	Financial Interest	Financial Interest	Financial Interest	Financial Interest	Appears to be Eric Dobkin, an advisory director to Goldman Sachs and Chairman Emeritus of

						Global Equity Capital Markets
48.	Fields, Richard	Financial Interest	Financial Interest	Financial Interest	Financial Interest	This may be Richard Fields, Chairman of Coastal Development, LLC
49.	Gould, Paul	Financial Interest		Financial Interest		This may be Paul Gould, a director of Allen & Co.
50.	Holiber, Adam		Financial Interest		Financial Interest	The may be Adam Holiber, president of Summit Equity
51.	Peretsman, Nancy	Financial Interest	Financial Interest	Financial Interest	Financial Interest	This would appear to be Nancy Peretsman, a director of priceline.com and managing director at Allen & Company LLC