



Exploring the Boundaries of Patent Commercialization Models via Litigation

THOMAS L. EWING

DEPARTMENT OF TECHNOLOGY MANAGEMENT AND ECONOMICS

CHALMERS UNIVERSITY OF TECHNOLOGY

Gothenburg, Sweden 2022

www.chalmers.se

THESIS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Exploring the Boundaries of Patent Commercialization Models via Litigation

THOMAS L. EWING



Department of Technology Management and Economics

CHALMERS UNIVERSITY OF TECHNOLOGY

Gothenburg, Sweden 2022

Exploring the Boundaries of Patent Commercialization Models via Litigation
THOMAS EWING

© THOMAS EWING, 2022

ISBN 978-91-7905-656-8

Doktorsavhandlingar vid Chalmers Teknik högskola Ny serie nr 5122

ISSN 0346-718X

Industrial Management and Economics
Department of Technology Management and Economics
Chalmers University of Technology
SE-412 96 Gothenburg
Sweden
Telephone + 46 (0)31-772 1000

Cover Art: “Privateers, Mass Aggregators, and Trolls” by Norma Ewing and Thomas Ewing,
©2022 by Thomas Ewing, All Rights Reserved.

Printed by Chalmers Reproservice
Gothenburg, Sweden 2022

To Audrey and Norma

ABSTRACT

This thesis explores direct patent commercialization via patent assertion, particularly patent infringement litigation, a complex nonmarket activity whose successful undertaking requires knowledge, creativity, and financial resources, as well as a colorable infringement case. Despite these complexities, firms have increasingly employed patents as competitive tools via patent assertions, particularly in the United States. This thesis explores the business models that have been created to facilitate the direct monetization of patents. Since secrecy underpins the patent assertion strategies studied, the thesis is based on rich and enhanced secondary data. In particular, a data chaining technique has been developed to assemble relevant but disparate data into a larger coherent data set that is amenable to combination and pairing with other forms of relevant public data. This research has discovered that one particularly successful business model that employs a leveraging strategy, known as the non-practicing entity (“NPE”), has itself spawned at least two other business models, the highly capitalized “patent mass aggregator” and the “patent privateer.” The patent privateer, newly discovered in this research, is particularly interesting because it provides a way for firms to employ patents to attack competitors by forming specialized NPEs in a manner that essentially expands the boundaries of the firm. This research has also examined plaintiff firm management processes during litigations brought under leveraging and proprietary strategies, the two patent litigation strategies in which firms affirmatively initiate infringement litigations. In particular, this research investigates the commercial contexts that drive patent assertion strategies to explore the effective limits of the patent right in a litigation context. The investigation concludes that a variety of robust business models and management processes may be quite successful in extracting value from patents in the US.

Keywords: Intellectual property rights; patents; technology management; research and development; innovation economics; theory of the firm; strategy; value appropriation; licensing; governance.

Acknowledgements

As I complete my seventh academic degree, I find myself reflecting on those who have shaped my path over the years – in short, how did I get here? Novelist David Plante diverted me in the early 1980s from a career as a playwright after regaling me with frightening stories of hardship from his early life in the arts along with similar stories of his friend and fellow writer Jean Rhys, now considered one of the greatest English writers of the past century. Around the same time, scholar and public intellectual Germaine Greer, who was my professor for two literature courses, gave me confidence in my intellectual abilities for which I will always be thankful.

For sparking my interest in technology studies, I am grateful to the late Bob Nash at Vanderbilt University for exposing me to the possibilities of studying technology and its place in society. Prof. Nash and later colleagues at Washington University St. Louis, as well as colleagues from the NASA/Jet Propulsion Laboratory and Caltech, showed the possibilities for how technology could be studied, analyzed, and thoughtfully developed from a variety of points of view to optimize its net utility in society. My friend, Gerd Eng, knowing my interests in technology studies introduced me to Ove Granstrand, who has been a friend and colleague for nearly 30 years.

An interest in law was planted by Prof. Dan Mandelker at Washington University in St. Louis during a course in environmental law. After returning to NASA/JPL, I transferred to the general counsel's office at Caltech in a division that shepherded intellectual property at Caltech and NASA/JPL. This was my first exposure to intellectual property. My supervisors Edward Ansell, Elgin Edwards (later a US federal magistrate judge), and Luther Speck, NASA's first patent attorney, all encouraged me to pursue a legal career, which began a few years later at the University of California's Hasting College of Law in San Francisco. Towards the end of my studies, I took part in a nationwide moot court competition involving an intellectual property topic. The final round was held at the US Court of Appeals for the Federal Circuit, and the head judge for our panel was Chief Judge Giles Sutherland Rich, the founding judge of that court.

I spent the next several years as a working attorney, not only learning the craft of law but also coming to understand my clients' pains and aspirations. It became easier and easier to see the huge gulf that often arose between potential and reality in the intellectual property field. I was particularly struck by the brilliance of some of my clients, such as Netflix founder Reed Hastings who instantly grasped everything he needed to understand about intellectual property as his then small firm smashed the goliath Blockbuster Video, a strategy so well delivered that the two firms had no serious legal battles between them. Conversely, I was in Silicon Valley during the so-called Dotcom crash where fortunes vanished in a flash. I recall one client whose three founders went from a collective net worth of \$60 million to nothing in little more than a month.

Around this time, I also began my first IP strategy project, which was conducted for Microsoft co-founder Paul Allen, who at the time was the world's third wealthiest person.

The project was intended to answer a very specific question that had puzzled Allen. It was the sort of issue that puzzled many executives, but most technology executives do not have the fortunes available to investigate puzzling questions. This project re-invigorated my interests in technology studies and the possibilities for IP strategy, as a meeting point between business needs and opportunities and the abilities of intellectual assets to achieve or help achieve those goals for firms and society.

After a short stint in-house as a vice president of intellectual property at software firm, I began a career as a full-time IP strategist and rekindled my associations with various academics in the management and economics fields. I also began a decade-long association with the UN's World Intellectual Property Organization, which provided me with truly global insights into intellectual property issues. My work with WIPO included writing three IP training manuals: the WIPO Patent Guide (2006), the WIPO Patent Agent Training Manual (2016), and the WIPO Intellectual Property Valuation Manual (2016). These practical texts have been used by WIPO to train IP professionals from more than 80 countries; the Patent Guide has been translated into six languages.

So, in a nutshell, this is how I have arrived where I am today, leaving aside two stints in publishing, developing wargames for the US Joint Chiefs of Staff, and a few other things.

The pursuit of a PhD is a large and complex task. However, when pursuing it with the support of supervisors, colleagues, friends, and family it is also an enjoyable and highly rewarding undertaking. I have been fortunate to have such support, and I am deeply thankful for that. Ove Granstrand, who encouraged me to pursue a PhD and supervised me until his retirement has been of major importance for this thesis. Marcus Holgersson took over from Ove without missing a beat and has become a much-valued colleague. I will always remain grateful for their generosity in terms of ideas, knowledge, personal networks, and friendship.

I would also like to thank the conscientious members of my supervisory committee, comprising Joakim Björkdahl (examiner) and Marcus Holgersson (main supervisor). I must also thank Martin Wallin for his stalwart support and Fredrik Tell for the highly valuable and constructive feedback that he provided as opponent during my final seminar, leading to a substantial improvement before the final submission.

I am also very grateful for the time that my opponent Martin Bader and my grading committee, comprising Frantzeska Papadopoulou, Per Lundin, Olof Zaring, and Juho Lindman, have spent in reviewing my dissertation and related documents.

Over the years, I have received much valued assistance and collaborations with other academics, such as Robin Feldman, Colleen Chien, and Frank Tietze. Clas Wahlbin, who tragically passed away shortly after completing my licentiate thesis was also a great support. I am also sincerely grateful to the Industrial Management and Economics research group. Bengt Domeij has also been valuable colleague, especially with helping me understand some of the finer points of Swedish law. Discussions with Marcel Bogers and Sarah van Santen have also been highly rewarding. Similarly, the scholars assembled for an IP symposium by Robin Feldman, including Mark Lemley, Carl Shapiro, and John Allison, have also been

helpful in shaping my understanding of the potential of intellectual assets. I also give thanks to my current and previous colleagues at Chalmers who have supported and inspired me, including everyone in the “innovation corridor”. I should also thank numerous professional colleagues over the years from legendary Silicon Valley strategist David Hayes all the way to my current colleagues Henrik Olsson and Martin Jansson.

The administrative support at Chalmers, some of whom have now retired or moved to other positions, has always been careful, efficient, and friendly. I am especially thankful to a number of people, such as Jenny Taghvai, Carina Jøgevik, Eva Burford, Angelica Linnehav, Susanne Lidhammar, Satenik Atanesyan, and Yvonne Olausson.

I also want to express my gratitude to my friends and family, especially my artist mother Norma who has cheerfully drawn many IP-related illustrations for me over the years and my indomitable daughter Audrey. I would also like to thank my friends Gina Smith and Francois de Villiers for their support and helpful comments.

I plan to continue my studies in intellectual property into my sunset years, but I note that in my free time, I might just start drafting the plays that David Plante frightened me away from writing 40 years ago.

Thomas Ewing

Göteborg, April 2022

List of Appended Papers

This thesis is based on the work contained in the following papers:

Paper 1

The Giants Among Us. Co-authored with Robin Feldman. Published in The Stanford Technology Law Review, 2012, Vol. 1, pages 1-62.

Paper 2

Indirect Exploitation of Intellectual Property Rights by Corporations and Investors: IP Privateering & Modern Letters of Marque & Reprisal. Published in Hastings Science and Technology Law Journal, Vol. 4, pages 1-108.

Paper 3

Practical Considerations in the Indirect Deployment of Intellectual Property Rights by Corporations and Investors. Published in Hastings Science and Technology Law Journal, Vol. 4, pages 109-158.

Paper 4

The AAI 500 Expanded: The Effects of Patent Monetization Entities. Published in the UCLA Journal of Law & Technology, Vol. 17, No. 2, pages 1-107.

Paper 5

Patent Litigation Strategy: Battling on the Boundaries of the Firm. Submitted to Research-Technology Management.

List of Contents

	<u>Page</u>
1. Introduction	1
1.1 Setting the Scene	1
1.2 Litigation Driven Patent Commercialization	1
1.3 Purpose and Research Questions	3
1.4 Thesis overview	5
2. Frame of Reference	7
2.1 Overview	7
2.2 Patent Systems	11
2.3 Firms, Competition, and Patents	14
2.4 The Common Law Legal System	16
2.5 US Patent Law	18
2.6 US Patent Litigation	19
2.7 Important Trends in US Patent Assertion	20
3. Research Methodology	25
3.1 Data Sources and Data Collection	25
3.2 Legal and Historical Research Methods	27
3.3 Case Study Methodologies	28
3.4 Enhanced Methodologies – Chaining Techniques	29
3.5 Research Approach – Mixed methods	31
3.6 A Note on Interviews in Litigations Cases and Other Data Issues	32
4. Summaries of and Contributions to the Appended Papers	35
4.1 “The Giants Among Us” (Paper-1)	35
4.2 “Indirect Exploitation of Intellectual Property Rights By Corporations and Investors” (Paper-2)	35
4.3 “Practical Considerations in the Indirect Deployment of Intellectual Property Rights By Corporations and Investors” (Paper-3)	36
4.4 “The AIA 500 Expanded: The Effects Of Patent Monetization Entities” (Paper-4)	36
4.5 ““Patent Litigation Strategy: Battling on the Boundaries of the Firm” (Paper-5)	37
5. Main Results	39
5.1 The Variety of Patent Litigation Motives and Management Objectives	39
5.2 Growth of Patent Litigation via NPEs	41
5.3 Patent Mass Aggregators	43
5.4 Patent Privateers	45
6. Discussion	49
6.1 Firm Litigation Management	50
6.2 The Evolving NPE Business Model	52
6.3 The Patent Mass Aggregator – New Services to Established Firms	54
6.4 Patent Privateers – Chartered by Firms	55
6.5 Firm Capabilities & NPEs – “Follow the Money”	57
6.6 Capital Is Available for Building a Sustainable Patent Sale	

	and Licensing Market	59
6.7	The Possible Oversupply of Patents That Complicates the Ideas Market	60
7.	Conclusion, Implications, and Directions for Future Research	63
	REFERENCES	67

FIGURES AND TABLES

A. TABLES

Table-01 Research Questions	3
Table-02 Data Sources	26
Table-03 Methods and Techniques	31
Table-04 Exogenous and Endogenous Contextual Characteristics	40
Table-05 Litigations Studied & Their Characteristics	40

B. FIGURES

FIG. 01 The Varying Elements of Success and Failure in the Patent Market	8
FIG. 02 Graph of US granted patents year-by-year	18
FIG. 03 Document Chaining Techniques	30
FIG. 04 Functional Components of Conventional NPE	52
FIG. 05 Evolution of the NPE Business Model	53
FIG. 06 Functional Components of Patent Mass Aggregator	54
FIG. 07 Functional Components of Patent Privateer	55

1 Introduction

1.1 Setting the Scene

Intellectual assets, whether recognized in law or not, have existed for thousands of years in one form or another. They pre-date the foundation of modern capitalist economics by centuries. While the history of patents, one form of intellectual asset, can be traced to at least the Republic of Venice, patents of invention did not acquire economic significance until the Industrial Revolution. Moreover, the economic significance of patents has varied dramatically by time and place throughout this roughly 200-year period. In particular, the period from 1980 to the present, sometimes termed the “pro patent era” (Granstrand, 1999), marks a dramatic uptick in the commercial significance of patents, including larger and more frequent litigation victories, especially in the United States.

As we know, “patent commercialization” can have meanings from financing to licensing. Granstrand (1999, 2000) explores the idea of intellectual capitalism, a form of capitalism where the traditional dependence on fixed assets is increasingly replaced with dependence on intellectual capital and intangible assets, such as intellectual property rights (IPRs) (Granstrand, 1999 and *see, also*, Roos & Pike, 2018; Marr & Adams, 2004; Bontis, 2002; Lev, 2001). IPRs, such as patents, may also facilitate knowledge and technology trade in the ideas market (Gans & Stern, 2010 and *see*, Coase, 1974), which might otherwise be impeded by the information paradox (Arrow, 1962). The presence of these rights may even enable new possibilities that in turn lead to new innovations (Schumpeter, 1934). Thus, IPRs, particularly patents, provide competitive tools for those firms that choose to obtain them and subsequently employ them commercially.

Legal, economic, and management scholars have investigated a set of firm decisions loosely termed “patent strategy,”¹ focusing on how firms optimize and exploit patent portfolios to aid their overall success. Patent strategy research has opened new avenues of inquiry concerning patents as effective tools for firm strategy (Reitzig, 2007; Cho *et al.*, 2018). Patent strategies may comprise overarching management paradigms arising in three broad and intertwined areas: rights creation, rights licensing, and rights enforcement (Somaya, 2012). My research focuses on this third area – rights enforcement – how firms employ patents for the only right actually granted by a patent – enforcement against infringers.

1.2 Litigation Driven Patent Commercialization

While patents have primarily an economic function – rewarding invention – their mechanism for incentivizing invention was not designed by economists. There is nothing in a patent certificate that explicitly unveils the range of its commercial applications, apart from the

¹ “Patent strategy” as used here refers to how firms employ patents to seize competitive advantage or at least amplify their competitive advantage (*See, e.g.*, Reitzig & Sorenson, 2013; Porter, 1980; Wernerfelt, 1984; Barney, 1991). I am less concerned with whether these strategies arise from evolutionary developments (*see, e.g.*, Baum and McKelvey, 1999; Løvas and Ghoshal, 2000; Zollo and Winter, 2002) or from the so-called process school of strategy (*see, e.g.*, Bower, 1970; Burgelman, 1983, 1994; Mintzberg and Waters, 1985; Noda and Bower, 1996; Huy, 2011). I also note that “patent strategy” is sometimes a catchall term that includes an ever-expanding list of topics. As used here, patent strategy has almost nothing to do with which inventions firms patent or in what countries firms obtain their patents.

explicit legal right to seek compensation from someone's infringement of the patent's claims.² As we know, patents are complex tools whose expert-level application calls for knowledge, resourcefulness, and creativity. Compare a tool like the chisel with a tool like a patent – both are complex tools that require years of practice to master. While the invention of the chisel enabled Michelangelo to sculpt *the Pietà*, the invention of the chisel did not automatically endow everyone possessing a chisel with the creativity/skills to create works of art. Similarly, all firms are not equally placed to successfully employ a complex tool like a patent regardless of the inherent value of the underlying invention protected by the patent. Indeed, the literature shows that many firms struggle with using patents to their advantage (*See, e.g.,* Brouwer & Kleinknecht, 1999; Hall *et al.*, 2014; Cohen *et al.*, 2000; Granstrand, 1999; Leiponen & Byma, 2009; Levin *et al.*, 1987).

Nevertheless, patents have been increasingly employed as competitive tools and business assets (Reitzig, 2007; Granstrand, 1999; Cho *et al.*, 2018). US patent licensing revenues have grown from below \$15 billion (Kline, 2003) annually at the beginning of the 1990s to more than \$100 billion annually today (*See, Lemley et al.*, 2018; Hsu *et al.*, 2021; Arora and Gambardella, 2010). Among other things, US corporate focus on patents has been encouraged by firms who have saved themselves from bankruptcy by virtue of their “patent assertion”³ programs (Dess *et al.*, 2005). As more firms reported increases in their licensing transactions, competitive pressures understandably motivated some firms to innovate in directions that led to the development of more robust markets for the transaction of technology and ideas (Chesbrough, 2003).

Commensurate with this proliferation in US patenting there has also been a corresponding expansion in US patent litigation and increasing damage awards (Chien, 2010). A first group of patent plaintiffs relates to firms seeking lost profit damages due to patent-infringing competitors, and a second group of plaintiffs comprises firms seeking royalties for patent infringements in situations where the plaintiffs might not manufacture their own patented inventions. A significant portion of this second plaintiff group comprises firms, known as “non-practicing entities” (“NPEs”),⁴ that derive their entire revenue from patent licensing, litigation settlements, and court-ordered damage awards. NPE litigations now comprise more than half of all patent litigations in the United States (Allison *et al.*, 2013).

Inventions protected by patent must be commercially useful in order to have any value. Thus, successfully patent assertion requires the presence of certain elements that might not arise in all firms. The most skillfully drafted patent is worthless if no one employs the protected invention. Similarly, just as Michelangelo had supportive patrons for all of his major works, successful patent assertion requires a firm willing to support such activities. We know that

² *See*, “35 USC § 271 - Infringement of patent” for the US law regarding patent infringement.

³ “Patent assertion” includes patent infringement litigation, litigation settlements, and licensing to avoid litigation. Patent assertion comprises a process that may begin with a licensing offer that if rejected by the licensing target results in patent infringement litigation that possibly ends in settlement. So, the activity includes both licensing, litigation, and settlement in a process where the licensing target is forced to either take a license, or pay compensation for patent infringement, or defend itself. As discussed herein, patent assertion may arise in both Somaya's proprietary and leveraging strategies (Somaya, 2012).

⁴ NPEs are also known as “patent assertion entities” (PAEs) and derogatorily as “patent trolls.”

few US patents are ever litigated⁵ (Galasso & Schankerman, 2015; Lanjouw & Schankerman, 2001; Lemley & Shapiro, 2005), leading to a working assumption that only a small fraction of patents: (1) protect useful inventions that (2) are owned by firms willing to exploit them, that (3) have managers who understand how to commercially exploit these patents. Nevertheless, these litigations set the norms (and terms) for a significantly greater number of patent licenses and settlements to avoid litigation (*See, e.g.*, Choi, 2010).

1.3 Purpose and Research Questions

The major aim of my research has been to study commercial applications of patents driven by patent assertion, particularly patent infringement litigation. To better understand patent commercialization via patent assertion, this thesis aims to investigate a range of commercial contexts that drive patent assertion strategies, particularly new and novel strategies, by patent-holding firms of all sizes. Thus, the purpose of this thesis is:

To explore patent commercialization strategies motivated by the actual or implied threat of litigation in order to create a better understanding of the effective limits of the patent right by firms that choose to explore its commercial boundaries.

Patent assertion is conceived of as a firm management process controlled by the patent owner (Somaya, 2012). As we know, scholars have explored the development of new patent assertion initiatives and related firm strategies (Reitzig, Henkel, & Heath, 2007). For this investigation, I have considered the five research questions shown in Table-01, which are further discussed below.

Research Question	Paper
RQ-1. How extensive is patent litigation brought by NPEs in US federal courts?	Paper-4
RQ-2. What is the nature of the patent mass aggregator, a highly capitalized firm that buys thousands of patents to form a massive patent portfolio that it commercializes by patent assertion?	Paper-1
RQ-3. How extensive is patent privateering, NPE patent litigations that have been sponsored by a third party, and what are the core parameters of this strategy?	Paper-2
RQ-4. To what extent can targets of privateering attacks retaliate against the sponsors simply for privateering alone, as opposed to other causes of action?	Paper-3
RQ-5. What types of managerial decisions are included in patent litigation strategy, and how do they relate to the commercial setting?	Paper-5

Table-01 Research Questions

As we know, certain aspects of patent infringement litigation may be studied empirically (Chien, 2009; Feng & Jaravel, 2020, Allison *et al.*, 2013). For example, many researchers have studied the growth of NPEs who assert patents but make no patent-protected products themselves (Chien, 2010; Reitzig, 2007; Cohen *et al.*, 2016). Over time, it appeared that

⁵ We know that most patent disputes settle pre-litigation. In addition, the number of litigations compared to the number of issued patents still corresponds to thousands of litigations involving billions in damages. In 2020, US courts added 4,060 new patent infringement litigations to the ongoing litigations. Nearly 11,000 patent infringement cases have been filed in federal courts in the past three years alone. Bailey, R. Lex Machina Releases its Annual Patent Litigation Report, 17 March 2021; <https://lexmachina.com/blog/lex-machina-releases-its-annual-patent-litigation-report/>; site last visited 2021-08-23.

NPE patent litigations had possibly overtaken conventional firm-versus-firm patent litigations. Attempting to precisely measure NPE litigations led to my first research question (RQ-1: “How extensive is patent litigation brought by NPEs in US federal courts?”).

“Patent mass aggregators,” industrial scale NPEs intended to grow the ideas market in the US via patent assertion evolved from the original NPE model (*See, e.g.,* Myhrvold, 2006 and Rivette, 2000). The economic impact of the patent mass aggregators has been hotly debated (Chien, 2012; Lemley & Myhrvold, 2007; Bessen & Meurer, 2013). As a phenomenon that arguably expands the range of patent commercialization, patent mass aggregators fell within my overall research topic, leading to my second research question (RQ-2: “What is the nature of the patent mass aggregator, a highly capitalized firm that buys thousands of patents to form a massive patent portfolio that it commercializes by patent assertion?”).

Scholars are aware that secrecy permeates the ideas market (Holgersson & Wallin, 2017). While investigating the topic of patent assertion and NPEs, I discovered a strategy that I named “patent privateering.” This strategy, which I will discuss in detail, essentially comprises NPEs that have been sponsored by a third-party firm. Just as patent mass aggregators evolved from the basic NPE model, privateering likewise seems to have a similar evolution. I explored this newly discovered privateering phenomenon in my third and fourth research questions (RQ-3: “How extensive is patent privateering, NPE patent litigations that have been sponsored by a third party, and what are the core parameters of this strategy?” and RQ-4: “To what extent can targets of privateering attacks retaliate against the sponsors simply for privateering alone, as opposed to other causes of action?”).

In terms of patent litigation itself, legal scholars conceptualize patents and patent litigations as monomorphically identical given that all patents must exhibit certain characteristics to be valid, and all patent litigations must follow a similar course (*See, e.g.,* Menell *et al.*, 2017). However, an exclusive legal focus ignores the differing commercial motivations of the firms holding patent rights. The economic and management literature teaches us that patent assertions have unique and/or differing commercial contexts (Golden, 2014). I wanted to explore the context and firm decisions related to patent litigation itself, a management process that does not end once legal machinery is engaged but continues until the litigation’s end, leading to my fifth research question (RQ-5: “What types of managerial decisions are included in patent litigation strategy, and how do they relate to the commercial setting?”).

The primary target groups for my research results are researchers in management, economics, and law who study intellectual assets, managers having oversight over their firm’s commercial intellectual asset matters, and policy makers who work with intellectual property. The overarching problem considered here is primarily motivated by the costs to society from inefficiencies in the patent system. Among other things, some abuses may draw funds away from productive industries. Similarly, poorly compensated inventors may decide to do something other than invent in the future because they found themselves inadequately compensated in the past.

1.4 Thesis Overview

The thesis consists of five appended papers and this cover paper. The cover paper for this thesis is organized as follows: Chapter 2 provides a frame of reference; Chapter 3 describes the methodology and paper-specific purposes and research questions; Chapter 4 provides summaries of the appended papers; Chapter 5 describes some of the main results; Chapter 6 comprises a discussion of the results, and Chapter 7 summarizes the primary conclusions with implications for research and practice.

2. Frame of Reference

2.1 Overview

This thesis hopes to contribute to the academic literature related to patent assertion and its management at the firm level. To that end, this chapter discusses several fundamental concepts used in the thesis and appended papers to provide a theoretical framework for the thesis, including the rationale behind the patent system and certain critical issues related to extracting value from patents. Some important recent trends underlying this thesis are also described. These trends include the later flowering of the pro-patent era, which has witnessed the development of new competitive strategies involving patents.

Before describing some bedrock concepts related to patents, I will first describe some of the gaps I see in the rich literature related to patent assertion. I begin with patents' role in the ideas market (Gans & Stern, 2010) via patent assertion. The ideas market, which includes patent licensing, plays an important role in economic growth and knowledge diffusion (Teece, 2019). The patent licensing market appears to exceed \$100 billion annually, although complete figures are difficult to determine because of secrecy clauses in licensing agreements (*See*, Lemley *et al.*, 2018; Hsu *et al.*, 2021; Arora & Gambardella, 2010; Robbins, 2006). A well-functioning ideas market offers several advantages, including efficient vertical specialization and efficient resource allocation decisions (Chesbrough, 2003). However, a portion of the ideas market related to patents has likely not achieved its full blossoming in part due to certain failures that may sometimes be helped and sometimes hindered by the prospect of enforcement through litigation. Rivette¹ & Klein (2000) claim a \$1 trillion in ignored intellectual property asset wealth losses in the United States due to patent licensing failures of various sorts. Economists and management scholars have likewise identified several potentially significant sources of transaction costs and market failure that may affect intellectual asset licensing, such as information asymmetry problems like Arrow's paradox (Arrow, 1962; Piazza & Pedicini, 2019), moral hazard (Arora, 1996; Dushnitsky & Klueter, 2011), and hold-up problems (Pisano, 1991; Teece, 2010).

Precisely pinpointing the sources of failure in the patent segment of the ideas market is difficult, in part because there is no universal definition of success or failure (*Compare* Lemley & Myhrvold, 2007; Lemley, 2013; Allison *et al.*, 2009; Arora & Ceccagnoli, 2004 *with* Bessen & Meurer, 2008; Blind *et al.*, 2009; Jaffe & Lerner, 2004). FIG. 01 illustrates variations in the success and failure in the patent segment of the ideas market. Some researchers like Blind and Jaffe (respectively, Blind *et al.*, 2009 and Jaffe *et al.*, 2004) focus on licensed patents (1) that were licensed not due to actual infringement² but due to litigation cost avoidance and/or were licensed by firms that did not themselves practice their own patents.³ Other researchers like Rivette (Rivette, 2000) focus on unlicensed patents⁴ (2) and

¹ Rivette was an early advisor to Intellectual Ventures, the patent mass aggregator discussed in Paper-1.

² Or licensee interest/desire in obtaining rights to practice a given patent.

³ And were therefore not harmed by infringement of their patent rights and/or worthy of receiving royalties.

⁴ Rivette refers to particularly valuable but unlicensed patents as "Rembrandts in the attic," and these unlicensed patents make up a sizeable portion of the \$1 trillion he finds in lost licensing revenue. In Rivette's

licensing disputes/litigation (3) where the asserted patent(s) are infringed but the defendant thwarted the patent assertion. Meanwhile, other researchers like Bessen and Meurer (Bessen & Meurer, 2008) focus on the costs associated with licensing disputes/litigation (3) and to some extent on unnecessarily licensed patents among the licensed patents collection (1). Thus, different researchers may focus on differing aspects of patent assertion which in turn define “success” or “failure” for the patent system (*See*, Lemley, 2016 for commentary regarding these differing indicators of success or failure and his hypothesis that patent assertions may have lower impact on the patent system than the market belief in patent rights, comparing patents to currency values and real property values).

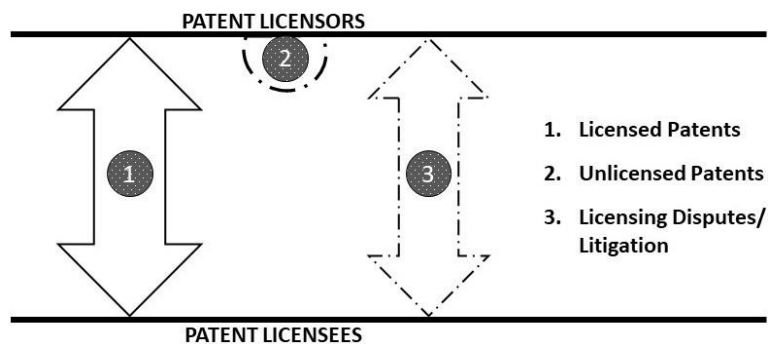


FIG. 01 The Varying Elements of Success and Failure in the Patent Market

We should also note that any market is subject to coordination problems of various types (Chamberlin, 1948; Ozga, 1960; Beckert, 2009). Applying Beckert’s framework (Beckert, 2009), we can see that the patent market often ends up in patent assertions rather than non-contentious patent licenses for failure to overcome the value problem (assigning different values to heterogeneous goods within a market), the competition problem (competition threatens market actor profit expectations), and the cooperation problem (incomplete knowledge regarding the intentions of other market actors). These particular problems are exacerbated by the overall failure for defining market success described above and also by the requirement for every valid patent to be a legally unique good. The patent market largely comprises a series of bilateral transactions that are typically uncoupled from (or only loosely coupled with) other transactions (*see*, Gans & Stern, 2010; Hagiu & Yoffie, 2013). Patents are difficult to value compared to most other goods as they lack comparables (Hagiu & Yoffie, 2013), and patent value is subject to strong complementarities and portfolio effects (Gans & Stern 2010; Parchomovsky & Wagner 2005).

While patent rights may be licensed, patent owners may only enforce their patent rights through litigation. This nonmarket activity incurs up to \$12.8 billion annually in the US in costs to alleged infringers, according to some estimates (Bessen *et al.*, 2018). In terms of patent litigations themselves, most patent litigations settle before trial and on confidential terms (Lanjouw & Schankerman, 2001; Lemley & Shapiro, 2005). Anecdotal evidence suggests that market reaction to settlements is often uninformed. For patent litigations that proceed to trial, litigation outcomes can be measured along a number of dimensions, from

characterization many of the unlicensed patents are not licensed due to absence of infringement but due to prospective licensees’ refusal to accept licenses, such that the patent owners simply give up or never try.

types of patents litigated (Allison *et al.*, 2013) to damage awards (Chien, 2010) to plaintiff success/failure (Feldman, 2012).

This thesis focuses on patent litigation in the US, primarily because of its economic impacts, particularly the size of the litigation damage awards, a consideration too large to be ignored by even the largest firms. As explained below, US patent litigations tend to favor plaintiffs, especially compared with other jurisdictions worldwide. US trial courts have awarded more than one billion dollars in damages to at least 10 successful plaintiffs.⁵ These high damages arise in part due to the size of the US economy and in part due to damage calculations under US law. In addition to higher damage awards, patent litigation has increased in frequency during the pro-patent era (Granstrand, 1999; Kiebzak, *et al.*, 2016).

US patent litigation data answers some questions, but a raw examination of this data sometimes suggests almost robotic firm behaviors during litigation that contrast with other studies (*see, e.g.*, Niiniluoto, 1993; Aristodemou *et al.*, 2020). I also note that much meaningful data is unavailable because of confidential agreements⁶ (Bekkers *et al.*, 2002). Nevertheless, some insightful literature regarding US patent infringement litigations themselves helps sharpen our focus by pointing out in detail that patents carry distinct uncertainties and limitations (Allison *et al.*, 2013; Lemley & Shapiro, 2005; Teece, 2000). An issued patent may be legally invalid, and patent claims may be invented around (Mansfield *et al.*, 1981; Heger & Zaby, 2018). Many years after a patent is granted, typically during litigation and often on appeal, these legal uncertainties may be resolved (Linden & Somaya, 2003; Teece, 2000). Consequently, patent protection may be unpredictable (Cohen *et al.*, 2000).

Exploring US patent litigations from their specific commercial circumstances (*see, e.g.*, Golden, 2014) gives us a new and useful point of view by observing that patent litigations arise from commercial contexts⁷ largely independent of the specific legal issues in a given infringement case. The process of understanding how parties ended up in patent litigation has been researched (Encaoua & Lefouili, 2005; Bhagat *et al.*, 1994). In this process, some helpful research has emerged regarding aspects of pre-litigation motives (Golden, 2014 and

⁵ *Idenix v. Gilead Sciences Inc.* (2016), initial \$2.5 billion damage award overturned on appeal; *Intel v. VLSI Technology* (2021), initial \$2.18 billion damage award still on appeal; *Pfizer v. Teva Pharmaceuticals & Sun Pharma* (2013), parties settled litigation for \$2.15 billion; *Centocor Inc v. Abbott Laboratories* (2009), initial \$1.67 billion damage award reversed on appeal; *Alcatel-Lucent v. Microsoft* (2007), initial \$1.5 billion damage award reversed on appeal, parties settled for \$512 million; *Litton v. Honeywell* (1993), \$1.2 billion damage award overturned on appeal; *Carnegie Mellon University v. Marvell Technology Group* (2012) initial \$1.17 billion damage award, parties settled for \$750 million; *Apple v. Samsung* (2012), initial award of \$1.04 billion was later reduced to \$450 million; *Monsanto Company v. Pioneer Hi-Bred Int'l, Inc.* (2012), initial award of \$1 billion became a broader license for \$1.75 billion, and *Polaroid v. Kodak* (1991) damage award of \$925M and Kodak was required to exit the instant camera market.

⁶ Licensing terms and litigation settlements are typically confidential.

⁷ “Context,” or commercial context, here refers to both the broad and narrow exogenous and endogenous circumstances around a given patent assertion. In particular, how did firms before and during litigation see their external commercial environment developing and how did they see their internal commercial environment development. (*See, e.g.*, Demarest, 1997). For example, the contextual circumstances of a patent assertion brought by an NPE against Firm-A are likely very different than Firm-B asserting a patent against the same Firm-A where both Firm-A and Firm-B are suppliers to an even larger firm that might itself object to Firm-B’s litigation against Firm-A, regardless of its merits.

Somaya, 2016). The role of context has also been examined in the distribution of proprietary versus defensive litigations in specific industries (Rudy & Black, 2018) and in leveraging litigations among firms having differing transaction cost and market positions (Chen *et al.*, 2016), as well as the role of context in seeking injunctive relief during litigation (Golden, 2014). While helpful, these roads tend to stop at the litigation event itself, somewhat giving the impression that the litigators takeover the firm's management duties. In contrast, US litigators are required to give control over litigations to their clients.⁸ Thus, we can see that patent assertions have a close linkage to firms and their specific circumstances from the beginning of a patent assertion all the way through litigation to its completion.

Overall, I offer five contributions to the rich literature in this field. I first offer insight into firm motivations during US patent infringement litigations themselves, including an understanding about the contextual milieu that drives some firms to persist with a patent infringement litigation even after they have lost a key battle during the litigation (Paper-5). I build on the rich literature on patent infringement litigations (*see*, Allison, *et al.*, 2013 and Anderson & Menell, 2019) as management under uncertainty (*see*, Foss & Klein, 2020) to illuminate the variety of contextual situations that drive plaintiff firms forward, even when success might seem unattainable. I further explore patent assertion in view of the insightful literature related to novel patent commercialization strategies (Chien, 2009; Chien, 2010; Allison *et al.*, 2009). My research regarding litigation context and novel patent assertion strategies led to discovering a specific type of patent infringement litigation brought essentially for an indirect purpose (Paper-2 and Paper-3). The abundant research (Chien, 2009; Lemley & Shapiro, 2007) related to US patent litigations brought by so-called non-practicing entities (NPEs) raised questions regarding the overall proportion of NPE litigations among patent infringement litigations in the US. I explored this issue empirically (Paper-4) and my results corresponded with other contemporary efforts to measure such litigations (Chien, 2012; Lemley, 2013; Love, 2012). As a fourth contribution, the literature regarding patent assertion (Rivette *et al.*) directed me towards a class of NPEs, patent mass aggregators, marked by the immense size of their portfolios. I attempted to add to the relevant literature by analyzing the portfolio and patent licensing practices of one of the first but not only patent mass aggregator (Paper-1). Fifth, the synergistic import of Paper-1, Paper-2, and Paper-3 speak to aspects of NPE ownership and control not addressed in the rich and vast literature regarding NPEs (*e.g.*, Lemley & Melamed, 2013; Hagiu & Yoffie, 2013; Cohen *et al.*, 2014; Haber & Werfel, 2015; Cohen *et al.*, 2016; Haber & Werfel, 2016; Kiebzak *et al.*, 2016; Cosandier, 2017; Allison *et al.*, 2017; Leiponen & Delcamp, 2019; Kessan, 2019; Kwon & Drev, 2020; Feng & Jaravel, 2020; Chari *et al.*, 2021), namely who finances and controls NPEs and how NPEs (or at least some NPEs) might fit into existing theories of the firm. Paper-1, Paper-2, and Paper-3 show that NPEs of the patent mass aggregator and patent privateer type are service providers, intermediaries, extensions, and

⁸ Rule 1.2: Scope of Representation & Allocation of Authority Between Client & Lawyer, US Model Rule of Professional Responsibility (adopted by the bar associations of all 50 states), American Bar Association, https://www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/rule_1_2_scope_of_representation_allocation_of_authority_between_client_lawyer/; site last visited 19 February 2022.

alter egos of firms, particularly large ones, and we can further see that the roles performed by NPEs of these types fit well with both the transaction cost theory of the firm and the resource-based theory of the firm.

2.2 Patent Systems

Innovations,⁹ particularly developments that advance technology, are major contributors to economic development (Rosenberg, 1982; Rosenberg & Birdzell, 1986; Scherer, 1999). An invention becomes an innovation when the invention enjoys its first commercial use, such as a first commercial use of a product or service (Granstrand, 1999). Patent systems may temporarily embargo technical inventions from exploitation by the general public, enabling innovators to appropriate returns from their investments which may incentivize both the diffusion of their inventions and the generation of new ones. For this thesis, it is sufficient to state that a patent is a government-granted legal right that allows its owner to control for up to 20 years who makes, uses, imports, offers to sell, and/or sells, a product/service described by the patent's claims¹⁰ (sentence-like statements marking the metes and bounds of the patent's scope).

While patents may erect competitive barriers, they typically include uncertainties and limitations (Lemley & Shapiro, 2005; Anderson & Menell, 2019; Teece, 2000). Among other things, even an issued patent may be invalid, and patent claims may be invented around (Mansfield *et al.*, 1981). Much of this uncertainty stems from the fact that the metes and bounds of the patent's claims, when enforced, are determined by the court through an often-unpredictable process known as claim construction where the patent's claims are legally construed (Bender, 2000; Sag & Rohde, 2007; Wagner & Petherbridge, 2004, and Lefstin, 2008). Two concurrent litigations involving the same patent but in different courts have sometimes produced different constructions of the same claim term. Consequently, effective patent protection is effectively unreliable (Cohen *et al.*, 2000).

In the absence of strong patenting systems, profits from innovations tend to land on those firms holding complementary assets and not the original inventor (Teece, 1986). Underinvestment in future R&D and innovation may occur due to the collective failures of prior innovators to seize the profits from their creations (Arrow, 1962; Demsetz, 1967; Mansfield *et al.*, 1977). Not surprisingly, governments typically want to stimulate technology and innovation investments. This utilitarian rationale comprises the conventional economic explanation behind patent law. By contrast, the legal system itself historically employs a natural rights point of view (*See*, Locke, 1698) that inventors should have the rights to enjoy the fruits of their own labors (*See, e.g.*, Menell, 2010).

To some extent, patent systems may co-evolve with a nation's state of industrialization (*See*, Holgersson *et al.*, 2018). The commercial significance of the US patent system has changed

⁹ An innovation comprises something new that has attained commercial use, a definition that separates the act of invention from commercialization activities (Granstrand, 1999; Schumpeter, 1934).

¹⁰ A simple patent claim: An electrophotographic photoreceptor, comprising: a substrate; and a photosensitive layer including gallium, oxygen, and zinc. (Originally filed claim of US Patent No. 8,709,688, amended during prosecution to include additional limitations.)

dramatically over the past thirty years. In the early 1980s, several key legal changes strengthened the institutional framework around the US patent system. These changes included the establishment of the US Court of Appeals for Federal Circuit (CAFC), strengthening of the enforcement of patent rights (Merz & Pace, 1994), and the passage of the Bayh-Dole Act.¹¹ Collectively, these actions led to an explosion in US patenting (*e.g.*, Hall, 2005) and the pro-patent era (Granstrand, 1999). The pro-patent era has now spread to large parts of the world, and nearly half of all US patents are held by foreign entities. Patent systems around the world have similarly evolved and converged but not harmonized. This development has been encouraged by the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) in 1994, and its subsequent enforcement by the World Trade Organization (WTO) (Maskus, 2000).¹²

Patent laws predate the economic and legal theories that explain and justify them (*See, e.g.*, Bennett, 2014). A patent law was adopted in Venice in 1474 (Granstrand, 1999). The first modern patent law is believed to be the English Statue of Monopolies in 1623, and the first patent law of the industrial era is the US Patent Law of 1790. It should come as no surprise to learn that the laws and norms governing patents have been adjusted historically to serve the needs of specific stakeholders (Dent, 2009). Among other things, the patchwork development of the patent right means that the right began life based on a hunch¹³ that such a right might be helpful in promoting invention, and as technical developments accelerated during the industrial era, the nature of the patent right, its scope, its economic impacts, and many other factors have been frequently tinkered with by legislators and judges to bring the initial hunch more into alignment with expectations (*see, e.g.*, Anderson & Menell, 2019).

Consultants sometimes use snazzy terms to describe the commercial possibilities of patents, but the only right provided by a patent is the right to control who uses its claims.¹⁴ Commercially employing patents, often termed “patent monetization,” requires collecting revenues from another party’s product revenues. Someone, someplace has to make something that arguably reads on the claim of the asserted patent.¹⁵ There is simply no other way to make a penny from a patent.¹⁶ In other words, the patent owner’s level of return from

¹¹ The Bayh-Dole Act gave universities more ownership rights to government-funded inventions.

¹² I note, however, that this convergence primarily pertains to the conditions for granting patents and has thus far not touched other areas, such as determining how patent infringement trials are conducted or the measure of damages due a successful patent owner upon a legal showing of infringement.

¹³ The right of the English king to grant patents (legal monopolies) was curtailed by Parliament with the Statute of Monopolies that left patents of invention as the only remaining category for which patents could be granted on the assumption that this might be economically beneficial (Dent, 2009). Three hundred years later in the 1950s, the US Congress asked economist Fritz Machlup to evaluate the patent system, and Machlup concluded famously (albeit indecisively) that the evidence did not support the existence of a patent system but since one already existed taking it away might not be helpful. *See*, Machlup, F. (1958). Subcommittee on Patents, Trademarks, and Copyrights of the Subcommittee on the Judiciary, 85th Congress, An Economic Review of The Patent System, Study No. 15 at 80.

¹⁴ I am also mindful of Mark Lemley’s observation that the other commercial impacts of patents independent of their enforceability may comprise the greatest value of patents overall (Lemley, 2016), yet I note that the entire patent market is underpinned theoretically by the potential of litigation enforcement.

¹⁵ It is blackletter law that a patent never infringes another patent. Patents are merely prior art to other patents.

¹⁶ A technology and/or know how license would be a different matter, as is using a patent as a tool for obtaining venture funding.

a reasonable royalty or lost profits litigation damage award depends on how successful it is at extracting value from existing products or products close to the production pipeline.

Patent infringement is typically not discovered easily, and enforcing a patent raises a plethora of issues, including expense, time, and disruption (Encaoua & Lefouili, 2005; Bhagat *et al.*, 1994). As such, a patent does not bestow exclusionary rights as much as a right to pursue exclusion legally (Shapiro, 2003). Holding a patent has been compared to holding a lottery ticket since ultimate success in litigation is far from guaranteed. Legal uncertainties may be resolved during litigation many years after the patent has been granted (Linden & Somaya, 2003; Teece, 2000). Consequently, successful firm strategies aim to endogenously guide appropriation from patents, an activity that does not occur automatically or arise exogenously (Pisano, 2006).

Given that litigation offers the sole tool for enforcing patent rights a curiously small amount of research has examined firm strategies during actual patent litigations themselves (Somaya, 2016), including how firms select cases for litigation (Golden, 2014). Somaya has described the boundaries of a patent litigation arena comprising three major patent assertion use cases¹⁷ with somewhat fluid boundaries: proprietary, defensive, and leveraging (Somaya, 2012, *cf.* Holgersson, 2013). Proprietary and leveraging strategies involve deliberate or affirmative patent assertions while defensive strategies passively thwart the proprietary and/or leveraging strategies of others. These strategies themselves set out the boundaries of an IP litigation arena whose elements firms may employ in designing commercialization scenarios that satisfy their unique objectives.

In a proprietary strategy, a firm asserts its patents to stop imitation of patent-protected competitive advantages (*See*, Chen & Jing, 2017; Lippman & Rumelt, 1982; Rumelt, 1984). Patents here aim to protect the key technical features that provide the firm's competitive advantages (Stefanadis, 1997; Teece, 2000). Proprietary strategies work well for technologies offering distinct advantages with few close substitutes (Polidoro & Toh, 2011). In the US, injunctions and lost profits damages comprise key remedies sought in proprietary strategies. Proprietary strategies may enable patents covering specific technologies to extend their protection to cospecialized technologies (Teece, 1986; Jell *et al.*, 2017).

In a leveraging strategy, a firm employs its patents to collect rents. A firm may have valuable patents that can serve as vehicles for collecting rents. Thus, patents in a leveraging strategy are directly lucrative.¹⁸ Firms unable to sell their own products/services may employ

¹⁷ These use cases are not strictly limited to the US but given the level of damages available in the US, the potential impacts of the proprietary and leveraging strategies is likely diminished in other jurisdictions.

¹⁸ Some firms initially followed defensive strategies but then evolved to leveraging strategies to monetize their expensive defensive portfolios. For example, American Express practiced a defensive patent strategy in reaction to business patent litigations arising from the Federal Circuit's holding in *State Street Bank and Trust Company v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998). The firm ultimately opted to derive value from its portfolio via a leveraging strategy, which became so successful that patent assertion became a business unit (The Evolving IP Marketplace: The Operation of IP Markets: Hearing Before the Fed. Trade Comm'n 38 (Apr. 17, 2009), statement of Tracey R. Thomas, Chief IP Strategist and License Negotiator, American Express Co). Similarly, the Xerox Corporation formed an IP business in 1998 to develop an active patent licensing program based on the firm's patent assets (*See*, Rivette & Kline, 2000).

leveraging strategies to hold up competitors (Lemley & Myhrvold, 2007). The patent right to exclude drives leveraging strategies. Leveraging efforts may succeed even when a possible infringer could invent around a firm's patents – but with cost and uncertainty. Consequently, leveraging includes licenses to patented technologies that are imperfect substitutes (Arora & Fosfuri, 2003). A specialized leveraging firm that has received much focused attention in recent years is the NPE, which I will discuss below (Reitzig *et al.*, 2007).

In a defensive strategy, a firm waits to be attacked by a competitor's patents and then employs its own patents in countersuit to prevent holdup from the third-party patents. Firms here employ their patents as counterclaims to thwart proprietary or leveraging patent assertions by competitors, and some large firms use their massive portfolios as shields to produce products with limited regard for the patents of other firms.¹⁹ Technology firms sometimes move into a particular technology area before understanding the key patents, especially for multi-technology products (Hall & Ziedonis, 2001). Exploiting an asymmetric exposure to a target firm renders the patent-asserting firm less exposed to countersuit via a defensive strategy because the target firm is less likely to have relevant patents of its own.²⁰

As we have seen, when examined empirically from purely legal aspects, patents are monomorphically identical given that all patents must exhibit certain characteristics to be valid (*See, e.g.,* Menell *et al.*, 2017). A solely legal viewpoint may describe patent litigation intricacies but typically ignores its complexities (and purpose) from the point of view of the firm bringing the litigation. An exclusively legal focus overlooks each litigant's underlying commercial objectives and obscures our understanding of litigation from a firm point of view as an exemplar of management under uncertainty (*See, e.g.,* Foss & Klein, 2020).

As noted, patent infringement litigations' focus on specific legal issues are somewhat disconnected from the commercial contexts of the parties in suit (*See, Golden, 2014*). Context, for example, plays a crucial role in guiding firms through patent assertion use cases: ranging from employing patent litigation in a firm's nonmarket strategies to using patents only defensively. The role of context has been studied in the distribution of proprietary versus defensive litigations in particular industries (Rudy & Black, 2018), and differing transaction cost and market positions are known among firms in leveraging litigations (Chen *et al.*, 2016), as well as the role of context in seeking injunctive relief during litigation (Golden, 2014). Bringing such concrete and material artifacts into the analysis for firm patent litigation management clarifies overarching firm objectives and specific litigation opportunities such as settlement.

2.3 Firms, Competition, and Patents

Competition among firms has been described as a dynamic process in which firms prepare and execute intricate plans involving the necessary assets, including patents, for achieving

¹⁹ Without suggesting that Samsung has employed this strategy, the firm holds 172,548 US patents and has been involved in more than 3,000 patent litigations; has been plaintiff in only 93 patent cases but appears to have filed counterclaims in 766 patent litigations, according to USPTO and US Pacer court records.

²⁰ As noted elsewhere, defensive strategies are completely useless against NPEs who make no products of their own.

the firm's business goals (Arora and Merges, 2004). In the decades corresponding to the pro-patent era, technology firms in many sectors have been forced to innovate continuously, pressed by ever-shorter technology, development, and product life cycles (Granstrand, 1999; Chesbrough, 2003). In this context, technology firms have learned that the strategic use of intellectual property is often critical for securing competitive advantage (Cho *et al.*, 2018).

A firm attains a competitive advantage when it implements a strategy that is not concurrently copied by its competitors (Barney, 1991). Competitive advantage is primarily generated by difficult to imitate competencies, and patents are important for limiting imitation and a key to securing competitive advantage (Teece *et al.*, 1997). "Appropriability" refers to an innovator's ability to seize value from an investment (Levin *et al.*, 1987; Teece, 1986; Hurmelinna-Laukkanen & Yang, 2022). The appropriability regime itself may depend upon variables such as the nature of the technology and legal protections like patents (Teece, 1986). When the ability to imitate approaches impossibility, then a tight appropriability regime exists, and the innovator has a high likelihood for capturing value from the innovation. Conversely, when the ability to imitate approaches certainty, then the innovator's ability to capture value from the innovation depends on access to various complementary assets (Teece, 1986).

For any given industry, appropriability is not exogenously determined but may be endogenously shaped by firms, governments, and technological change (Granstrand, 1999; Pisano, 2006; Pisano & Teece, 2007; Somaya, 2012; Teece, 2006). The ability of firms to develop workable appropriation strategies becomes critical for seizing returns from investments, particularly investments in innovation. To this end, firms may need to adjust their patent strategies to allow their product offerings to thrive in the marketplace and defeat competitors in order to profit from innovation (*See, e.g.,* Conley *et al.*, 2013; Mahoney & Pandian, 1992).

Two longstanding theories of the firm that provide interesting insights into the interplay between firms, patents, and patent assertions are transaction cost theory (Coase, 1937; Coase, 1988; Williamson, 1975, 1996) and the resource-based theory of the firm (Penrose, 1959, Chandler, 1990). The transaction cost theory explains when economic activity optimally occurs within a firm and when it optimally occurs in the market based on the efficient allocation of costs in terms of where the activity occurs. While patent litigation comprises a non-market activity, patent licensing comprises a market activity. In addition, some vehicles may be more efficient at conducting patent litigations than others. Consequently, patent assertions are sometimes organized by vehicles outside of a controlling firm. Such patent assertions often arise in situations where the potential transactions costs to an associated firm are considerably higher than they might be for an agent (or an alter ego) of the firm. In other words, patent assertion is sometimes an activity that is more efficiently organized outside of a firm than inside it. For example, the defensive patent strategy mentioned above can only be applied against firms that make products. An entity that makes no products is better positioned than an entity that makes products to sue another patent-holding firm for patent infringement since the latter is vulnerable to countersuit from the defendant's patents while the former is not. Thus, transaction cost theory would suggest that

it is more efficient to assert patents against a patent-holding firm by the entity holding no patents.

Resource-based theory focuses on the useful resources available to a firm (Penrose, 1959; Barney, 1991; Peteraf, 1993; Barney *et al.*, 2011). Patents, for example, may be considered one type of firm resource. In the resource-based theory, ownership of a resource matters less than control of the resource. In the case of patents, control (or a measure of control) over a patent may matter much more to a firm than legal ownership of the patent. Indeed, a measure of control over a patent is *sine qua non* of patent licensing for both the licensor and the licensee. Since control over (*i.e.*, rights related to) patents may span a firm's legal boundaries, the boundaries of firms may at times become blurred in certain patent assertion context. Moreover, Penrose explains that available resources may limit a firm's growth (Penrose, 1959). As we shall see, management of patent assertion activities need not arise from the firm that owns the asserted patent but from the firm that controls the patent. Among other benefits, as mentioned in the defensive patent example above, firms not manufacturing products have an advantage in patent assertion over firms that do manufacturing products. Put another way, it would be advantageous for firms manufacturing products to shift at least certain patent assertion activities to other entities over whom they have a measure of control without necessarily having ownership. As such, even though such firms might not be the legal owner of a given patent, the firm's boundaries have effectively expanded to include the patent.

Consequently, both transaction cost theory and resource-based theory suggest that in patent assertions there may be situations (avoiding a defensive strategy is one such situation) where the activity might be more efficiently accomplished outside the firm rather than inside it, at least in terms of legal ownership of the patent assets involved. Moreover, as noted above, an inefficient and illiquid market like the patent market is well known from creating opportunities for intermediaries (Hagiu & Yoffie, 2013). Put another way, not only is legal ownership not required for efficient patent assertion by firms under both the transaction cost theory and the resource-based theory, but a market like the patent market should have a readily available supply of intermediaries willing provide appropriate services.

Just as more teams lose championships than win them, in the aggregate, patents have been shown to have low efficacy as a means for appropriation in numerous studies (Cohen *et al.*, 2000; Granstrand, 1999; Leiponen & Byma, 2009; Holgersson, 2013). Of course, these measurements have been made across firms often with the assumption that all firms are equally placed to appropriate value from patents and have equal appetites for patent assertion. The various appropriation means are not typically mutually exclusive. Even "average players" tend to agree that market lead time can be prolonged by both patent and trade secrecy protection. As another example, product innovations may be protected by a range of options that includes product patents and/or process secrets and/or learning effects in areas such as production, marketing, and after sales services (Menell, 2010).

2.4 The Common Law Legal System

The US legal system operates as a common law jurisdiction. The world's legal systems are

a product of history, and the world's two predominant legal systems, the common law system and the civil law system, both originated in Europe²¹ (Gerber, 1998). Common law systems and civil law systems are more alike than different although each system offers some significant departures from the other. Four major departures, especially relevant for patent litigation, comprise (1) the theory of damages, (2) the role of precedent, (3) the principal of equity, and (4) litigation discovery. A fifth distinction available in the US, in particular, is the possibility for contingency fee legal services in which the lawyers' compensation is a percentage of the plaintiff's damages award (if any). The use of contingency fee lawyers is extremely common in plaintiff-side US patent litigation but is illegal in many other countries.

Theories of damages differ between common law and civil law systems. Civil law systems strictly prohibit punishing defendants and focus solely on placing plaintiffs in their likely position in the absence of the defendant's actions (Baldoni, 2012). Common law damages theories include the possibility for punishing guilty defendants, as well as generously compensating plaintiffs for their injuries. To this end, US Patent Law guarantees successful plaintiffs "in no event less than a reasonable royalty"²² as patent infringement damages. US law further provides plaintiffs with the possibility to maximize their damages award since lost profit damages are also possible at the plaintiff's choosing.

The role of precedent is typically absent or circumscribed in civil law systems while it is fundamental to common law systems (Fon & Parisi, 2006). The idea behind precedent is that a court should remain consistent with its own prior decisions and the prior decisions of higher courts. Common law courts also have the role of interpreting written laws, and these interpretations collectively contribute to judicial precedent. Consequently, reviewing previous decisions by the relevant courts is often crucial to understanding how a court will decide a new case while this feature is absent or diminished in civil law systems, which tend to be guided exclusively by the written law.

Unlike the common law system, the principal of equity is not present *per se* in litigation in civil law systems (Razi, 1963). In a nutshell, equity recognizes concepts of fairness that might not be well reflected or specifically presented in written laws.²³ For example, US law includes the possibility of heightened damages in patent infringement cases where the defendant has acted particularly egregiously. In the US's codified Patent Act, the measure of damages awarded for such willful infringement is still a matter of judicial discretion and a decision eligible for review by a higher court. In short, a judge has the sole discretion to

²¹ Both systems originated in part from the legal traditions of ancient Rome as filtered through medieval church canon law. The common law system originated in England roughly 1,000 years ago and subsequently spread throughout the former English colonies and to a few non-English countries as well. The modern civil law system first emerged from the French Napoleonic Code (1804) with subsequent spread and further developments throughout continental Europe (*e.g.*, the German Civil Code of 1900) and around the world, including via European colonies and spheres of European influence.

²² US Patent Act, 35 US Code § 284.

²³ Assume a case involving a Van Gogh painting where the seller did not deliver the painting to the buyer. Legal damages would comprise something like the painting's sales price. Equitable damages would comprise something like a court order requiring the seller to deliver the painting to the buyer.

award extra damages in patent cases where he believes the defendant has behaved particularly poorly and should be punished. Such enhanced damages are not permitted by courts operating under a civil law system.

The operation of broader discovery in common law countries (especially the US) compared to civil law countries provides another distinction between the two systems. Discovery refers to the ability of litigating parties to force opponents to surrender non-public documents and/or provide truthful interviews with relevant persons that may assist the litigating parties in collecting the evidence needed to bring and perfect their respective cases. Even among common law countries, the US offers extremely broad discovery, which in part explains the increased expense of US litigation. Some civil law countries (*e.g.*, China) offer no discovery at all, which in part explains why Chinese litigation is typically considered one of the world's least expensive litigation systems.

2.5 US Patent Law

The US operates the world's first patent law of the industrial era, which has been in continuous operation since the Patent Act of 1790, 232 years of continuous existence. Like most countries, the US operates a unitary patent system, which does not have different sets of rules for different classes and types of inventions.

US patenting skyrocketed during the pro-patent era, and firms of all sizes have increased their patenting significantly. FIG. 02 illustrates the growth in US patent grants over a 180-year period, showing that half of all US patents have been granted in the 28 years after March 16, 1991.²⁴

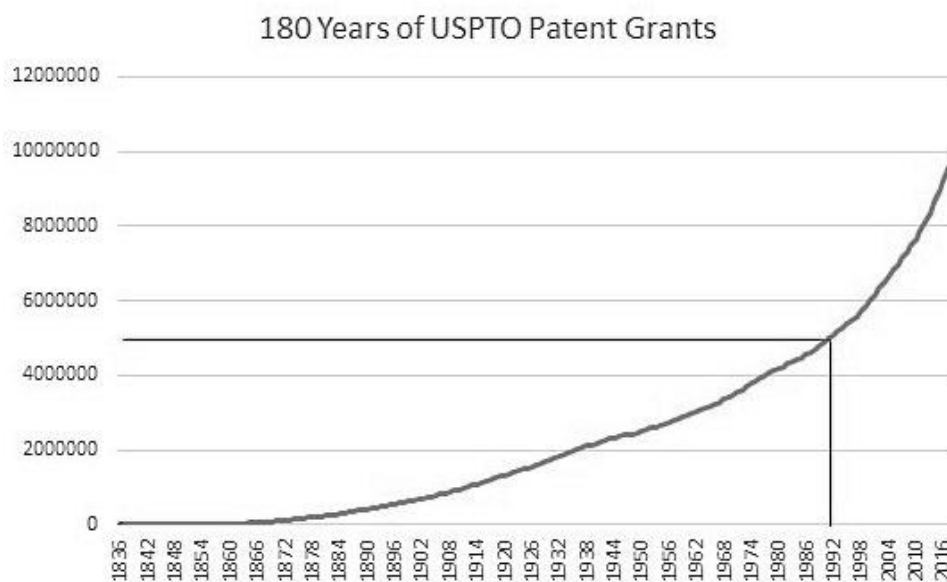


FIG. 02 Graph of US Granted Patents Year-by-Year

²⁴ The US Patent Office burned in July 1836, and many of the few thousand early patents were lost. After the fire, the Patent Office began routinely publishing patents. The midway point of US patenting would have moved up since 2016 given that the USPTO has issued more than one million new patents since 2016. *See, also*, Footnote 119.

We know that the tone and tenor of patent assertions has undergone various developmental stages over the past few decades. In the early years, many large firm cross licenses often focused on quantity over quality.²⁵ Large patent-owning firms came to understand that this was an efficient licensing procedure when it came to transactions among themselves. But this approach was not downward scalable when a large portfolio interacted with a small one. Among other things, issues such as invalidity and infringement can be remarkably well studied for a small portfolio, but the same process is often too uncertain to justify the expense involved for a large portfolio.

2.6 US Patent Litigation

Patent litigation in the US involves the federal court system because the US Patent Act is a federal statute.²⁶ The US is often believed to provide one of the world's strongest patent systems, if not the strongest, primarily because of the possibility for significant damage awards.²⁷ Among other things, the US gives patent plaintiffs the choice between an award of lost profits, a reasonable royalty, or a hybrid, in addition to the possibility of willful infringement damages. Successful plaintiffs may also obtain a court-order injunction against further infringement. US patent litigations themselves often involve tangled webs of legal considerations, concerning factors such as patent claims, the defendant's products, the relevant prior art, damage calculations, and many other matters (Menell *et al.*, 2017; Lemley & Shapiro, 2005).

Patent litigation results in some \$12.8 billion annually in costs to alleged infringers in the US, according to some estimates (Bessen *et al.*, 2018). In the pro-patent era, US patent litigation has become a frequent tool for many technology firms. Nevertheless, patent litigation is still rare when compared to the number of issued patents,²⁸ and most litigants settle pre-trial (Lanjouw & Schankerman, 2001; Lemley & Shapiro, 2005).

²⁵ Metrics ranged from measuring patent stacks (*See, e.g.*, Ron Epstein, Chief Executive Officer, Ipotential, LLC, Remarks before the Federal Trade Commission, The Evolving IP Marketplace: The Operation of IP Markets: The IP Marketplace in the IT Industry (May 4, 2009) '132.) to essentially random patent sampling (Fred Telecky, Senior Vice President and General Patent Counsel, Texas Instruments Corp., Remarks before the Federal Trade Commission, Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy (Feb. 28, 2002) 743, quoted as saying "[F]or [TI] to know what's in [its patent] portfolio, we think, is just a mind-boggling, budget-busting exercise."). The sheer volume of patents involved in some major cross licenses and the high cost for determining which patents in a giant portfolio might apply to a given competitor, coupled with factors ranging from determining appropriate royalty rates to considerations of potential invalidity for some patents in a given portfolio, further underlined the logic behind patent licensing among large firms (*See, e.g.*, *Tex. Instruments v. Hyundai Elecs. Indus.*, 49 F. Supp. 2d 893, 901 (E.D. Tex. 1999), the court noting "[I]t is almost impossible on a patent-by-patent, country-by-country, product-by-product basis to determine whether someone is using a firm's patents.").

²⁶ Title 35 of the United States Code, last amended in 2011 by the Leahy-Smith America Invents Act (AIA). Each of the 50 US states also maintain court systems, but these courts may not try cases arising under federal law.

²⁷ Not only due to the expanded damages theory available in the US but also to the US' position as the world's largest economy. The reader is invited to consider how similar scenarios might play out under one of the world's other legal jurisdictions.

²⁸ In 2020, US courts added 4,060 new patent infringement litigations to the ongoing litigations. Nearly 11,000 patent infringement cases have been filed in federal courts in the past three years alone. Bailey, R. Lex Machina Releases its Annual Patent Litigation Report, 17 March 2021; <https://lexmachina.com/blog/lex-machina-releases-its-annual-patent-litigation-report/>; site last visited 2021-08-23.

The rise of patent litigation in the US during the pro-patent era has been well-documented and empirically analyzed. From the characteristics of “litigated” patents (Allison *et al.*, 2003) to the characteristics of “most litigated” patents (Allison *et al.*, 2009). The studied characteristics include things like analysis of forward citations of litigated patents (*see, e.g.*, Harhoff *et al.*, 2003; Allison *et al.*, 2009) and crafting patents for specific types of patent assertions (Feng & Jaravel, 2020). Various aspects of patent litigations themselves have been examined (*See, e.g.*, Lemley *et al.*, 2018; Galasso & Schankerman, 2015; Allison *et al.*, 2013), including empirical analysis of specific litigation activities such as claims construction (Anderson & Menell, 2019).

Likewise, plaintiffs, the parties bringing patent infringement litigations, have been examined. In a study of high-tech patent suits, Chien found that lawsuits between large firms represent 28% of all patent litigations, and these litigations tend to last longer than other litigations (Chien, 2010). Litigation patterns also suggest that firms in their patent assertions exploit asymmetries with their peers. Among 575 hardware and software “large firm” lawsuits between 2000 and 2008, less than a third of the suits involved direct competitors. Roughly 40% of the cases involved some degree of competitive overlap, but more than 30% of the litigations involved firms having no overlapping business lines. Chien’s findings are consistent with other empirical findings (*See, e.g.*, Bessen & Meurer, 2008).

2.7 Important Trends in US Patent Assertion

I now describe important trends that have implications for patent litigation and related licensing. During the pro-patent era, what might have once been a fairly simple arrangement within the innovation system has evolved into a complex IPR ecosystem (Kahin, 2008). As we have seen, competitive pressures encouraged some firms to innovate the application of patents as competitive tools in their own right. These efforts led to the development of enhanced patent exploitation tools, including but not limited to patent assertion programs. As a consequence, the evolving IPR ecosystem now features many kinds of entities, specialized business models, patent profiles, and patent strategies.

As shown in FIG. 2 above, competitive pressures motivated a surge in corporate patenting rates. Firms expended substantial funds acquiring patents, typically from their own R&D.²⁹ Once firms obtained large portfolios, many firm managers felt pressure to begin extracting value from these expensive corporate assets. Some firms developed proprietary and leveraging strategies and asserted their patents to obtain revenues directly from third parties. Other firms initially practiced, or proclaimed to practice, a defensive strategy (Lerner, Tirole, and Stroiwas, 2003) before later adopting a leveraging strategy. Thus, even the defensive accumulation of patents sometimes ultimately resulted in application of a leveraging strategy³⁰ (Chien, 2010).

While conventional firms still account for most patent filings, the patent sector’s most

²⁹ In the process of acquiring large portfolios, some firms arguably acted against their own self-interests.

³⁰ For example, prior to its acquisition by Alcatel, Lucent Technologies had slowly evolved from a defensive strategy to a leveraging strategy, developing a patent assertion unit with several hundred employees.

influential actors are: (1) large firms holding enormous portfolios and (2) aggressive NPEs.³¹ Both actors play significant roles in shaping US patent assertion activities and interact continuously with other participants such as individual inventors, small firms, research labs and universities. As we know, NPEs comprise firms that hold patents but commercialize the patents directly and do not typically manufacture products³² (Bessen & Meurer, 2012; Chien, 2012). NPEs attain their returns from non-market activities involving patent assertions, either litigation or aggressive licensing, by targeting the financial gains of firms that sell physical products and services. NPEs typically pose a financial risk but not a business risk to their targets. As presently understood, NPEs upset several theories, including that large firms benefit the most from IPRs (Reitzig *et al.*, 2010) and certain understandings about the functioning of technology markets (Granstrand *et al.*, 2014).

An NPE's leveraging strategy typically attacks its targets by employing at least one of three strategies: by threatening legal injunctions,³³ pressing for damage awards, and/or creating long-term switching costs (Henkel & Reitzig, 2007). The original NPE business model was pioneered by certain iconic persons³⁴ whose modes of operation have now shifted to more sophisticated tactics by larger entities. Of course, the early adopters pioneered certain procedures and practices that have endured (*e.g.*, the preference for contingency fee litigation arrangements). Reitzig found that the NPEs have become "more professional" over time, as one would expect for businesses that increasingly interact both adversely and cooperatively with large operating firms (Reitzig, 2007). Modern NPEs may operate across a wide spectrum of business models. Some NPEs sue established firms for infringement of patents they have acquired, and others develop their own technology and seek to commercialize it by licensing. Unlike public firms, many NPEs are not burdened by the need to manage investor expectations or minimize disruption to a core business. NPEs do not have competing demands for management attention and are invulnerable to countersuit,³⁵ thus giving them advantages in patent litigation over firms that make and sell products. These characteristics often enable NPEs to threaten more credibly exercise of the rights conferred by a patent than many other firms.

³¹ As mentioned, NPEs are known by a variety of names from "Patent Assertion Entities (PAEs)" to "patent trolls".

³² Mark Lemley and Nathan Myhrvold developed a taxonomy of twelve types of patent holders, eleven of which are non-practicing (Allison *et al.*, 2013). The entities in this taxonomy are identified as: (1) Acquired patents, (2) University heritage, (3) Failed startup, (4) Corporate heritage, (5) Individual-inventor-started firm, (6) University/Government/NGO, (7) Startup, pre-product, (8) Product firm, (9) Individual, (10) Undetermined, (11) Industry consortium, and (12) IP subsidiary of product firm. Some NPEs are considered "trolls," while others arguably should not be (Lemley, 2016). These differing profiles complicate characterizations about NPEs based on whether they do or do not practice their patents.

³³ Injunctions in NPE cases are less common after the US Supreme Court's decision in *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006).

³⁴ Jerome Lemelson pioneered the licensing of NPE patents and subsequently licensed his 600 patents for more than \$1.5 billion to nearly a thousand firms. According to one study, a single individual, Ron Katz, is an inventor on twenty of the top hundred most litigated patents (Allison *et al.*, 2013). Robert Kearns represents another famous lone inventor known for patent assertion. See *Kearns v. Chrysler Corp.*, 32 F.3d 1541, 1543 (Fed. Cir. 1994) and John Seabrook, *The Flash of Genius*, *New Yorker*, Jan. 11, 1993, at 39.

³⁵ A defensive strategy is useless against an NPE.

By 2012, NPEs represented more than half of all US patent infringement litigations, having risen sharply from less than a quarter in 2007 (Allison *et al.*, 2013; Allison, Lemley, Schwartz, 2017). The rise of aggressive NPEs has prompted further refinements to the exploitation techniques pioneered by the early adopters of the NPE business model.³⁶ The effects of NPE leveraging appeared to be felt most strongly in the Internet and technology sectors. One study compared Internet-related patents to non-Internet-related patents and concluded that the former were litigated 7.5 to 9.5 times more frequently than the latter (Allison *et al.*, 2013). In some minds, this created a perception that software patents were synonymous with NPE patents.

Patent mass aggregators (Paper-1) comprise a later evolution of the NPE model. Billions of dollars in new capital have flowed into this special class of NPEs, such as Intellectual Ventures, Acacia, RPX, Round Rock Research, and Fortress Investments, known as patent mass aggregators. These actors use their tremendous financial resources to accumulate giant patent portfolios and play significant roles in shaping the innovation system and interact continuously with other participants such as individual inventors, small firms, research labs and universities. Some state actors have also created similar patent mass aggregators, although they tend to keep fairly low profiles. The patent mass aggregators operate in a manner similar to NPEs in the sense that they do not typically bring new technology to the market but instead essentially tax those who have brought new technology to the market where the technology is ostensibly protected in some measure by patents held by the patent mass aggregator. Operationally, the patent mass aggregators may scan today's lucrative technology areas and then acquire issued patents that can be used to extract a return from the vendors of contemporary products and services.

The increasing commercial application of patents has led to the growth of patent markets, an increasing presence of intermediaries in these markets, and the growth of related services.³⁷ These markets increase the strategic space for firms, emphasizing a firm's abilities to monitor and seize external resources to gain competitive advantage (*See, e.g., Arora et al.*, 2001; Iansiti, 1997). Competitive pressures combined with the varieties of patents available for purchase have led to the development of various indirect strategies. Firms no longer need to rely exclusively on patents developed from their own R&D. Firms

³⁶ These refinements have consisted primarily of efficiency improvements coupled with greater investment capital.

³⁷ OECD, BMWI, EPO, Intellectual Property as an Economic Asset: Key Issues in Valuation and Exploitation, (2005), Berlin at 8. ("Many large firms have developed internal capabilities for patent management and licensing, but as in other markets a diverse set of intermediaries have also emerged to foster technology markets, more so in the United States than in Europe. Intermediaries include technology licensing offices at public research organizations, Internet-based portals, and private firms that offer advice and actively link buyers and sellers of technology. Each type of intermediary has a different customer focus and different level of involvement in transactions, but all play important roles in facilitating partnerships, ensuring confidentiality of partners in a transaction (*e.g., protecting privacy in negotiations to avoid competitors knowing about the parties' interests*), offering expertise (need to ensure that the deal corresponds to the parties' needs) and providing an external perspective on the negotiation.").

may purchase third-party patents to fulfill a variety of needs.³⁸

Specialized intermediaries have emerged to facilitate patent transactions between buyers and sellers.³⁹ Changes in corporate policies coupled with a slew of new patent buyers have expanded the market for patent sales.⁴⁰ Over time, these intermediaries have become increasingly specialized (Troy and Werle, 2008). Some intermediaries work towards the further development of a market for the efficient exchange of IP assets (Hagiu & Yoffie, 2013; *see, also*, Chesbrough, 2006). Patent brokers can conduct negotiations for the owners of NPE patents; patent valuation firms can assist in estimating licenses and litigation settlement amounts; and patent acquisition firms, such as auction houses, can assist in transitioning patents from one owner to a new owner. Patent law firms can support all of these functions as well as conducting investigations regarding the legal ramifications for new strategies.⁴¹

Many large firms have unused patent assets that are nevertheless expensive to maintain due to the payment of periodic maintenance and annuity fees (Chien, 2009). The IPR marketplace may assist such firms in disposing of their surplus patent assets. Among large firms, IBM, AT&T, 3Com, Dow Chemical, Ford Motors, Kimberly-Clark, Motorola, Philips Electronics, and Siemens AG have publicly sold patents. The increasing ease with which patents can be bought and sold has provoked some concern and fear.⁴² Public auctions comprise a noticeable trading platform, in part due to their novelty since most patent transactions occur in private, either by direct sale, brokered private sale, or private auction. Patent auctions facilitate transaction efficiency through changes in conventional governance structures (Tietze, 2011). Among other things, during an auction, buyers and sellers are not typically engaged directly. Auctions also typically practice uniform transaction structures through the use of templated legal frameworks, such as regularized due diligence procedures, consistent contracts, and consistent payment terms (*See*, Fischer & Leidinger, 2014).

Another application for patent sales comprises a “litigation defense” service (Paper-1). The ability to acquire in the market a patent asset handpicked at just the right time to satisfy the needs and requirements of a specific patent litigation could be of great value to technology

³⁸ For example, if a competitor has a product that threatens a firm’s own products, but the firm owns no pertinent patents of its own, the firm may purchase relevant patents and sue the competitor for infringement.

³⁹ *See*, Peter Detkin, Presentation at the Federal Trade Commission’s Hearings: The Evolving IP Marketplace: The Operation of IP Markets, FTC 11 (Dec. 5, 2008).

⁴⁰ Of course, some firms remain hesitant to trade IP assets partly due to a perception that selling IPRs in patent markets is akin to trading with “the enemy” (*See, e.g.*, Fawcett, 2008). Competitive pressures have over time somewhat thawed these historical attitudes.

⁴¹ Specialized patent law firms have been around for more than one hundred years. *See*, Bristows a reputation for firsts, <https://www.bristows.com/about-us/a-reputation-for-firsts/>; site last visited 2021-08-15.

⁴² *See, e.g., eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 396 (2006) (Kennedy, J., concurring) (“In cases now arising, trial courts should bear in mind that in many instances the nature of the patent being enforced and the economic function of the patent holder present considerations quite unlike earlier cases. An industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees. For these firms, an injunction, and the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to firms that seek to buy licenses to practice the patent.”).

firms. The potential of this litigation defense (or even offense) may explain why some of the largest technology firms became early investors and participants in patent mass aggregators that have provided such services. These firms may find the possibility of a defense fund essentially irresistible, even if these same firms might publicly disdain the NPE business model. Business is a form of communication, and market actors tend to replicate the behavior of others (*See, e.g.*, Williamson, 1996).

Patent pools associated with technical standards, while not a strictly US phenomenon, comprise yet another tool developed in response to competitive patent pressures.⁴³ Patent pools may be constructed along a variety of variables and for a variety of considerations. Pools may offer certain efficiencies for vertically integrated firms by enabling an industry cross-licensing mechanism (Layne-Farrar & Lerner, 2011). Among other things, patent pools may curtail infighting among competitors and allow a new technology to enter the market. Contributors to pools may own both patents and manufacture technology, and thus both pay and receive pool-related royalties.

⁴³ Such as the MPEG standard which is licensed through a collective organization known as MPEG-LA.

3. Research Methodology

This chapter describes the qualitative and quantitative methods employed to address the overall research topic. The chapter also discusses some methodology innovations arising from the research, as well as some background to the conducted research. My methodological approach has been primarily phenomenon based (*See, e.g., von Krogh et al, 2012*). My research design has typically involved phenomenon-based studies either consisting primarily of objective documents, such as patent assignment records or litigation records, or publicly available business records, or other objective data.

3.1 Data Sources and Data Collection

The particular research topics behind each paper essentially set the requirements for the data that would need to be collected. Paper-2 though Paper-5 explore aspects of specific patent infringement litigations. Among other things, I wanted to study patent infringement litigations in a wider context than a solitary litigation. Paper-4, which addresses RQ-1,¹ concerns all patent infringement litigations in the US in four selected years – some 14,000 individual patent litigations. Paper-5, which concerns RQ-5,² drills down on a smaller set of high-profile litigations, selected because substantial damages were at stake, suggesting that the firms took the litigations seriously.³ All four litigations studied in Paper-5 had completed the trial, appeal and in some cases re-trial stages. None of these litigations represent a unique, isolated event but instead represent an exemplar of a customized firm patent litigation strategy that extends over many years, which also indicates that an abundant amount of relevant data was available. Among other things, none of the plaintiff firms studied filed just one patent infringement litigation, and these firms have asserted the same patents in other litigations. In short, one can study the trajectory in specific outcomes by the same cohort over a period of years (decades in most cases). Thus, the litigations studied in Paper-4 and Paper-5 produced an enormous amount of highly relevant data about their trials⁴ and their contexts, which contrasts to the many litigation cases which settle (*see, e.g., Lanjouw & Schankerman, 2001; Galasso & Schankerman, 2015*).

Data collected in Paper-4 and Paper-5 comprised all non-sealed documents with additional data gathered for Paper-5 comprising related litigations and appeals taken in the cases. To answer RQ-5, Paper-5 focused on understanding each plaintiff's litigation strategy, how the litigation related to other commercial activities by the firm, and any further decisions taken during the litigation. I triangulated each litigation's proceedings with data from other sources such as annual reports and collected additional follow-up data where needed. The empirical

¹ RQ-1: How extensive is patent litigation brought by NPEs in US federal courts?

² RQ-5: What types of managerial decisions are included in patent litigation strategy, and how do they relate to the commercial setting?

³ Moreover, as discussed each litigation passed all the way through trial judgment, which also showed that the firms had distinct objectives that they wanted to achieve.

⁴ Although some proprietary data was filed under seal in the cases studied, captions for the restricted data did not indicate that the material was particularly pertinent for my purposes.

base of the four litigation cases⁵ studied in Paper-5 comprise data from the four litigation cases themselves, amounting to well over 2,000 pages per case at the trial level, several hundred additional pages for each case at the appellate level, patent data, and data from other sources, including research articles, journal articles, annual reports for plaintiffs and defendants, media outlets, such as press releases, and complementary litigation statistics, to provide appropriate data and maximize opportunities for triangulation (Jick, 1979; Langley, 1999).

Similar data sources were also examined in Paper-1, although RQ-2⁶ also suggested examination of government records for key states, such as Delaware, Nevada, Washington, and California, Internal Revenue Service tax filings for non-profit entities, US Securities and Exchange Commission data for 10Q and 10K filings by corporations, and published notices from the US Federal Register. Paper-2 and Paper-3 (RQ-3⁷ and RQ-4⁸) called for similar data collections to the other papers but with more focused litigation and case law research.

Table-02 summarizes the various data sources for Paper-1 through Paper-5:

	Paper-1	Paper-2	Paper-3	Paper-4	Paper-5
<i>Litigation Documents</i>	✓	✓	✓	✓	✓
<i>Corporate Documents</i>	✓	✓	✓	✓	✓
<i>Government Documents</i>	✓	✓			
<i>Business Sector Data</i>		✓			✓
<i>Patent Document Data</i>	✓			✓	✓
<i>Patent Assignment Data</i>	✓	✓		✓	
<i>Patent Prosecution History</i>	✓			✓	✓

Table-02 Data Sources

Empirical data from the litigations intensely studied in Paper-5 and Paper-4 were combined with data from non-litigation sources to create the case description. A similar process was followed for Paper-2 and Paper-3. Data from different sources for all papers confirmed strategies and relationships between strategies (*See, e.g.*, Yin, 1994; Dubois & Gadde, 2002). Non-litigation data often supports or augments litigation data for the patent litigations, and patent data may further confirm litigation and non-litigation data.

As an example of data collection employed in these five papers, consider Paper-4. We performed our study using data collected from Lex Machina.⁹ At the time, Lex Machina's database contained more than 130,000 intellectual property and antitrust cases culled from

⁵ I note that the "cases" examined in Paper-5 relate to plaintiff-side behaviors during litigations as opposed to the actual litigation case between the plaintiff and the defendant, although what happened in the litigation case obviously had an impact on the plaintiff's behavior studied in the case.

⁶ RQ-2: What is the nature of the patent mass aggregator, a highly capitalized firm that buys thousands of patents to form a massive patent portfolio that it commercializes by patent assertion?

⁷ RQ-3: How extensive is patent privateering, NPE patent litigations that have been sponsored by a third party, and what are the core parameters of this strategy?

⁸ RQ-4: To what extent can targets of privateering attacks retaliate against the sponsors simply for privateering alone, as opposed to other causes of action?

⁹ Lex Machina, now owned by legal giant LexisNexis, was a Silicon Valley startup spun out of a joint project between Stanford University Law School and Stanford's Computer Science Department in late 2009; <https://lexmachina.com/about/>; site last visited 2021-08-15.

the US government litigation service known as PACER.¹⁰ Lex Machina applies a state-of-the-art natural language processing text classification system to the culled case documents to create case datasets. We expanded this data in our litigation database by accessing information from the USPTO about the specific patents asserted in the litigations. In particular, we examined pertinent records from the USPTO's assignment database¹¹, the USPTO's patent database¹², and the USPTO's PAIR database¹³, which contains information about a patent's prosecution history.

Paper-4 examined every US patent infringement litigation filed in four years: 2007, 2008, 2011, and 2012. This involved analyzing roughly 14,000 cases and almost 30,000 patents asserted in those cases. These years were chosen to provide two earlier reference years to be compared with two later years. Using data from 2011 and 2012 also allowed researchers to take a preliminary look at possible effects from the patent law changes in the America Invents Act.¹⁴ To examine the data, we extracted every electronically available patent case for the years 2007, 2008, 2011, and 2012.¹⁵ We then applied a classification metric to the plaintiffs to place the litigations into categories such as large firm, university, foundation, and NPE. In this process, we were able to categorize almost 99% of the plaintiffs in our dataset. We also examined a number of other issues, particularly matters pertaining to the NPEs. We applied statistical analysis to the plaintiffs to determine the percentage representations for each of the plaintiff categories year by year. This allowed us to determine that the percentage of NPE litigations had risen substantially between 2007 and 2012 to now exceed more than half of all patent infringement litigations in the US.

3.2 Legal and Historical Research Methods

Paper-1 through Paper-3 and Paper-5 called for a measure of legal research, including case law research. This research applied existing case law (recall the importance of case law in the common law tradition) as a methodological touchstone against which any prudent commercial actor would be compelled to test novel patent assertion strategies against particular targets. For example, Paper-2 and Paper-3 refer to a new phenomenon (patent privateering) that might be available only under US law. As a result, the legality of this phenomenon needed to be explored to verify that it did not violate any obvious legal precedents under existing case law.¹⁶ Since there is an absence of case law related to many novel patent commercialization strategies, *per se*, I assumed that a firm considering a novel patent exploitation scenario would likely seek legal advice regarding the possibilities for and

¹⁰ Pacer tracks all 94 District Court sites, International Trade Commission's EDIS site and the USPTO site. PACER is the administrative database for the US federal courts, and EDIS is the International Trade Commission's website.

¹¹ <http://assignments.uspto.gov/assignments/?db=pat>.

¹² <http://patft.uspto.gov/>.

¹³ <http://portal.uspto.gov/external/portal/pair/>.

¹⁴ The AIA was signed into law in September of 2011.

¹⁵ We excluded declaratory judgments using Lex Machina's automated declaratory judgment classifier and supplemented this with manual exclusion where needed. Since NPEs do not make products and are thus not threatened with claims that they are infringing someone else's patent, they tend not to file declaratory judgment cases.

¹⁶ This does not mean that the technique studied is legal, but it does mean that it is not obviously illegal.

limitations of such a strategy—and the attorneys providing such advice would also be compelled to analyze existing case law in order to predict the range of claims that an opposing party could bring and how a court would react to them. Thus, my legal research for Paper-1 through Paper-3, and Paper-5 attempts to replicate what such advice would resemble under the assumption that such advice would define the effective limits for a new strategy, at least until a body of case law develops in its own right pertaining to the novel strategy directly. This methodology mirrors that of the early American legal realists, particularly Holmes' predictive theory of law (Holmes, 1897). Legal realism assumes that the boundaries of a commercial behavior not specifically and expressly subject to legal prohibition or regulation will likely be pursued by a reasonable commercial actor in terms of something akin to a cost/benefit analysis.

American academic legal research resembles the historical method (*See, e.g.,* Jordanova, 2016). The historical method has been a helpful qualitative method in my research for Paper-2 and Paper-3. Law, especially in the Anglo-American legal tradition, closely involves history. First, there are the historic cases that have become precedential opinions. At times, unearthing the background of earlier cases calls for the application of historical methods (Jordanova, 2016). For example, Paper-3 explored the historical development of certain tortious causes of action under English common law, which could potential apply to the novel strategy being investigated.¹⁷ Historical approaches are often critical because it sometimes becomes important to know how and why particular laws came about. Historical research may point in interesting directions and may show that some of the reasons for a particular law coming into being no longer apply (Dent, 2009).

While my research has centered on US law, aspects of comparative law also became relevant for Paper-1 through Paper-3, and Paper-5. Comparative law comprises the study of the differences and similarities between the laws of different countries, different regions, and different times (Gerber, 1998). Among other things, it has sometimes been useful to understand how and why something possible in the US is not possible elsewhere or is possible but in such a diminished form as to be commercially useless. Comparative law also resembles cultural anthropology (Sacco, 1991). The essential aim of comparative law is better knowledge of legal rules and institutions in order to acquire knowledge of the different rules and institutions that are compared (Sacco, 1991).

3.3 Case Study Methodologies

Paper-5 is a multiple case study¹⁸ of four US patent infringement litigations in the ICT sector. Various case study methodologies can be applied to IP management research, such as using grounded theory as a method for analyzing the data that comes from IP management case studies (Glaser & Strauss, 1967). The paper particularly focuses on the variety of exogenous and endogenous contexts that may impact a firm in how it plans, designs, and

¹⁷ Here, the historical development of the tortious interference with business relationships in the common law, dating back to *Tarleton v. M'Gawley* in 1793.

¹⁸ As mentioned earlier, the “case” studied was not the case of the plaintiff versus the defendant but the case of how each of the four plaintiffs studied maneuvered themselves before and during the litigation.

supervises the attainment of its commercial objectives during a specific patent litigation as well as a related series of litigations. Among other things, Paper-5 explores the plaintiff firms in the litigations studied to gauge how actively these firms employed legal considerations as inputs to an overall management process.

Similarly, the research for Paper-1 was primarily a phenomenon-based case study on a single case that included an enormous amount of hard data¹⁹ on the firm studied and its business practices. In any event, I was able to induce quite a bit about the behavior and operating conditions for this firm from the enormous amount of data collected.

3.4 Enhanced Methodologies – Chaining Techniques

Paper-1 through Paper-5 benefited from enhanced data collection methods. The enhanced methods were developed for Paper-1 and were subsequently applied and refined in one form or another to the other papers. Paper-1 concerned identifying the non-public, hidden patent holdings of a large patent aggregator. This aggregator had let it be known that it held thousands of patents in some number of shell companies, but the patents and the shell companies were not publicly known or identified. Beginning with an article that disclosed a tiny number of the shell companies, I searched the USPTO assignment records to identify the patents held by these shell companies. I then examined the file wrappers for the identified patents to determine matters such as the legal counsel, the name of the person signing the power of attorney for the application, attorney docketing information and other matters. I also researched corporate records for this initial set of shell companies. In addition, I also noted the names of the parties (firms, universities, and individuals) who sold patents to the shell company.

I assumed that some of the sellers might have sold other patents to the aggregator, so I searched the assignment database for other sales of patents by the same sellers to companies having the “limited liability company” form,²⁰ which was the corporate form used by this mass aggregator to hold all of its patents. If I found other sales, I examined the patent file wrappers to determine the characteristics identified above.

I also began a list of identified employees at the patent mass aggregator. These were primarily the employees who signed powers of attorney documents. This list proved useful because where a name from a verified shell company appeared in another case file for another shell company, then this suggested that this new shell company might also be owned by the patent aggregator.

In my search of state corporation records, particularly Nevada corporate records, I noted that other firms were identified as “managers” of known shell companies. The Nevada corporation site allowed me to search for the firms managed by a particular manager. Repeated application of this procedure added some 500 other shell companies to the list. Many of these shell companies held patents, and the patents had powers of attorney signed

¹⁹ See, e.g., Appendix C of Paper-1.

²⁰ The “limited liability company” corporate form in all 50 US states maximizes the secrecy behind the owners of the firm and its business. Even the state may not know who actually owns the company. The payment of taxes owing is another matter entirely.

by persons who I knew to be employees of the aggregator. This process also uncovered other patent sellers, and further iterative searches of those sellers revealed additional sales involving the LLC corporate form.

I eventually noticed that the attorney docket for some of the shell companies included an abbreviation for the name of the aggregator and not the shell company, the ostensible firm client.²¹ This revealed additional shell companies, verified by the presence of powers of attorney signed by known employees. I also made a list of known law firms working for the patent aggregator and searched the patent database for other LLC firms whose patents were prosecuted by the same law firm. Where found, I examined the patent file histories to identify any indicia of ownership by the patent aggregator.

I also found long lists of shell companies having nearly identical names that were associated with the patent mass aggregator. Exploring these groupings of shell companies, I discovered that they were associated with patents attained at auction. The patent aggregator had obtained such a high percentage of the patents in these auctions that it was a fairly trivial matter to track down the owners of the other patents sold in these auctions.

FIG. 03 provides a superficial overview of the chaining techniques employed in this research. As illustrated below, a first document (a power of attorney document here) bearing the signature of a person known to work for a given patent mass aggregator, yields a shell company name; a search of this shell company name in state corporation records yields a shell company manager (itself another limited liability company). Further searches using this shell company manager reveal another shell company, which itself yields another power of attorney document bearing the name for a person known to work for the patent mass aggregator. An assignment document related to patents owned by this shell company yields another shell company, also bearing the signature of another person known to work for the patent mass aggregator. Thus, this search revealed four previously unknown shell companies. For future explorations for new shell companies, this particular chain (in the third document) has also provided the name for a previously unknown law firm for the patent mass aggregator and a docketing number format employed by the patent mass aggregator.

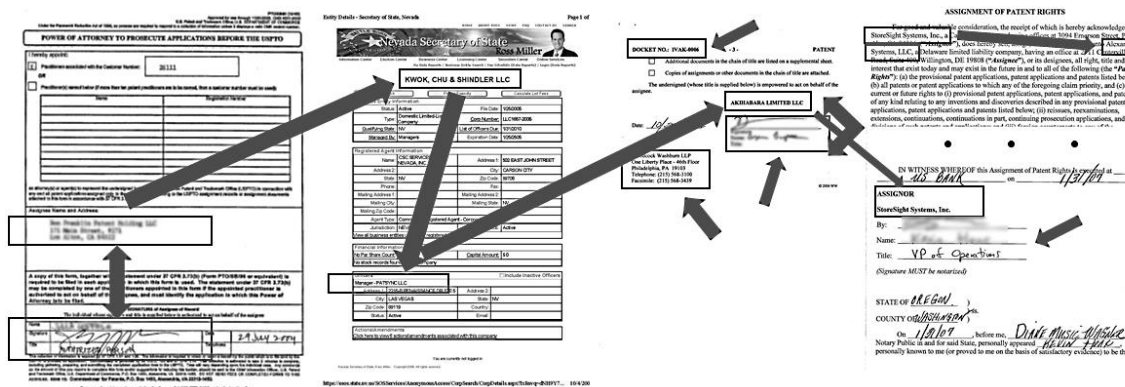


FIG. 03 Document Chaining Techniques

²¹ For example, "IV1234" as the attorney docket number for a shell named "Geronimo Computing LLC".

By iterative application of these chaining techniques,²² I was eventually able to find some 1,300 shell companies, collectively owning thousands of patents.²³ While some of the techniques employed might have been familiar to a patent litigation team, the collective and iterative application of these techniques was new to my experience, both professionally and academically. While the discussion above refers to Paper-1, I have subsequently employed versions of these techniques for Paper-2 through Paper-4. Paper-2 and Paper-3 were more concerned about identifying relationships between parties than developing a large database. Consequently, Paper-2 and Paper-3 involved searching more deeply in corporate records and litigation records.

Paper-4 was concerned with an enormous set of patent litigations. However, a subset of the techniques above were employed to examine specific characteristics of the litigations. In particular, scrutinizing small sets of the litigation cases revealed certain observations which were shaped into hypotheses that were then applied to the entire dataset. In conducting the research for Paper-4, I supervised a team of roughly 30 law students. The team received raw litigation data from Lex Machina for 14,000 patent cases that had to be sorted, refined, and then assessed. While Lex Machina's processes were automated, our team had to manually sort, refine, assess, and then assemble the results for detailed analysis. In supervising this team, several of the research techniques described in this section were further enhanced to find the data for our specific questions and some of these techniques have now been employed commercially.²⁴

3.5 Research Approach – Mixed Methods

Table-03 summarizes the methods and techniques applied in Paper-1 through Paper-5:

	Paper-1 RQ-2	Paper-2 RQ-3	Paper-3 RQ-4	Paper-4 RQ-1	Paper-5 RQ-5
<i>Case Study</i>	✓				✓
<i>Statistical Analysis</i>				✓	
<i>Legal/Historical Analysis</i>	✓	✓	✓		✓
<i>Comparative Law</i>		✓	✓		
<i>Data Chaining</i>	✓	✓		✓	✓

Table-03 Methods and Techniques

Paper-1 through Paper-5 employed various data collection methods, including patent statistics, patent file history analysis, litigation documents, quarterly and annual reports, federal and state corporate records, and patent assignment data. Original sources of information have been reviewed, such as annual reports submitted to government regulators,

²² These chaining techniques are effectively a form of bootstrapping, *e.g.*, finding one piece of data, points to another piece of data, etc.

²³ Appendix C in Paper-1 describes some of the methods used to collect the data.

²⁴ As possibly an indication of the value of these techniques, the law students on the team included Nichole Shanahan, the wife of Google co-founder Sergei Brin. Shortly after the paper's completion, Ms. Shanahan founded a patent analytics firm named ClearAccessIP, whose service offerings somewhat resembled the skills developed in Paper-4. The firm raised nearly \$7 million in capital to expand its operations. In a sign of how interconnected the actors in the IP system are, ClearAccessIP was later acquired for an undisclosed sum by Erich Spangenberg, an investor behind some of the most successful NPEs.

published patent applications and their file histories, state incorporation records, briefs, and rulings from particular patent infringement litigations, as well as texts of original laws and in some cases early versions of the same law. General business publications have been used for some specific pieces of background information.

As we know, many researchers have employed multiple methods in a process known as triangulation to increase the validity of their work (Bryman & Bell, 2007; Flick, 2009; Jick, 1979). Employing multiple measures may reveal some form of unique variance that might have otherwise been missed by single methods. In particular, qualitative methods can play a helpful role by extracting data that leads to realizations or discoveries that might have been missed by other methods. Triangulation allows a phenomenon to be examined from multiple perspectives, which may allow the insights that enable new understanding or deeper dimensions to emerge (Jick, 1979).

3.6 A Note on Interviews in Litigation Cases and Other Data Issues

Interviews were not conducted because all the litigations and patents studied in Paper-1 through Paper-5 pertained to US cases, and for US cases any data obtained would be highly subject to bias for the following reasons. First, the particular phenomenon studied is a business model that operates primarily under secrecy.²⁵ Second, US attorneys are strictly prohibited from disclosing client information *sua sponte* by Rule 1.6 of the American Bar Association Rules of Professional Conduct. For professional malpractice reasons, many US attorneys err on the side of caution, and those who reveal information even with client permission tend to heavily edit their disclosures.

Interviews with patent owners are equally unlikely to provide valuable information for similar reasons. Maintaining the attorney-client privilege, still applicable in these cases, requires that key information not be disclosed publicly. Many asserted patents involved were or could also be asserted against other firms in the future. Consequently, it would be foolish for an executive to disclose any substantive information. Many executives also caution against revealing commercial IP strategy publicly. Sven-Christer Nilsson, a former Ericsson CEO, once remarked about “IP strategy” that “You keep all that to yourself.”²⁶

Ericsson, one of the plaintiffs in Paper-5, offers an example regarding unfortunate public disclosures. In 2002, Ericsson joined a press release with other standard essential patent (“SEP”) telecommunication licensors, announcing that these firms intended to keep aggregate royalty rates for the W-CDMA standard at a “modest single digit level.” Nokia and NTT DoCoMo even advocated a maximum 5% aggregate royalty rate, aspirations that Ericsson did not affirmatively disavow. More than 15 years later, the judge in the *TCL v. Ericsson* case used this press release and other data to set a maximum 5% aggregate royalty rate for Ericsson’s 2G and 3G FRAND royalty share, significantly reducing Ericsson’s royalties.

²⁵ Among other things, it is largely unknown who precisely finances any given NPE. It is widely believed that the funds come from a spectrum of wealthy private individuals. The funding sources for Intellectual Ventures discussed in Paper-1 were unveiled only as a result of court-ordered discovery in a litigation case.

²⁶ See, Paper-2.

Ericsson also provides a further example of the reasons behind and benefits from confidentiality in licensing matters (which is also to say that an Ericsson executive would be excoriated by his peers for sharing this information with an academic researcher that might end up being published and available to competitors). In the *Apple v. Samsung* case, Ericsson was called as a witness, and the news agency Reuters filed a motion with the court to prevent Ericsson's testimony in open court from being sealed against public disclosure. Ericsson's attorneys argued:

The assumption underlying Reuters' argument is incorrect. "Everyone" will not be equally affected by an "across-the-board" disclosure. Many of the parties with whom Ericsson negotiates or has licenses, or may negotiate or have licenses in the future, do not have license information contained in the proposed Trial Exhibits and, therefore, will not have license information disclosed. Ericsson will be at a competitive disadvantage in dealing with parties that are not before this Court and with nothing at stake in these proceedings.

Ericsson and its licensing counterparts are rational actors, rational competitors. If the disclosure of license terms made the market more efficient, they would have done so. Moreover, contrary to Reuters' implication, the nondisclosure of license terms is not an anomaly in the business world. Ericsson and its competitors also do not disclose the terms of their major business contracts with suppliers or customers. (*Emphasis added.*)

Thus, as we can see, Ericsson provides a clear example of why interviews on patent licensing and litigation matters are likely to encounter trouble. If Ericsson will not reveal its licensing rates in a courtroom unless the courtroom is cleared of all spectators, an Ericsson manager would be unlikely to disclose the rates to a researcher studying royalty rates.

4 Summaries of and Contributions to the Appended Papers

This chapter summarizes the five appended papers included in the thesis. Readers are referred to chapter 5 and the appended papers for more detailed information. This chapter also includes descriptions of the author's contributions to co-authored papers.

4.1 “The Giants Among Us” (Paper-1)

As patenting strategies progressed, particularly in the US, it became apparent that an advantageous position for maximizing monetary gains from patents alone occurred when the patent owner produced no products that could be attacked by a countersuit from the defendant. This strategic realization encouraged next generation designs for non-practicing entities (“NPEs”)¹ who commercialized patents solely through litigation or licensing. Once the basic NPE business model had proved itself, a significant amount of investment capital (\$5 billion USD), primarily under the direction of Microsoft, was assembled to design Intellectual Ventures (“IV”), an elite NPE so large that within a few years it held one of the world's largest patent portfolios.² IV had stealthily conducted its operations in private although it was well-known to many of the world's largest firms. Paper-1 explored this new category of patent mass aggregator, its aims, organizational structure, tactics, and goals; how the firm exploited a gap in US industrial policy, and the further implications for policy from the existence of such patent mass aggregators. The article examined the potential implications, both positive and negative, of these mass aggregators for the patent system specifically, for innovation in general, and for the economy as a whole. The article concluded with some normative observations regarding whether the sovereign, in some guise, should become involved in the relevant market.

Author's contribution: The article was initially based on empirical research by the author that had led to the production of several reports about patent mass aggregators. The author worked with his co-author to first summarize the earlier reports and then transform the summary into an article that described the management practices of mass aggregators and the policy implications of mass aggregators. The article led to the author speaking at a hearing on NPEs held by the US Department of Justice and the US Federal Trade Commission, along with news coverage in some of the largest US media outlets.³

4.2 “Indirect Exploitation of Intellectual Property Rights By Corporations and Investors” (Paper-2)

As patent strategy evolved to include advanced designs for NPEs, further evolution and modifications of the basic NPE structure emerged. For example, corporate and investor involvement with the patent mass aggregators also led to the design of privateering NPEs, NPEs constructed for the purpose of enabling commercial aims and goals beyond the mere commercial gains from the NPE activity alone – in other words, “sponsored NPEs,” termed

¹ These entities are sometimes called “patent assertion entities (PAEs)” or “patent trolls.”

² But IV, sometimes called “a patent troll on steroids, was far from the only patent mass aggregator. Even some state actors have created patent mass aggregators.

³ A law professor at Beijing University asked for permission to translate the article into Chinese, which was granted, so the article also has a Chinese language version.

in this article “privateers” using as an analogy of well-known practice of state authorized piracy from a prior historical era. Paper-2 explored this new NPE category created by expert-level IP managers, its aims, organizational structure, tactics, and goals, how such firms exploit a gap in US law, and the further implications for policy. The article examined the potential implications, both positive and negative, of these privateers for innovation in general, and for the economy as a whole. Paper-2 concluded with some normative observations regarding whether the sovereign, in some guise, should become involved in the relevant market.

Author’s contribution: This was a single-authored paper.

4.3 “Practical Considerations in the Indirect Deployment of Intellectual Property Rights By Corporations and Investors” (Paper-3)

This article focused on the design considerations of the privateering strategy discussed in Paper-2 and examined the privateering NPE itself, illustrating a complex series of tasks that an elite IP manager must complete in making a successful privateering operation. These tasks include protection for the sponsor of the NPE, such as methods of ensuring anonymity within the US legal system, and protections from legal liability if such a sponsorship relationship is discovered. Paper-3 investigated a variety of forms of potential liability and concluded that no form of liability would be generally applicable but might be applicable to certain actors under certain circumstances. In short, Paper-3 concluded that a well-design privateering operation in the US could maximize the anonymity of the privateer’s sponsor while also minimizing the potential liability of the privateer’s sponsor from the target of the privateering operation and from government regulators.

Author’s contribution: This was a single-authored paper.

4.4 “The AIA 500 Expanded: The Effects Of Patent Monetization Entities” (Paper-4)

The US America Invents Act (“AIA”) required a survey by the US General Accounting Office (GAO) to determine the percentage of NPE litigations among US patent litigations. The GAO commissioned the author’s Paper-1 co-author and staff from Lex Machina, then a recent Stanford University spinout, to write a report that sampled 500 patent litigations over five selected years. The survey controversially showed that NPEs brought half of all US patent litigations. In response to the controversy, the main author of the AIA report asked the author to lead a study of “all” patent litigations (14,000 litigations) in the US for four years that overlapped with the original AIA survey. This new study was otherwise tasked with the same investigation as the original report. This more massive project (Paper-4) showed that NPE patent litigations were even more frequent than shown in the survey report, having risen well beyond half of all US patent litigations.

Author’s contribution: The author organized a team of nearly 30 graduate law students to analyze and process the data obtained from Lex Machina. The author’s own analysis of the cases revealed that only a few of the cases were reported to the USPTO as required by law. The author also noticed that many of the litigated patents had recently been transferred to the NPEs, so the team was also asked to track the sales dates for all patents litigated by the

NPEs. As a general matter, the team employed a subset of the techniques that the author had developed for Paper-1, discussed in Chapter 3. In addition to organizing, instructing, and supervising the research team, the author wrote large sections of the article, contributed to its planning, editing and overall shaping.

4.5 “Patent Litigation Strategy: Battling on the Boundaries of the Firm” (Paper-5)

Patent litigation has become a common activity for technology firms. Despite the high impact of patent litigation on technology firms, only limited efforts have been undertaken to understand firm management decisions made during litigations. The article focused on the role of commercial context in litigation design, management, and objectives among a series of patent infringement litigations brought by four firms in the ICT field. Paper-5 suggests that patent litigation is a key strategic activity that demands attention from firm leaders. Moreover, patent litigation is a matter of design involving multiple high-level decisions and this design must be aligned with the commercial setting. When properly integrated with strategy, patent litigation or at least readiness for patent litigation is a powerful source of competitive advantage.

Author’s contribution: The author conducted the research into the four litigation cases and prepared an initial draft article. Two co-authors joined the article to contribute to further analysis and grounding in strategy theory.

5 Main Results

This chapter addresses the research questions by linking the results of the appended papers and the relevant literature pertaining to patent assertion. This chapter has several thematic parts in which the papers and their findings are revealed in light of the research undertaken, the prior literature, and the range of the findings' applicability. Paper-1 through Paper-5 and their specific insights and discoveries are reviewed. Several different topics and themes are discussed that arise across all of the papers or combinations of them. This chapter can only offer a concise summary of some of the important results, and additional results and interpretations are available in the appended papers.

As we know, a common background for all of the papers pertains to events that unfolded as a result of the pro-patent era (Granstrand, 2000; Granstrand, 1999; Kiebzak, *et al.*, 2016), brought about by changes to the intellectual asset regime in the US. During this period, US patents became more likely to be found valid in litigations (Henry & Turner, 2006). This outcome, coupled with a tendency towards higher damage awards, sparked an increase in the volume and frequency of patent litigations (Chien, 2010; Merz & Pace, 1994) and a greater increase in patent application filings (Granstrand, 1999; Hall, 2005; Hall & Ziedonis, 2001).

5.1 The Variety of Patent Litigation Contexts and Firm Objectives

US courts do not inquire why a given plaintiff has sued a given defendant for patent infringement. The law's focus on the case in chief is reasonable but closes an inquiry that may be interesting for reasons beyond the legal merits of a specific dispute. As we know, IP strategy and firm strategy often intertwine (Reitzig, 2007; Cho *et al.*, 2018) at an interface amenable to design by firms to maximize their outcomes. Recalling, RQ-5 ("What types of managerial decisions are included in patent litigation strategy, and how do they relate to the commercial setting?"), Paper-5 examines four patent litigation cases to highlight the various and unique contexts navigated by plaintiff firms as they traverse their way through the complex choices available in the IP strategic arena (*e.g.*, Somaya, 2012) both prior to and during litigation.

The four plaintiffs studied brought their litigations¹ after determining that their patent assets could correct for various competitive deficiencies. Paper-5 revealed patterns in firm litigation management, showing that firms skilled at employing patent litigation adjusted their litigation strategies to achieve particular objectives. Of the four firms studied, no two firms had the same objectives, which also reflected their litigation propensities and choices of defendants. As competition encroached upon its domain, Apple was forced to add patent infringement litigation as a tool to support its brand. Ericsson, another large multinational firm, had come to rely on licensing for a substantial portion of its profits and was compelled to concurrently engage in litigations worldwide to support its licensing efforts, which made it less flexible in concluding settlement agreements with individual defendants. In contrast,

¹ These firms initiated and controlled the litigations. Recall that US litigators are required to give control over litigations to their clients under Rule 1.2 of the US Model Rule of Professional Responsibility, *cf.* fn. 13.

Akamai used patent infringement litigations as a tool for acquiring rivals.² Leidos/VirnetX was an outsourced commercialization arrangement involving a large firm Leidos that sold a patent collection to an NPE VirnetX because Leidos had no interest in developing its own patent commercialization business. This operation has proved very successful for Leidos while causing only minimal distraction to its management.

Table-04 summarizes the exogenous and endogenous contextual considerations that shaped the plaintiff firm litigation decisions in the four cases examined in Paper-5. The exogenous contexts examined, both narrowly (the precise litigation studied) and broadly (the plaintiff firm's wider environment and over time), comprised the business and financial "risk" prompting the litigation, the commercial "opportunity" presented by the litigation, the impact of the litigation on "third parties," and the "litigation setting" comprising elements such as pertinent changes in laws, legal interpretations, and courts. The endogenous contexts examined, both narrowly and broadly, comprised whether the plaintiff firm had recently obtained new senior management personnel, whether the plaintiff had changed its commercial management strategies, including new/changing business directions and initiatives, and the plaintiff firm's willingness to end/settle litigation. I observed an interesting prevalence of third-party considerations and an alternation between settlement and persistence between the broad and case specific contexts for all of the cases but Apple.

Firm & Context		Exogenous				Endogenous		
		Risk	Opportunity	Third Parties	Litigation Setting	New Mgmt.	Mgmt. Change	Settlement / Persistence
Akamai	Broad		✓	✓				Settlement
	Case	✓		✓	✓			Persistence
Apple	Broad	✓		✓		✓	✓	Persistence
	Case	✓		✓		✓	✓	Persistence
Ericsson	Broad	✓		✓			✓	Settlement
	Case	✓		✓	✓			Persistence
Leidos/VirnetX	Broad		✓	✓	✓	✓		Settlement
	Case		✓	✓	✓			Persistence

Table-04 Exogenous and Endogenous Contextual Characteristics

The plaintiff firms in my cohort enjoyed mixed success, and their litigations incurred different costs and benefits. Firms never have *a priori* information about the success of a prospective patent assertion decision (*see, e.g.,* Pisano, 2006). Patent assertions are optimally designed to both manage uncertainties and maximize contingencies.³

Firm	Litigation Time Frame	Patents Asserted	Use Case	Direct Reward	Cost
Akamai	2006-2016	3	Proprietary	\$54M USD	~ \$15M USD
Apple	2011-2019	26	Proprietary	\$650M USD	~ \$40M USD
Ericsson	2015-2021	5	Leveraging	-\$3M USD	~\$8M USD
VirnetX	2007-2021	4	Leveraging	\$1100M USD	\$143M USD

Table-05 Litigations Studied & Their Characteristics

² This technique had been so successful for Akamai that the firm was now so large this is acquisition technique was likely no longer desirable and possibly not possible due to the expiration of a key patent.

³ While I did not examine the defendant firms, I note that they likewise managed comparable uncertainties.

Table-05 filters the litigations from Paper-5 into two broad categories – proprietary (Akamai, Apple) and leveraging (Ericsson, VirnetX). As discussed earlier, proprietary litigations are brought to attack defendants who produce a competing product while leveraging litigations are brought purely to collect rents. Firms may assert patents against alleged infringers concurrently, sequentially, or not at all.⁴ This freedom complicates litigation management (*see, e.g.*, Bel, 2013). As discussed in Paper-5, Akamai, Leidos/VirnetX, and Apple attacked competitors sequentially. Ericsson, by contrast, maintains multiple concurrent licensing campaigns worldwide, and the outcome of one Ericsson patent assertion impacts the others since the assertions involve essentially the same patents. This relationship may explain why Ericsson doggedly pursued defendant TCL.

While the firms in the studied cohort chose affirmative litigation strategies,⁵ defensive strategies represent the default patent use case, requiring much less firm oversight.⁶ In its first 35 years, Apple relied heavily on its brand strength while employing a defensive patent strategy. When Apple determined that brand alone could no longer serve as its sole appropriability mechanism (Teece, 1986; Pisano, 2006; Hurmelinna-Laukkanen & Yang, 2022), Apple adapted to this new exogenous context by employing an affirmative strategy to regain competitive advantage (*see, e.g.*, Barney, 1991; Peteraf, 1993).

The firm behaviors revealed in Paper-5 apply, at least in part, to the other papers and research questions. Among other things, firm adjustments in, around, and during actual litigations verify a level of deliberate engagement. Aspects of the two leveraging litigations (Ericsson and VirnetX) are particularly insightful, although the two proprietary litigations (Apple and Akamai) are also helpful. Given that VirnetX is a privateering NPE for Leidos,⁷ this litigation is particularly applicable to many of the research questions since the litigation involves an NPE of a patent privateering form.⁸ Among other things, one notes that VirnetX expended more than \$143 million in legal fees to obtain roughly \$1.1 billion in litigation awards, settlements, and licensing fees.

5.2 Growth and Evolution of NPEs

The NPE business model based on patent assertion rose from the 1980s onward. By the late 2000s, many observers of the intellectual property world suspected that patent litigations involving NPEs had grown so frequent that they eclipsed patent infringement litigations by operating firms who typically practice the inventions for which they held patents. My RQ-1 addressed this question head on – “How extensive is patent litigation brought by NPEs in

⁴ US patent law has no analog to the dangers of not confronting infringers such as found in trademark law.

⁵ “Affirmative litigations” comprise both proprietary litigations and leveraging litigations but not defensive litigations. *See, e.g.*, Somaya, 2012.

⁶ Less oversight is needed for defensive strategies because they are passive, simply waiting for someone else to bring a patent infringement litigation to which a firm’s defensive portfolio is then searched for a relevant patent to include in a countersuit for patent infringement.

⁷ Leidos, a major equipment supplier to US intelligence organizations, was the original owner of the VirnetX patents. Leidos initially studied Microsoft’s infringement of the patents before deciding to create a third-party vehicle named VirnetX for monetizing the patents. By agreement with VirnetX, Leidos receives from 20 to 30 percent (depending on the target) of all the royalties, settlements, and litigation damage awards received by VirnetX.

⁸ The only research question not implicated by VirnetX is RQ-2 involving patent mass aggregators.

US federal courts?” Paper-4 was a significantly more massive effort than any preceding study and involved 14,000 patent litigations – all patent litigations filed in the US during four selected years. In terms of results and impact, the results of Paper-4 were widely accepted. The acceptance was expedited because studies by others of similar data showed a very similar trend (*See*, Chien, 2012; Lemley, 2013; Love, 2012).

The US federal court system does not track or inquire about the nature of entities involved in a patent litigation.⁹ Just as the legal system does not care about litigation motivations, as noted earlier, there is likewise nothing about a patent infringement litigation in the US where the patent owner’s own practice of an asserted patent matters to the court, apart from certain optional issues involving damage calculations. Consequently, there is no “tag” on litigation records associated with a patent infringement trial that indicates that status of the litigation plaintiff. In fact, there is no official status beyond “plaintiff.” Moreover, as it turns out, the definition of non-practicing entity itself raises some tricky issues (*Compare* Lemley & Myhrvold, 2007; Lemley, 2013 *with* Chien, 2009; Bessen & Meurer, 2008; Jaffe & Lerner, 2004). For example, universities who sue for infringement of their patents are effectively NPEs, although most observers do not find university rights assertions to be problematic. The slight differences between Paper-4 and other contemporary papers measuring NPE litigations are primarily variations in the definition of NPE.

As a further sign of the success of the NPE business model, Paper-4 also confirmed what many observers had suspected - there is a robust market for transfer of patents just prior to litigation. Tracing the ownership history of the NPE patents for which the transfer history was available,¹⁰ a majority (52%) of the patents asserted in the litigations studied had been transferred to new owner just prior to litigation. VirnetX discussed in Paper-5 offers a detailed example of patents transferred from an original owner to an NPE just prior to litigation.

As noted earlier, there is a division of labor of sorts in the patent assertion market, particularly in the NPE sector whose essential actors are the patent owner, the patent assertion financier, the patent licensing agent, and the patent litigator with each of these actors typically receiving a pre-defined portion of the rewards from patent assertion. Some of these roles may be conflated for specific NPEs. Further research would be required to determine how many of the new owners identified in Paper-4 were truly new to a given patent assertion or whether the change of ownership had something to do with division of labor and related rewards among the participants in an NPE patent assertion.

Analyzing the age of the litigated patents in Paper-4 revealed a surprising result. The age distribution of asserted patents showed a consistent decay from patent issuance – the newest

⁹ Rule 7.1 of the Federal Rules of Civil Procedure requires a notice identifying a litigant having more than 10% of its stock owned by a publicly held corporation. The rule’s purpose is not to discover litigation motives but to assist judges in disqualifying themselves due to conflicts of interest (*See*, Glen Weissenberger, *Federal Civil Procedure Litigation Manual*, Matthew Bender, 2010). The rule’s focus on parents and public companies limits its usefulness in disclosing the parties ultimately behind patent monetization, especially with NPEs and mass aggregators that are rarely public companies.

¹⁰ The transfer data for 84.9% of the patents studied was available via the USPTO’s patent assignment database.

patents issued were the most frequently litigated, whereas and the oldest patents were the least likely to be litigated. Our data shows that operating firms were even more likely to assert newer patents than NPEs. This observation suggests that plaintiff firms typically employ a propriety strategy (Somaya, 2016) against competitors by asserting their latest patents, which presumably match their more lucrative contemporary product offerings. NPEs meanwhile employ leveraging strategies (Somaya, 2016) in which they are more likely to assert any acquired patent. This age distribution may further indicate that parties are increasingly filing patent applications for the primary purpose of immediate assertion with specific litigation targets already in mind. The results also suggest that for patents in some technical fields, such as electronics, the full twenty-year term might be of limited actual utility for many firms, particularly firms following proprietary strategies.

Paper-4's analysis of NPE litigations also revealed another problem that had gone unnoticed in the literature. The government's own mechanism for notifying the public when patents have been asserted in litigation is woefully inadequate. Although federal law requires that district courts notify the US Patent and Trademark Office when patents are asserted, and the USPTO's main database in theory notifies the public, the information was not available in the USPTO database for more than two-thirds of the patents asserted in our database of four full years of patent litigations. This lack of notice puts small firms, particularly startups, at a disadvantage because they cannot easily tell if a patent has been asserted in litigation or determine which patent owners are asserting their rights against others without subscribing to an expensive commercial database.¹¹

Paper-4 documented that NPE litigations had come to surpass half of all US patent infringement litigations. This success encouraged evolutions of the basic NPE model, such as patent mass aggregators and patent privateers, which I will discuss next.

5.3 Patent Mass Aggregators

Once the NPE business model had proved itself, industrial-size versions of NPEs known as "patent mass aggregators" began appearing, forming initially somewhat in the shadows. RQ-2 explored the nature of these firms: "What is the nature of the patent mass aggregator, a highly capitalized firm that buys thousands of patents to form a massive patent portfolio that it commercializes by patent assertion?" Paper-1 addresses RQ-2 by studying one of the first patent mass aggregators, an entity in the IP field having enormous scale, financial resources, and wide array of service offerings. Our research showed that in a little more than five years, the patent mass aggregator studied had accumulated 30,000-60,000 patents worldwide, rendering it approximately the fifth largest patent portfolio of any domestic US firm and the 15th largest of any firm in the world. There are other patent mass aggregators and nations such as China, France, South Korea, and Taiwan even have their own patent mass

¹¹ For example, from 2000 to 2012 (12 years), the USPTO granted 13,500 patents on antennas. Only a tiny fraction of these patents has been asserted in litigation. (<http://patft.uspto.gov/> search term: class/H01Q (*e.g.*, IPC patent class H01Q: "aerials"). A firm trying to determine which patent owners have asserted their antenna patents would find the USPTO's databases unreliable in making such a determination. Resources for reviewing all 13,500 patents would not be practical for the vast majority of firms.

aggregators to varying degrees.

Paper-1 details how this firm, named Intellectual Ventures (IV), had obtained its massive patent portfolio surreptitiously using thousands of shell companies whose identities did not reveal their ultimate owner. Paper-1 also describes how IV had raised roughly \$5 billion in investment capital and from whom these funds had been obtained. The paper further describes how this new form of organization was structured and how it operated. At the time of Paper-1's publication, IV had not brought any patent infringement litigations, but one conclusion of Paper-1 was that the firm would be compelled to begin litigations eventually because the returns expected by its investors would correspond to such high royalty rates that prospective licensees would balk at paying them, leading to patent infringement litigation. This particular prediction proved fortuitous as IV subsequently launched a number of patent infringement litigations.

Working from public sources and using the methods described in Chapter 3, I developed a detailed picture of IV, tracing through approximately 1,300 shell companies and thousands of patents. I began by using information about IV's shell companies. I identified some 50 shells that appeared to serve a management function, one shell that served a trademark holding function, and a dozen or so shells that served investment functions. Of the remaining 1,200 companies, 954 companies had patents recorded against their names, and some 242 shells did not have patents recorded against their names, although some of them clearly held licensed-in patent rights. In more than 1,000 transactions, IV had acquired patents from individual inventors, corporations of all sizes, governments, research laboratories, and universities. Some of these transactions were direct seller-to-buyer transactions while others were conducted through intermediaries such as bankruptcy trustees and public auctions.

The funding sources for IV included some very large firms in the ICT industry, 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, the William and Flora Hewlett Foundation and Charles River Ventures. IV's licensing transactions and interactions with third parties were protected by strict nondisclosure agreements, and the structure of its business activities complicated getting a handle on the full extent of its activities.

Paper-1 discussed some of the additional services that IV offered, such as its "patent library" service, of a sort, in a program that IV called "IP for Defense."¹² This program allowed firms to purchase patents, sometimes possibly even on a temporary basis like borrowing a book from a library. As one example, Verizon paid \$350 million for a set of patent licenses and an equity stake in IV in 2008. TiVo subsequently sued Verizon for infringement,¹³ prompting Verizon to purchase a patent from an IV shell company, which was then put to

¹² Value-Added Solutions (VAS) Overview, Intellectual Ventures, <http://www.intven.com/ProductsServices/ValueAddedProducts.aspx>; last visited Nov. 15, 2011. This service no longer seems to appear on the firm's website.

¹³ Tivo sued Verizon on August 26, 2009. *TiVo Inc. v. Verizon Comm'cns, Inc.*, No. 2:09-cv-257, 2010 U.S. Dist. LEXIS 112320 (E.D. Tex. Sept. 17, 2010).

work as a counterclaim in the TiVo suit.¹⁴ IV appeared willing to repurchase at least some of the patents that it had sold in the “IP for Defense” program. This particular service offering put a new twist on the ability of firms to assemble defensive portfolios, effectively allowing firms to select just the right patent for their defense against a particular plaintiff firm.

Thus, Paper-1 responds to RQ-2¹⁵ by explaining the evolution of a massive NPE named Intellectual Ventures that with enormous capital resources was able to quietly become one of the world’s largest patent holders. Other discoveries in Paper-1 included the sources of capital backing this patent mass aggregator and the additional services offered by this patent mass aggregator that included a just-in-time defensive patent provision service for firms to use as counterclaims in patent litigations brought by other firms.

5.4 Patent Privateers

Paper-2 and Paper-3 address a new strategy, or a newly discovered strategy, involving the creation of specialized NPEs to complete specific objectives for their creators using patent litigation as a tool for achieving a desired end for its sponsoring firm, which could be anything from the type of competitive intelligence obtained during litigation to using a litigation, and its discovery procedures, to distract key executives at critical moments. This form of sponsored NPE evolved in the late 1990s, although the date of the first patent privateer has not been established. While practiced for an unknown number of years, this strategy was discovered by my research, and I named the strategy after the former practice of nations to authorize pirates during wartime to attack their enemies.

Paper-2 defined patent privateering as: the assertion of IPRs by an entity (the privateer), typically in the form of an NPE, against a target firm for the direct benefit of the privateer and the consequential benefit of a sponsor, where the consequential benefits are significantly greater than the direct benefits. The strategy, in part, relies upon the opaqueness of ownership and litigation motivation permitted in the US IP system. Patent privateering is an indirect strategy in that the IPRs asserted are not owned by the sponsor, although they might have originated from the sponsor’s R&D and/or once been owned by the sponsor.

After discovering privateering, I explored several research questions related to patent privateers. RQ-3, corresponding to Paper-2, specifically asks: “How extensive is patent privateering, NPE patent litigations that have been sponsored by a third party, and what are the core parameters of this strategy?” RQ-4, corresponding to Paper-3, asks, “To what extent can targets of privateering attacks retaliate against the sponsors simply for privateering alone, as opposed to other causes of action?”

¹⁴ The Intellectual Ventures shell was originally named Aerosound LLC before a recordation of its name change was made with the USPTO on February 17, 2010. *See*, USPTO Assignments On The Web, <http://assignments.uspto.gov/assignments/?db=pat> (search “Patent Number” for “5410344”). In a counterclaim added on February 24, 2010, Verizon asserted that all rights in the ‘344 patent had 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 Commc’n, Inc.*, No. 2:09-cv-257-DF (E.D. Tex. 2010).

¹⁵ RQ-2: What is the nature of the patent mass aggregator, a highly capitalized firm that buys thousands of patents to form a massive patent portfolio that it commercializes by patent assertion?

Both papers speak to the IP assembly of the specific patent assets to place into a special corporate wrapper for a privateering operation (*see, e.g.,* Granstrand & Holgersson, 2014; Granstrand, 1999). A corporation or investor sponsoring a patent privateering engagement effectively employs third-party patents as competitive tools. The privateer, a specialized form of NPE asserts the patents against target firms selected by the sponsor. The privateering sponsor's benefits might not necessarily arise *directly* from the third party's case against a target but may arise *consequently* from the changed competitive environment brought about by the third party's patent assertion. The sponsor's benefits might include nudging the target into a less favorable competitive position, downgrading the target in the eyes of a potential investor, facilitating the licensing of a larger collection of the sponsor's own IPRs, or causing a beneficial change to the target's share price and/or corporate valuation. The third-party privateer's motivation typically comprises collecting a litigation settlement or damages award.

Privateering sponsors can be divided into two primary types: corporate and investor. Corporate privateering (but possibly not investor privateering) jibes with classical management theory. Traditional models hold that firms outsource tasks that do not represent increasing returns or diminishing costs and retain tasks such as governance (Stigler, 1951 and Penrose, 1959). Sponsoring corporations tend to set the objectives for a privateering operation, assist in assembling the necessary resources for conducting the plan, and then step away from further hands-on management. For some corporate privateers, the privateering effort can be likened to outfitting an autonomous probe for a deep space mission. Once the probe has been launched, its creator loses a significant measure of control over it. Playing a more active role could show the corporate sponsor's hand, the very hand that must be obscured in order for the privateering effort to work properly (*See, Penrose, 1959, describing firm boundaries as sometimes being loose and not necessarily based on ownership, e.g., VirnetX and Leidos described in Paper-5).*

Patent privateering *per se* does not appear to run afoul of any US statutory, common, or equitable laws, as examined in Paper-3. Certain specific patent privateering scenarios, as discussed in Paper-3, may give rise to particular kinds of liability. A sponsor's potential legal liability appears to rarely exceed that of the third-party privateer who carries out the sponsor's patent assertion plan. Thus, if the privateer avoids liability, then the sponsor is also likely to avoid liability in most situations. Potential sponsor legal liability ranges from causes of action like tortious interference in business relations to patent misuse and might include market manipulation and/or antitrust violations in some circumstances. A sponsor's greatest potential liability, however, is not legal, but involves potential adverse business consequences, particularly from public exposure of the sponsor's involvement. Indeed, a sponsor's goals for a privateering operation are typically defeated by public exposure. For example, patent privateering only thwarts the counterattack paradigm of a defensive patent strategy so long as the sponsor, as an operating firm, can plausibly deny control over the privateer. Consequently, the sponsor often makes every effort to hide its involvement. Depending on the sponsor's objective, privateering may achieve the sponsor's aims well before a decision on the merits of the case brought by the privateer, further minimizing the

chance the sponsor will be identified to the target during the course of litigation.

Paper-2 and Paper-3 revealed an elite IP strategy that has possibly existed for some time but has not been revealed previously in either academic or professional literature. The papers explored the extent to which this strategy could be conducted by firms and investors to use third parties to achieve results that they would struggle to accomplish by themselves. Subsequent to the papers' publication, the author was asked by one of the world's largest firms to analyze the 59 NPE litigations pending against it. Of these litigations, 6 were brought by possible privateers, each having ties to other large firms. This multinational firm subsequently put in place a different set of screening procedures for handling new NPE litigations.

6 Discussion

My research has explored direct patent commercialization via patent assertion, particularly patent infringement litigation, a complex nonmarket activity whose successful undertaking requires knowledge, creativity, and financial resources, as well as a colorable infringement case. Despite these complexities, firms have increasingly employed patents as competitive tools via patent assertions, particularly in the United States. This chapter discusses some of the findings from my research, particularly within the observed gaps in the literature discussed earlier.

While the ideas market has grown substantially (*see, e.g.,* Lemley *et al.*, 2018; Hsu *et al.*, 2021; Arora and Gambardella, 2010, and Robbins, 2006) and offers a number of advantages (Chesbrough, 2003), a portion of the ideas market related to patents is known to suffer periodic failings of various types. As discussed, some of these failings may be viewed as contradictory. One failing concerns firms forced to take licenses because of the uncertainty and expense of litigation (Bessen & Meurer, 2008; Jaffe & Lerner, 2004). A somewhat opposing failure concerns firms that essentially allow their patent assets to waste due to the expense and difficulties of licensing them (Lemley & Myhrvold, 2007; Rivette & Kline, 2000). Other concerns question whether the leveraging of patents should even be allowed (Blind *et al.*, 2009).

With these issues in mind, I have investigated the direct monetization of patents in the ideas market via patent assertion during litigation and patent assertion by various forms of NPEs. This research has explored areas shielded by webs of secrecy. In the litigation realm, firms have no incentive for sharing their litigation decision-making processes.¹ Likewise, NPEs have no legal requirement and no incentive for sharing their ownership, financial goals, and operational procedures. Thus, researchers find themselves conducting explorations that take them off the public highways and into uncharted wilderness. Consequently, and in line with the old saying, we have found hints that the forest may be difficult to see at times due to a focus on the trees, which I will explore below.

To the rich literature in this field (Somaya, 2012; Lemley, 2016; Allison *et al.*, 2013), I offer five contributions. First, I offer insight into firm motivations during patent infringement litigations themselves, including an understanding around the context that drives some firms to persist with a patent infringement litigation after they have lost a key battle during the litigation (Paper-5). The literature on patent infringement litigations (*see, Allison, et al.*, 2013 and Anderson & Menell, 2019) helps illuminate the various contextual situations² that urges plaintiff firms forward³ in uncertain conditions, particularly when the litigation might seem lost. I further explore litigation context in consideration of the insightful literature related to novel patent commercialization strategies (Lemley & Myhrvold, 2007; Lemley, 2016; Arora & Fosfuri, 2003; Bessen & Meurer, 2008; Adelman, 1986). Second, my

¹ Even if the patent involved in a litigation was never re-litigated, public knowledge of the firm's thought-making processes could harm the firm in future litigations and would be unlikely to provide the firm any benefits.

² A form of management under uncertainty (*see, e.g.,* Foss & Klein, 2020).

³ To the appeal stage, for example.

research regarding litigation context and novel patent assertion business models led to my discovery of patent privateering (Paper-2 and Paper-3), a specific type of patent infringement litigation brought essentially for an indirect purpose. Third, I also explored another evolution of the NPE business model known as the patent mass aggregator (Paper-1), a class of NPEs characterized by their huge patent portfolios. I attempted to add to the relevant literature by analyzing the portfolio and patent licensing practices of an early patent mass aggregators (Paper-1). Fourth, the success of the NPE business model itself (Bessen & Meurer, 2012; Chien, 2009; Henkel & Reitzig, 2007) raised questions regarding the proportion of NPE litigations among patent infringement litigations in the US, an issue which my co-authors and I explored empirically in Paper-4, discovering that more than half of all patent infringement litigations in the US were brought by NPEs. Fifth, the synergistic import of Paper-1, Paper-2, and Paper-3 speak to aspects of NPE ownership not covered in the dense literature regarding NPEs, namely who finances and controls them and how these NPEs might fit into existing theories of the firm.

As debates about patent assertion in the ideas market raged among firms, scholars, and legislators over the past 20 years, US federal courts have continued awarding increasingly larger patent litigation damage awards. Likewise, the NPE, a once quirky business model centered on patent assertion by firms organized solely for the purpose of patent assertion, has grown to dominate patent litigation as much as large firm litigation. The NPE business model spawned two variations, the patent mass aggregator and the patent privateer. As noted below, countless papers have examined aspects of the modern NPE, but these papers rarely speak to the financing and control of these firms and their connections to larger firms. As such, NPEs are often presented as simply parasites feasting on the lifeblood of others' hard-earned labors. While there might be an element of truth to the parasite theory, Paper-1 dissects the patent mass aggregator to reveal that this type of NPE is essentially a service provider to large firms. Likewise, Paper-2 and Paper-3 report the discovery of another type of NPE, the patent privateer, that is essentially an alter ego of large firms. Thus, while key elements of the overall NPE world remain hidden, the discussion below explains that we know that both the patent mass aggregator and patent privateer forms of NPE serve and/or extend the reach of established firms, and we argue that these NPE forms align nicely with both the transaction cost theory of the firm (Coase, 1937; Coase, 1988; Williamson, 1975, 1996) and the resource-based theory of the firm (Penrose, 1959; Barney, 1991; Peteraf, 1993; Barney et al., 2011).

6.1 Firm Litigation Management

This research (Paper-5) has confirmed that plaintiff firm management control continues during the litigation event and that plaintiff firm decisions are consistent with the firm's immediate contextual situation as well as its wider circumstances.⁴ There is no point during which firm decisions are handed over to another party (*e.g.*, litigators), at least under leveraging and proprietary strategies, the two patent litigation strategies in which firms affirmatively initiate infringement litigations (Somaya, 2012). This research investigates the

⁴ The situation with defendant firm management is almost certainly identical, although defendant firm litigation management was not examined in Paper-5.

commercial contexts that drive patent assertion strategies to explore the effective limits of the patent right in a litigation context. While patent litigation data (*e.g.*, Paper-4) answers some questions, patent litigation data might suggest that firms behave robotically before and during litigations when commonsense and other studies tell us that firms are more adaptive during litigation (*see, e.g.*, Niiniluoto, 1993; Aristodemou *et al.*, 2020). Exploring patent litigations from their specific contexts (Paper-5) helps us understand the environment that led to a given litigation, and these circumstances may comprise factors essentially independent of the specific legal issues arising in a given infringement case. Some helpful research has revealed insights into aspects of firm pre-litigation motivations (Golden, 2014 and Somaya, 2016) and how patent disputes resulted in litigation (Encaoua & Lefouili, 2005; Bhagat *et al.*, 1994). I also note that aspects of the role of context have been examined for firms in leveraging litigations (Chen *et al.*, 2016), in the distribution of proprietary versus defensive litigations among firms in specific industries (Rudy & Black, 2018), as well as the role of context in seeking injunctive relief during litigation (Golden, 2014).

While helpful, these investigations generally stop at the litigation event itself, sometimes giving the impression that litigators become the firm's managers. However, we know that at least in the US, the plaintiff controls essentially all the decisions in a patent litigation.⁵ Accordingly, there is a continuum from the plaintiff's context preceding a patent assertion, to the plaintiff's patent assertion, and if the patent assertion becomes a litigation, the plaintiff's contextual issues remain and remain subject to being further shaped by the litigation event itself.⁶ One can expand outward from a single litigation event to consider the wider circumstances around the patent assertion. We learn, for example, that if a plaintiff has set about leveraging its patents throughout an entire industry (*e.g.*, Ericsson as discussed in Paper-5), then the plaintiff cannot relent from vigorously asserting its patents in a single litigation. My research also explored how plaintiffs, far in advance of litigation, configured themselves for patent assertion (*e.g.*, Paper-1, Paper-2, and Paper-3).

As patent commercialization grew, patent infringement litigations also grew. Paper-1 through Paper-5 recognize and explore these changing patent assertion strategies in a variety of ways. Paper-1, Paper-2 and Paper-3 address changing patent assertion models, which may impact the procurement of patents and/or the nature of patent prosecution. Paper-4 is primarily concerned with measuring the percentage of US patent litigations brought by NPEs. Paper-5 does not address patenting assertion strategies, *per se*, but it does suggest that a firm contemplating the application of litigation as a means for improving its bargaining position may likewise begin to acquire more patent tools specifically honed for this purpose (*e.g.*, VirnetX, Apple, and Ericsson as discussed in Paper-5). I observed in Paper-5 that Apple increased its patent filings ahead of its first patent assertions; we likewise know that VirnetX has continued to file more patent applications related to honing the claims of its

⁵ Rule 1.2: Scope of Representation & Allocation of Authority Between Client & Lawyer, US Model Rule of Professional Responsibility (adopted by the bar associations of all 50 states), American Bar Association, https://www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/rule_1_2_scope_of_representation_allocation_of_authority_between_client_lawyer/; site last visited 19 February 2022.

⁶ There is no point in a US litigation where the litigation becomes something "done" by the plaintiff's lawyers alone and on their own.

basic invention to specific infringers; we know that Akamai has likewise honed its patent portfolio to improve the firm's ability to curtail competition. Similarly, Ericsson has developed and protected patents that are outside the telecommunications requirements for its standard essential patent licensing program.

6.2 The Evolving NPE Business Model

This research (Paper-1 through Paper-4) has extensively examined the NPE business model that employs a leveraging strategy. NPEs are particularly adept at thwarting conventional defensive patent strategies since by manufacturing no products whatsoever, the NPEs are invulnerable to the countersuits for patent infringement that underpin a conventional firm defensive patent strategy (Paper-4).

The pro-patent era inspired certain highly skilled actors to explore the application of patents as commercial tools in their own right. This use of patents had been explicitly permitted under US law for more than a century (Mowery & Rosenberg, 1998). The Wright Brothers in their commercial lives, for example, were much more NPEs than aviation manufacturers.⁷ However, apart from frequency of litigation (Paper-4), contemporary NPEs may operate more professionally than the early NPEs who were typically led by sometimes quirky individuals. Modern NPEs are professionally organized and connected into a network of services from litigation to licensing, finance, and litigation (Reitzig, 2010). Among other things, many contemporary NPEs have no ongoing relationship with the inventors of the patents asserted – the litigations merely concern exploiting a property right (Paper-1 through Paper-5).

FIG. 04 illustrates the basic structural components for a contemporary NPE, which we see replicated in the later evolutions of this basic form. The essential components are: adequate capital for patent assertion, one or more patents, one or more licensing agents, and access to litigation counsel. Financial rewards in an NPE tend to be divided among these actors, *e.g.*, 20-30% to the financiers, 15-30% to the patent owner, 20-30% to the licensing agent if licensed without litigation, and 30-40% to the litigators operating on a contingency fee if litigation engaged. Most NPEs have the limited liability corporate (“LLC”) form, which in the US provides the greatest scrutiny from public view for a firm.⁸ Some NPEs have more elaborate structures, such as a related financing LLC that provides further separation from the NPE investors and the operations of the NPEs.

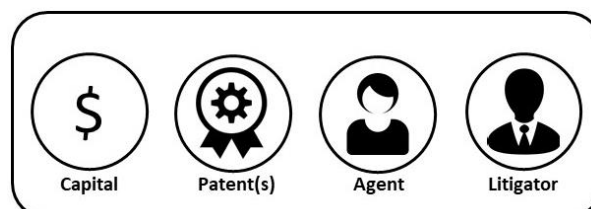


FIG. 04 Functional Components of a Conventional NPE

⁷ The Wright Brothers' patent assertions continued until the US government formed the Aircraft Manufacturer's Association and gave the majority of a mandatory licensing fee per aircraft to the Wrights.

⁸ VirnetX (Paper-5) is an exception to the LLC corporate form. VirnetX is a publicly listed firm, and its financial reports are publicly available.

Paper-1 through Paper-4 and related studies document the success and growth of the NPE business model. Like other successful business models, the NPE business model inspired modifications and evolutions of its basic form. Two of these evolutions, which I will discuss further are patent mass aggregators and patent privateers. As shown in FIG. 05, the NPE business model had proved so successful by the late 1990s that these two new evolutions of the NPE model emerged.

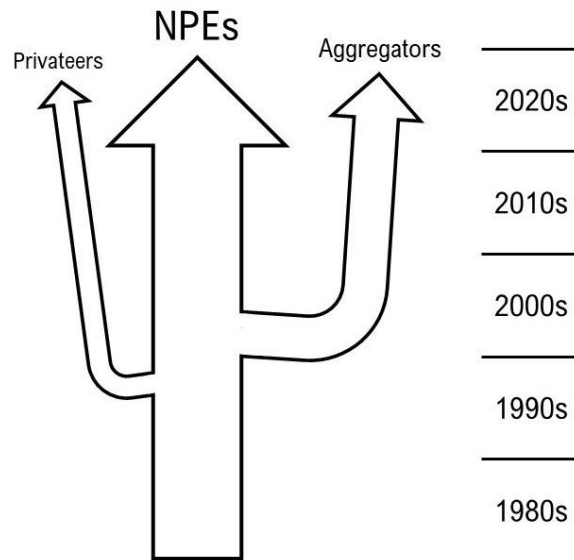


FIG. 05 Evolution of the NPE Business Model

As observed in my research, the success of the NPE business model itself spawned at least two other business models, the highly capitalized “patent mass aggregator” (Paper-1) and the “patent privateer” (Paper-2 and Paper-3), which are both discussed further in this chapter. The patent mass aggregator comprises a supersized NPE whose size also enables it to provide additional services to client firms and whose size may give it *gravitas* in licensing negotiations (Paper-1). The patent privateer, newly discovered in my research (Paper-2 and Paper-3), is particularly interesting because the model provides a way for firms to employ patents to attack, harass, and/or surveil competitors through specialized NPEs. As discussed below, both of these later developments expand the opportunities for firms as well as their effective boundaries (*See, e.g.*, Penrose, 1959, regarding the boundaries of firms extending beyond legally owned assets).

NPEs and their later evolution as patent mass aggregators and as patent privateers illustrate an interesting adaptation to environmental conditions, especially in ways that interact with firms to extend their capabilities. One clear example of these extended capabilities is seen in Paper-5, as Leidos⁹ used a privateering NPE known as VirnetX to collect for more than \$200 million for Leidos, largely from Apple and Microsoft. Similarly, Paper-1 shows that patent mass aggregator Intellectual Ventures provided patents to Verizon at just the right time during a Verizon litigation to serve a defensive purpose. While conventional property rights theories (Grossman & Hart, 1986), as well as resource-based theories (Penrose, 1959; Chandler, 1990), may sometimes consider a firm’s resources in terms of ownership, we can

⁹ A firm primarily focused on developing advanced equipment for various US intelligence agencies.

see that a key characteristic for patents is often in terms of a right to do something (*e.g.*, exploit an invention in a defined field of use) where “ownership” pertains not to the patent itself but to control of or access to that right.

6.3 The Patent Mass Aggregator – New Services to Established Firms

Paper-1 explores the industrialization of the NPE business model. The patent mass aggregators are simply more of everything – more investment, more patents, more licensing agents, and more litigators. In addition, the size of the patent holdings and larger professional staff of patent mass aggregators enable them to deliver new service offerings to firms. For example, the just-in-time patent litigation solution discussed in Paper-1, allowed Verizon to acquire a patent for its litigation against TiVo at just the right time.¹⁰ This type of defensive strategy could ensure that a firm has a comfortable freedom to operate vis-à-vis its competitors without worrying about patent litigations. Paper-1 also explains the ability of a patent mass aggregator to offer expanded services, such as equipping a firm with an armory of patent assets, *e.g.*, going from few patents to many patents overnight.¹¹ As discussed, the patent mass aggregator essentially operates as an intermediary that provides a variety of largely new and generally useful services to firms.

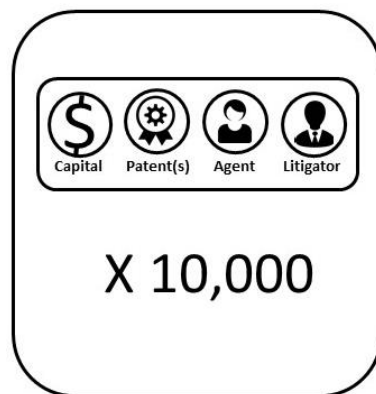


FIG. 06 Functional Components of a Patent Mass Aggregator

FIG. 06 illustrates the structure for a patent mass aggregator. This structure is essentially the NPE structure shown in FIG. 04 but scaled dramatically upwards as indicated by the “10,000” multiplier. Patent mass aggregators are not just a little bit bigger than a conventional NPE, they are massively larger. The essential components are: an enormous amount of capital for purchasing patents and funding patent assertion, thousands of patents, a staff of licensing agents, possibly a programming department that perfects algorithms for targeting firms for patent assertions to support the licensing operations,¹² and litigation

¹⁰ Post litigation the patent can be returned to the mass aggregator.

¹¹ While not explored in Paper-1, Microsoft’s sale of the former AOL patent portfolio to Facebook achieved exactly this outcome – taking Facebook from almost no patents one day to several thousand the next.

¹² Intellectual Ventures purchased Kevin Rivette’s patent portfolio, among others, related to targeting patent infringers. Under present US law, these patents are possibly no longer valid even if they have not otherwise expired. At one time, Intellectual Ventures had a very large programming team.

counsel. Like most NPEs, most patent mass aggregators have the “LLC” form.¹³

The patent mass aggregators (Paper-1) were purportedly created, in part, to reduce the difficulties in obtaining patent licenses from operating firms. However, their sheer mass at times created other licensing obstacles. Hitting a prospective licensee with the royalty bill for thousands of patents is obviously going to be a much higher financial bite than just licensing one or two patents. So, while mass aggregators may have a shock-and-awe advantage, the sheer volume of their licensing effort compels firms to fight back against licensing offers.¹⁴

6.4 Patent Privateers – Chartered by Firms

Paper-2 and Paper-3 explore patent privateers, a newly discovered species of NPE, that in a way parallel how classical privateers were a species of pirate. The privateer’s own goals are easily understood — cash obtained through a litigation damage award or settlement in the manner of an aggressive NPE. For a privateer, the job of asserting a patent against a target proceeds very much like a conventional NPE. The sponsor’s objective, like any commercial actor, is also monetary—albeit not necessarily immediately from the litigation, but rather from the changed competitive landscape wrought by the litigation. In essence, the sponsor’s rewards are often consequential rather than direct arising from the litigation.

FIG. 07 illustrates the structure for a patent privateer. The essential components of the patent privateer very much resemble the conventional NPE shown in FIG. 04 but with the addition of a typically hidden sponsor illustrated with a ninja icon. Thus, the essential components of a patent privateer are: adequate capital for patent assertion (possibly provided by the sponsor), one or more patents (possibly provided by the sponsor), one or more licensing agents (possibly provided by the sponsor), and litigation counsel (possibly selected by the sponsor and possibly paid for by the sponsor). The financial rewards from the patent assertion portion of the privateering operation are likely divided in the conventional fashion for an NPE. As discussed in Paper-2, the rewards for the sponsor are often not monetary rewards arising directly from the litigation but arising from a changed condition created by the litigation. Most patent privateers also have the LLC corporate form, and many have intricate nests of LLCs to provide additional camouflage for the sponsor.

¹³ Intellectual Ventures is comprised of thousands of companies having the LLC form. Even Intellectual Ventures’ four founders each have their own LLC. Presumably, funds are channeled throughout these LLCs as revenues arrive at one of them.

¹⁴ Subsequent to the publication of Paper-1, I was asked to be a non-testifying expert witness in a litigation involving Intellectual Ventures. While I do not know the amounts involved, I was told that the licensing proposal to IBM on behalf of the defendants was so enormous that any firm would have rejected the offer and instead spend \$40M+ in litigation defense fees.

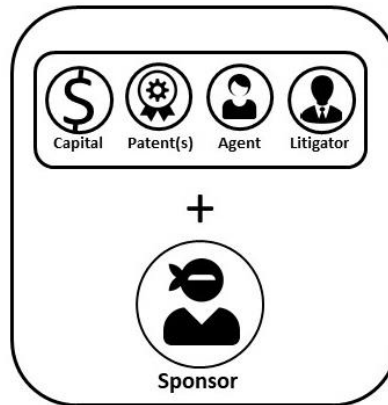


FIG. 07 Functional Components of a Patent Privateer

Paper-2 and Paper-3 in their exploration of privateering probe the sometimes ambiguous boundaries of the firm. As explored in Paper-3, the sponsor of a privateering operation typically wants minimal public and/or formal ties to the privateer, giving the privateer a theoretically high degree of autonomy.¹⁵ Through interactions between privateers who can exploit patent assets in accordance with their sponsor's plans, patent privateering has evolved "alternative patterns of behavior consistent with their newly perceived evaluation of costs and benefits" (Reitzig *et al.*, 2010).

As an example of patent privateering, VirnetX (Paper-5) has collected more than a billion dollars from its patent assertions with more than a quarter of the funds collected being returning to its corporate sponsor Leidos.¹⁶ VirnetX at enormous cost in legal fees (more than \$143M USD) has still managed to score a level of profits from litigation that more than exceeds the typical profits of many larger entities from selling products. Among other advantages, entities like VirnetX are immune to countersuit for patent infringement since they produce no products.

A key departure point for patent privateering is the recognition that one does not necessarily need to own an IP asset in order to employ it beneficially. For some corporate sponsors, privateering might even be less expensive than buying and asserting patents directly. If the party owning the patents is agreeable, the costs of privateering could be lower because the sponsor only needs spend enough money to motivate the patents' owner to sue the competitor. Hamstringing, distracting, and embarrassing the competition is often the sponsor's goal, rather than collecting a large damages award. Because privateering is stealthy, a given litigation could continue for a long time before the target realized, if ever, who sponsored the litigation. Thus, while one firm is distracted, disrupted, and embarrassed by the litigation, the other party has no corresponding problems and can focus on its business or take advantage of new opportunities cleared for it by the patent privateer.

Resource Based Theory may be helpful in describing the relationship between privateers

¹⁵ As shown in Paper-5, VirnetX's only connection to Leidos is an agreement requiring that certain percentages of collected rents be returned to Leidos. This agreement has been heavily scrutinized in each of VirnetX's litigations.

¹⁶ VirnetX is a public company. Its returns to Leidos are contractual. Leidos might also be a VirnetX shareholder as well.

and their sponsors (Penrose, 1959; Barney, 1991; Peteraf, 1993; Barney et al., 2011). Resource Based Theory distinguishes between firms and markets in that the “essential difference between economic activity inside the firm and economic activity in the market is that the former is executed within an administrative organization, while the latter is not” (Penrose, 1959). Stated differently, and in accord with North’s analysis, firms have considered the potential gains from re-contracting within the existing institutional framework to the potential gains from devoting resources to altering that framework (North, 1990). The emergence of patent privateering thus represents a change in the competitive paradigms followed by firms. This seems particularly true so long as knowledge of privateering remains low, and countermeasures are unavailable or ineffective.

Privateering arrangements can be shaped to fit many competitive scenarios. For example, privateering may be used by operating firms to alter the technology adoption rate between an upstart technology and an incumbent technology, to outsource the licensing of a larger collection of IPRs, and to change some aspect of the relevant legal infrastructure.¹⁷ Outsourcing patent litigation, one branch of privateering, helps firms shape their competitive environments and in some instances monetize their patent rights at extremely low cost and low risk, such as VirnetX discussed in Paper-5. While industry experts and IP managers acknowledge that privateering exists, the extent to which specific privateering scenarios have occurred, are occurring, or will occur in the future, and which privateering scenarios are most commonly practiced remains somewhat unknown and unknowable. This is primarily due to the sponsor’s goal in most privateering engagements to remain hidden, and because there are few existing reasons under US law why the complete ownership and/or control structure behind a given patent-holding entity must be publicly exposed or why the motivations of a plaintiff in a patent infringement case must be explained. The privateering examples discussed in Paper-2 appear to have resulted in the collection of several billion thus far by the known sponsors, and still more in terms of revenues retained and costs avoided, although the total amount received by sponsors remains unclear and largely incalculable.

6.5 Firm Capabilities & NPEs – “Follow the Money”¹⁸

We do not have enough insight into NPEs as a whole to assert whether they are – or are not – effectively service providers to, extensions of, or alter egos of firms, particularly large firms. As discussed above, we can, however, say that the forms of NPEs known as patent mass aggregators and patent privateers precisely serve such roles. We can further say that such roles entirely conform to both the transaction cost theories (Coase, 1937; Coase, 1988; Williamson, 1975, 1996) and the resource-based theory of the firm (Penrose, 1959; Barney, 1991; Peteraf, 1993; Barney *et al.*, 2011). The reason we can make this proposition is

¹⁷ Privateering may be used by investors to grow existing investments by privateering against competing firms in a given technology area, to change the value of the stock price of a public firm to temporarily discount its shares and/or to facilitate short selling, to change a firm’s value during investment, and to recoup investment research and analysis costs.

¹⁸ The advice allegedly given by Watergate informant Mark Felt to reporters Bob Woodward and Carl Bernstein that eventually forced US President Richard Nixon to resign.

because the available data supports such a characterization and little available data opposes such an interpretation – for these types of NPEs. The primary reason that we can make no statement one way or the other about conventional NPEs is because data regarding their financing,¹⁹ ownership and control is almost entirely lacking. In short, who really owns, finances, and controls modern NPEs is rarely known with any certainty. It may be possible to determine who manages NPEs, but these managers do not necessarily or even typically own or control the NPE.

We suspect that the conventional picture of NPEs might well change significantly if more information was known about their ownership, finance, and control. Countless papers have analyzed various aspects of NPEs (*e.g.*, Lemley & Melamed, 2013; Hagiu & Yoffie, 2013; Cohen *et al.*, 2014; Haber & Werfel, 2015; Cohen *et al.*, 2016; Haber & Werfel, 2016; Kiebzak *et al.*, 2016; Cosandier, 2017; Allison *et al.*, 2017; Leiponen & Delcamp, 2019; Kessan, 2019; Kwon & Drev, 2020; Feng & Jaravel, 2020; Chari *et al.*, 2021) – but despite some extraordinarily profound scholarship on the NPE topic – none of these papers offer insight regarding ownership, finance, and control over NPEs themselves. Only a few of these studies (*e.g.*, Kessan, 2019) even acknowledge that this information is missing due to secrecy in agreements.

Put another way, we do not know how many NPEs are owned, controlled, and/or financed by multinational firms, or billionaires who otherwise control large firms, or institutional investors diversifying portfolios into the intellectual asset class, or state actors, or simply small inventors who have scraped together enough cash to have someone properly exploit their patented inventions. While one could take the position that this information makes no difference in an analysis of NPEs, one could conversely argue that the NPE phenomenon is poorly, weakly, or incompletely understood in the absence of such information. By comparison, we know that a number of intellectually compelling articles were written about the public Ocean Tomo patent auctions of the late 2000s (Tietze, 2011; Fischer & Leidinger, 2014), but our Paper-1 reports that more than three-quarters of the patents purchased at these patent auctions were purchased by one patent mass aggregator (Intellectual Ventures). To my thinking, the presence of essentially a single buyer at these auctions changes the character of the auctions however else one might describe them. In short, it might be entirely reasonable for one to hypothesize that a similar ownership phenomenon exists among the NPEs as whole, a hypothesis that if tested might radically change our understanding of NPEs.

The patent mass aggregator and patent privateering varieties of the NPE business model are intimately aligned with large firms. As discussed, large firms often fund patent mass aggregators, sell their surplus patents to patent mass aggregators, and buy just-in-time patents from patent mass aggregators. Patent privateers similarly perform tasks for large firms that they would find difficult to do openly themselves.²⁰ As discussed in Paper-5,

¹⁹ We know, for example, that the Fortress Investment Group (now owned by the SoftBank Group Corp.) finances some NPE litigations, but Fortress itself is a private equity firm, and the public has little idea from whom it receives its funding.

²⁰ One could also say that only these entities could afford to organize a privateering effort.

Paper-4, and Paper-2, these specialized firms are often better adapted for their specific roles than larger, well-established firms would be in trying to accomplish the same tasks.

Thus, patent mass aggregators and patent privateering, acting effectively as service providers to large firms, align with theories suggesting that patents generally provide greater benefits to large firms (Reitzig, 2010). Only large firms and investors appear to participate actively in patent mass aggregation and patent privateering.²¹ Both patent privateering and patent mass aggregators provide a means for large companies to target the revenues of other product-manufacturing companies while avoiding retaliation and reputational damage.²²

As we know, firms may acquire access to external resources by various strategies subject to certain uncertainties (*see, e.g.*, Simon, 1947) and incomplete/imperfect contracting (Coase, 1988; Hart, 1995; Williamson, 1985, 1996). At times, we may wish to think of the boundaries of firms more in terms of spheres of influence than hard lines. We see examples of these fuzzy boundaries in the forms of patent mass aggregator form of NPE (Paper-1) and the privateering form of NPE (Paper-2 and Paper-3).

Firms' utilization of patent mass aggregators and patent privateers is consistent North's and Chandler's arguments that as organizations evolve to take advantage of opportunities they become more productive, and these evolutions may gradually alter the institutional framework (Chandler, 1990; North, 1990). Patent mass aggregators and patent privateering evolve and expand firm patent strategies and may initiate still further changes in the patent ecosystem. Among other things, the conventional notion that one must be the legal owner of a patent in order to exploit it vanishes. Both patent mass aggregation and patent privateering enable firms to benefit from patent assets simply by motivating their legal owners to take actions whose results will provide some benefits to the firm, primarily in the form of a changed competitive landscape. Thus, these organizational innovations enable the capture of more gains (such as portions of competitor revenue streams), which may subsequently enable expansion of a section of the ideas market. What we do not know is the degree to which these theories of the firm apply generally to the wider set of NPEs.

6.6 Capital Is Available for Building a Sustainable Patent Sale and Licensing Market

While one can see the difficulties behind establishing a sustainable market for ideas as they pertain to patents and patent licenses, one can also see that closely related patent assertion activities have little trouble obtaining adequate financing. Paper-1 through Paper-5 demonstrate the influx of significant amounts of capital into the patent assertion arena and contrast interestingly with the following discussion of a patent licensing market in the sense that funds are readily available for the commercial exploitation of intellectual assets. Paper-1 particular addresses the vast amounts of capital - \$5 billion USD²³ – obtained by just one

²¹ Conversely, if one views NPEs, as “small firms,” then they challenge established theory which holds that technology markets benefit large firms and that IPRs exist primarily to support markets for technology. This view becomes especially pronounced for aggressive NPEs that exploit asymmetries in patent assertion markets to gain IPR-based competitive advantages.

²² In short, to profit by the actions of aggressive operations brought by these flavors of NPEs.

²³ Defendants' Certificate of Interested Entities or Persons Pursuant to Civil Local Rule 3-16 and FRCP 7.1, *Xilinx, Inc. v. Invention Investment Fund 1 LP*, No. 11-cv-0671-SI (N.D. Cal. May 16, 2011)

patent mass aggregator (Intellectual Ventures) to acquire patents for assertion. This patent mass aggregator's initial funding seems to have come from large operating firms such as Microsoft, Intel, Sony, Nokia, Apple, Google, and eBay. Later funding sources included 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. Paper-4 also addresses the application of capital to the patent assertion business since the increasing volume of NPE plaintiff litigations required an enormous amount of capital. The increase in NPE litigations may also speak to an effective loan, as well, when the litigators accept contingency fee arrangements²⁴ and when investors finance NPEs. Paper-2 and Paper-3 also address the influx of capital into the intellectual asset commercialization arena. Finally, Paper-5 demonstrates in a sense what all the fuss is about since collectively the litigations of the four cases chosen amount to some \$2 billion in damages alone, split among the litigations, and also not accounting for increase product/sales in the cases of product-selling firms Akamai and Apple Computer.

As it now stands, patent licensing is often characterized by extensive bargaining, which may include litigation as a phase in the bargaining (Feldman, 2012). NPEs (Paper-4) often encounter difficulties in licensing their patents, which is why they have consistently turned to patent infringement litigations to force licensing. Paper-5 discusses the difficulties faced by Ericsson and VirnetX in licensing their patents. VirnetX, in particular, had to fight Microsoft and Apple tooth and nail to obtain its patent infringement damages long after its licensing offers were rejected. VirnetX expended some \$143M USD in litigation expenses to gain roughly \$1 billion damages and licensing fees. This process entailed numerous appeals to higher courts. The massive public relations machines of the major operating firms still spin stories questioning VirnetX's legitimacy despite the firm's nearly consistent litigation victories, all sustained on appeal.²⁵ Paper-5 also discusses Ericsson's difficulties in licensing its standard essential telecommunications patents. One might assume that after more than 20 years of licensing such SEP telecom patents that the market would be sufficiently developed that the transaction costs would be fairly low. But for a variety of reasons, each license is particularly hard fought. Ericsson and TCL alone expended nearly 15 years in negotiations and litigation before finally concluding a license.

While Paper-1 through Paper-5 address the massive amounts of capital flowing into various patent assertion ventures, these same papers also address the difficulties in perfecting a non-contentious patent sale and licensing market that operates seamlessly, sustainably, and with low transaction costs. Of course, all markets are subject to coordination problems of various

²⁴ One should note that litigation firms are often picky about accepting contingency fee clients and many litigators have also commented that this pickiness ensures that contingency fee work is often some of the most highly compensated work that a litigation firm takes on.

²⁵ Apple even returned to court after paying VirnetX its awarded damages and asked to be relieved the burden of having to pay. The judge commented that the case was "as done as a case could be done" in denying Apple's request.

types (Chamberlin, 1948; Ozga, 1960; Beckett, 2009). But we also know that markets²⁶ comprise institutions that should be amenable to design to achieve specific goals, such as low transaction costs (Coase, 1988). As an additional benefit, a new and/or improved idea markets should enable new IP management forms and likely vice versa (*See, e.g., Benassi & Di Minin, 2009*). So, we are left with an interesting conundrum where capital freely flows into patent assertion efforts but only trickles into efforts to transform patent assertion into a non-contentious licensing market.

6.7 The Possible Oversupply of Patents That Complicates the Ideas Market

One could question whether the profusion of US patents (3.3 million active patents, according to the UN's World Intellectual Property Organization) has oversaturated the patent segment of the ideas market, retarding its development potential. (*See, Hagiu & Yoffie, 2013*). There are more active US patents now than at any time in history, and the number of active patents grows every Tuesday when the USPTO issues a new batch.²⁷ Research has shown that hastily granted patent applications have a greater tendency to end up in patent assertion efforts than more carefully examined applications (Feng & Jaravel, 2020). Some commentators have argued that a “patent bubble” may ultimately form in the patent market (Feldman, 2012). The possible oversupply of patents, to the extent that it exists, could also potentially act as a hindrance to innovation (*See, Heller and Eisenberg, 1998*).

The reality of the patent world, particularly the portion concerned with patent assertion, may differ significantly from its theoretical optimum. Among other things, the patent system is not structured to efficiently 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 patent owner (*See, e.g., Bessen and Meurer, 2012*). The situation has not changed appreciably with the creation of the invalidity proceedings under the USPTO's Patent Trial and Review Board since parties must still engage legal counsel for an expensive battle. This situation may possibly support two opposing phenomena – the armada of not-so-great patents impairs the ability of the truly exceptional patents to claim their rightful place²⁸ – while patents selected

²⁶ Markets and hierarchies comprise an intertwining range of differing types, as well as hybrids of both (Williamson, 1991).

²⁷ Patents remain in force 20 years from their filing. This means that patent applications filed roughly prior to June 3, 2002, if issued, could still be in force today. The number of US utility patents having filing dates on/after June 3, 2002, amounts to some 4,376,537 patents. In its 232-year history, the USPTO has issued some 11,310,951 patents, which means that the USPTO has issued 39% of all the patents that it has ever issued from applications filed in the past 20 years. The interested reader may repeat this calculation by visiting the USPTO Patent Database, available at <http://patft.uspto.gov/netahtml/PTO/search-adv.htm> and entering the search term “APD/6/3/2002->4/19/2022 and APT/1”. (This search was performed prior to June 3, 2022; the USPTO will likely issue another 45,000+ patents before June 3, 2022, which have not been counted here.) Patentees must periodically pay fees in order to keep their patents in force. In 2020, the highest number of patents in force was in the US (3.3 million), followed by China (3.1 million), Japan (2 million), the Republic of Korea (1.1 million) and Germany (0.8 million); *see, World Intellectual Property Indicators 2021, World Intell. Prop. Org., https://www.wipo.int/edocs/pubdocs/en/wipo_pub_941_2021.pdf, site last visited 2022-04-23.*

²⁸ It is a well-known aspect of a defensive strategy for large firms who come late to a new technology to file a massive number of derivative patents related to aspects of a breakthrough patent obtained by a smaller firm, such that if one is just counting patents, the truly innovative smaller firm holds fewer patents.

from the armada of not-so-great patents facilitates possibly the worst types NPE-type litigations. Thus, the result of having the supply of patents growing unchecked is not only that some good patents may end up buried by weaker patents but also that patents may be monetized for reasons having a weak nexus with the importance of the underlying inventions.²⁹

As discussed in Paper-1, Paper-2, and Paper-4 further research into the nature of the patent supply seems warranted. At present, the supply of patents in the US is entirely controlled by applicant filing behaviors. The present super abundance of patents seems likely to create something akin to inflation not considerably different from increases in the money supply and could possibly weaken the value of patent generally (*see*, Lemley, 2016). A detailed study might be helpful to determine if safeguards should be added to the patent system when applicant filing behavior exceeds certain thresholds, for example.

²⁹ Indeed, one of the benefits of the patent mass aggregator model is that it achieves the scale of the licensing operations of very large operating companies, such as IBM, where at least a few patents from a portfolio of some 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.

7 Conclusion, Implications, and Directions for Future Research

This thesis has focused on patent assertions in the US. While patents have existed since the beginning of the US as a nation, and while commercial exploitation of patents has occurred throughout this period, recent years have seen a significant change in form and emphasis in the commercial exploitation of patents for many firms doing business in the US. This thesis and the five appended papers have hopefully contributed to this field in several diverse and helpful ways. The papers can be arranged and matched according to their relevance for different aspects of patent assertion, both litigation and licensing.

Among other things, the synergistic results of this research suggest that at least some aspects of the commercial exploitation of patents match closely with theories of the firm, such as the transaction cost and the resource-based theories. For example, the combined results of my patent privateering and patent mass aggregator research suggests that firms may acquire control over patents for completing tasks that would be difficult for them to accomplish on their own. One can also see that in many instances “control” over patent assets is often more useful than “ownership,” a paradigm that seems often replicated in many other areas of contemporary business activities.

My research further implies that effective patent assertion efforts require a high level of management skill that may include expertise in the abilities to acquire patents with maximum discretion, to create novel legal structures, and to explore innovative exploitation practices. Likewise, my litigation research shows that firms adjust their litigation strategies based on context to attain beneficial results. This research also shows that litigation strategies may need to change over time to reflect changing commercial circumstances. Thus, commercial expertise in patent assertion comprises a skill that is learnable, implying also that all actors are unlikely to be uniformly skilled at such activities, and further suggesting that such management skills may be amenable to design considerations.

This research will hopefully contribute to building a more equitable intellectual property system, especially for patents. In particular, my examination of various patent commercialization models, such as my discovery of patent privateering, may add a meaningful contribution to the overall discussion. My hope is that this research will provide a useful component, however small and limited, to the overall evolution of a system of intellectual property rights and their commercial exploitation in a fair and sustainable manner. I believe that it should be possible to develop a patent commercialization system that operates with a net benefit to all relevant stakeholders.

Along these lines, I will suggest some opportunities for future research which I believe would be interesting and practical and that would add to the current state of the knowledge related to the topic of this thesis. Rather than wait for a US reluctant regulator to declare that actual patent ownership/control and licensing transactions must be made public, I would suggest continuing the work of Paper-1 through Paper-4, using the chaining techniques developed for this research, to build a system that automatically determines, or attempts to determine, who actually controls any given US patent and the licensing fees and conditions likely associated with any given US patent. Both of these actions could be achieved,

especially by applying bootstrapping techniques (similar to the chaining techniques discussed in Chapter 3) to an advanced artificial intelligence system. In other words, the actions that I performed with Paper-1 through Paper-4 could be automated using various artificial intelligence tools. This would allow the same sorts of data to be uncovered at extremely rapid rates. To some extent, this new data would solve a tremendous problem in patent and intellectual property research that arises from the huge amount of data maintained in secrecy. In addition, once such information had been made public for a large group of patents then one might suspect that increasing numbers of firms might abandon the practice of keeping certain information hidden, possibly in collaboration with other firms. Such a new abundance of data would allow researchers to dig deep into the realities of the patent market opening up new possibilities and likely new theories. One could further imagine that with key information no longer hidden that a genuine patent transaction market might emerge under the conditions of greater public knowledge regarding terms and conditions. While clearly somewhat of a dream, the IP market could resemble the real property market where all relevant data is publicly available.

This thesis has pointed out the intertwined processes involved in managing and exploiting patents. As we know, the patent laws are unitary – the law is the same from technology to technology. However, while this aspect of the intellectual property construct may be similar, this does not mean that intellectual asset management and commercialization for specific technologies, firms, and industries should be considered similarly unitary. Indeed, one might suspect that the optimum conditions for each area may be so different that no two would look very much alike. It should also be interesting to continue the work of Paper-5 to better understand which conditions are the most pertinent to firms and under what conditions. The firms in Paper-5 all came from the same industry, the ICT industry, and it would be interesting to expand the research to firms in other technology sectors. Over time, it may become possible to present comparisons among firms across a variety of situations and variables. For example, endogenous contextual circumstances regarding the pharmaceutical and chemical industries have been explored (*see*, Ziegler, Ruether, Bader & Gassmann, 2013) and endogenous contextual circumstances have been explored in the financial services industry (*see*, Bader, 2008).

Finally, at the risk of smashing through the guard rails of academic propriety, it does seem to me that design considerations could be applied to patent studies, both from firm and system points of view. (*See, e.g.*, Simon, 1988; Berglund *et al.*, 2020, and Romme, 2003). While I, have not explored this topic in my papers, it seems to me that much of my work could be enlisted to support such research, and I would strongly encourage other investigators to do so. The value of a design approach to intellectual property, at least at the firm level, if not at the policy level, should be clear. Just as one can design a complex system for a given purpose (Hughes, 1987), one could similarly design structures for intellectual asset protection and commercial exploitation (*See, e.g.*, Börjesson and Elmquist, 2012; Shreyögg & Kliesch-Eberl, 2007).

We know that intellectual assets of various types have existed for thousands of years, and patents (in the modern sense) have existed from the beginnings of the Industrial Revolution.

Nevertheless, we still have much to learn about the impact of patents on our economy, our innovation system, and possibly on our society as well. To some extent, as hopefully shown here, our understanding of the patent right is conditioned by the new and sometimes creative uses that commercial actors make of the patent right itself. Given the complexity of the patent right and the commercial imperative that drives management creativity, it is not unthinkable that we may never completely understand the metes and bounds of the patent right, so long as managers can develop new ways for employing them commercially.

REFERENCES

- Adelman, M.J., (1986). The new world of patents created by the court of appeals for the federal circuit. *U. Mich. JL Reform*, 20, 979-1007.
- Allison, J. R., Lemley, M. A., & Schwartz, D. L. (2013). Understanding the realities of modern patent litigation. *Tex. L. Rev.*, 92, 1769.
- Allison, J., Lemley, M., & Walker, J. (2009). Extreme value or trolls on top? The characteristics of the most litigated patents. *University of Pennsylvania Law Review*, 158 U. Pa. L. Rev. 1-37.
- Allison, J. R., Lemley, M. A., Moore, K. A., & Trunkey, R. D. (2003). Valuable patents. *Geo. LJ*, 92, 435, doi: 10.2139/ssrn.426020.
- Allison, J.R. *et al.* (2012). Patent Litigation and the Internet, *Stan. Tech. L. Rev.* 1, 6, doi: 10.2139/ssrn.1989144.
- Allison, J. R., Lemley, M. A., & Schwartz, D. L. (2017). How often do non-practicing entities win patent suits?. *Berkeley Technology Law Journal*, 32(1), 237-310.
- Anderson, J. J., & Menell, P. S. (2019). Empirical studies of claim construction. *Research Handbook on the Economics of Intellectual Property Law*. Edward Elgar Publishing.
- Aristodemou, L., Tietze, F. and Shaw, M. (2020). Stage Gate Decision Making: A Scoping Review of Technology Strategic Selection Criteria for Early-Stage Projects. *IEEE Engineering Management Review*, 48(2), 118-135, doi: 10.1109/EMR.2020.2985040.
- Arora, A. (1996). Contracting for tacit knowledge: the provision of technical services in technology licensing contracts. *Journal of Development Economics*, 50(2), 233-256, doi: 10.1016/S0304-3878(96)00399-9.
- Arora, A., & Gambardella, A. (2010). The market for technology. *Handbook of the Economics of Innovation*, 1, 641-678.
- Arora, A. & Fosfuri, A. (2003). Licensing the market for technology. *Journal of Economic Behavior & Organization*, 52 (2), 277-295, doi: 10.1016/S0167-2681(03)00002-7.
- Arora, A., Fosfuri, A., & Gambardella, A. (2001). Markets for technology and their implications for corporate strategy. *Industrial and corporate change*, 10(2), 419-451, doi: 10.1093/icc/10.2.419.
- Arora, A. & Merges, R. (2004). Specialized Supply Firms, Property Rights and Firm Boundaries, 13 *Industrial and Corporate Change*, 451.
- Arora, A., & Ceccagnoli, M. (2004). Patent protection, complementary assets, and firms' incentives for technology licensing. *Working Paper Series: Social Science Research Network*, doi: 10.1287/mnsc.1050.0437.
- Arrow, K. J. (1962). Economic welfare and the allocation of resources for invention. In *National Bureau of Economic Research (Ed.), The Rate and Direction of Inventive Activity: Economic and Social Factors*: 609-625. Princeton, NJ: Princeton University Press, doi: 10.1515/9781400879762-024.
- Bader, M. A. (2008). Managing intellectual property in the financial services industry sector: Learning from Swiss Re. *Technovation*, 28(4), 196-207.
- Baldoni, E. (2012), Punitive Damages: A Comparative Analysis, *University of Macerata*, 1-219.

- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99-120.
- Barney, J. B., Ketchen Jr, D. J., & Wright, M. (2011). The future of resource-based theory: revitalization or decline?. *Journal of management*, 37(5), 1299-1315, doi: 10.1177/0149206310391805.
- Beckert, J. (2009). Beyond the market. *Princeton University Press*, doi: 10.1515/9781400825448.
- Bekkers, R., Verspagen, B., & Smits (2002). Intellectual property rights and standardization: The case of GSM. *Telecommunications Policy*, 26, 171–188, doi: 10.1016/S0308-5961(02)00007-1.
- Bel, R. (2013). Access, veto, and ownership in the theory of the firm. *J. Law Econ. Organ.* 29(4), 871-897, doi: 10.1093/jleo/ews003.
- Benassi, M., & Di Minin, A. (2009). Playing in between: patent brokers in markets for technology. *R&D Management*, 39(1): 68-86, doi: 10.1111/j.1467-9310.2008.00537.x.
- Bender, G.A. (2000). Uncertainty and Unpredictability in Patent Litigation: The Time Is Ripe for a Consistent Claim Construction Methodology. *J. Intell. Prop. L.*, 8, 203-207.
- Bennett, W. J. (2014). Indian Pharmaceutical Patent Law and the Effects of Novartis Ag v. Union of India, 13 *Wash. U. GlobalStud. L. Rev.* 535.
- Berglund, H., Bousfiha, M. and Mansoori, Y. (2020). Opportunities as Artifacts and Entrepreneurship as Design. *Academy of Management Review*, 45(4), doi: 10.5465/amr.2018.0285.
- Bessen, J and Meurer, M. (2012). The Direct Costs from NPE Disputes, *Boston Univ. School of Law*, 12-34, available at <http://ssrn.com/abstract=2091210>, doi: 10.2139/ssrn.2091210.
- Bessen, J. & Meurer, M.J. (2008) Patent Failure: How Judges, Bureaucrats, And Lawyers Put Innovators At Risk, 160, doi: 10.1515/9781400828692.
- Bessen, J. and Meurer, M. (2013). The patent litigation explosion. 18 *Bos. Univ. School of Law Working Paper Series*, Paper No. 05-18, 2005), available at <http://ssrn.com/abstract=831685>, doi: 10.2139/ssrn.831685.
- Bessen, J., Neuhäusler, P., Turner, J., & Williams, J (2018). Trends in Private Patent Costs and Rents for Publicly-Traded United States Firms, *Boston Univ. School of Law, Public Law Research Paper No. 13-24*, electronic copy available at: <https://ssrn.com/abstract=2278255>, doi: 10.1016/j.irl.2018.07.001.
- Bhagat S., Brickley J.A., & Coles J.L. (1994). The costs of inefficient bargaining and financial distress: evidence from corporate lawsuits. *Journal of Financial Economics*, 35(2), 221–247, doi: 10.1016/0304-405X(94)90005-1.
- Blind, K., Cremers, K., & Mueller, E. (2009). The influence of strategic patenting on companies' patent portfolios. *Research Policy*, 38, 428-436, doi: 10.1016/j.respol.2008.12.003.
- Bontis, N. (2002). World Congress on Intellectual Capital Reading. Boston: Butterworth Heinemann, doi: 10.4324/9780080521770.

- Börjesson, S., Elmquist, M. (2012). Innovation capabilities - what are they? Towards a systems view of the prerequisites for innovation in large firms. Unpublished Working Paper, Chalmers University of Technology.
- Brouwer, E., & Kleinknecht, A. (1999). Innovative output, and a firm's propensity to patent: An exploration of CIS micro data. *Research Policy*, 28(6): 615, doi: 10.1016/S0048-7333(99)00003-7.
- Bryman, A., & Bell, E. (2007). *Business Research Methods*. Oxford, NY: Oxford University Press.
- Chamberlin, E. H. (1948). An experimental imperfect market. *Journal of political economy*, 56(2), 95-108, doi: 10.1086/256654.
- Chandler, A. (1990). *Scale and Scope: The Dynamics of Industrial Capitalism*. Cambridge, MA: Harvard University Press, doi: 10.4159/9780674029385.
- Chari, M., Steensma, H. K., Connaughton, C., & Heidl, R. (2021). The influence of patent assertion entities on inventor behavior. *Strategic Management Journal*, doi: 10.1002/smj.3382.
- Chen, S., & Jing, Y. (2017). The Double Sword Role of Proprietary Patent Strategy on Performance and Institutional Contingency. In *Academy of Management Proceedings* (Vol. 2017, No. 1, p. 13556). Briarcliff Manor, NY 10510: Academy of Management, doi: 10.5465/AMBPP.2017.13556abstract.
- Chen, Y.M., Liu, H.H., Liu, Y.S., & Huang, H.T. (2016). A preemptive power to offensive patent litigation strategy: Value creation, transaction costs and organizational slack. *Journal of Business Research*, 69, 1634–1638, doi: 10.1016/j.jbusres.2015.10.030.
- Chesbrough, H. (2003). *Open Innovation: The New Imperative For Creating And Profiting From Technology*.
- Chesbrough, H. (2006). Emerging Secondary Markets For Intellectual Property: US And Japan Comparisons, *Research Report To National Center For Industrial Property Information And Training (NCIPI)*.
- Chien, C.V. (2009). Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents, 87 *N.C. L. Rev.*, 1571-1578.
- Chien, C.V. (2010). From arms race to marketplace: the complex patent ecosystem and its implications for the patent system. 62 *Hastings L.J.*, 297.
- Chien, C.V. (2012). Reforming Software Patents. 50 *Hous. L. Rev.*, 325-383.
- Chien, C.V. (2012). Startups and Patent Trolls, *Santa Clara Univ. School of Law*, 09-12, available at <http://ssrn.com/abstract=2146251>, doi: 10.2139/ssrn.2146251.
- Cho, Y., Kirkewoog, S., & Daim, T. U. (2018). Managing strategic intellectual property assets in the fuzzy front end of new product development process. *R&D Management*, 48(3), 354-374, doi: 10.1111/radm.12312.
- Choi, J. (2010). Patent pools and cross-licensing in the shadow of patent litigation. *International Economic Review*, Vol. 51, No. 2, May 2010, doi: 10.1111/j.1468-2354.2010.00587.x.

- Coase, R. H. (1991). The nature of the firm (1937). *The nature of the firm*, 18-33, doi: 10.1111/j.1468-0335.1937.tb00002.x
- Coase, R. H. (1988). *The Firm, the Market, and the Law*. Chicago: University of Chicago Press, doi: 10.7208/chicago/9780226051208.001.0001.
- Coase, R. H. (1974). The market for goods and the market for ideas. *The American Economic Review*, 64(2), 384-391.
- Cohen, L., Gurun, U. G., & Kominers, S. D. (2016). The growing problem of patent trolling. *Science*, 352(6285), 521-522, doi: 10.1126/science.aad2686.
- Cohen, L., Gurun, U. G., & Kominers, S. D. (2014). Patent Trolls: Evidence from Targeted Firms, *Harvard Business School Finance Working Paper No. 15-002*, doi: 10.1287/mnsc.2018.3147.
- Cohen, W. M., Nelson, R. R., & Walsh, J. (2000). Protecting their intellectual assets: Appropriability conditions and why U.S. manufacturing firms patent (or not). Working paper, *National Bureau of Economic Research*, Cambridge, MA.
- Cosandier, C. (2017). Intermediaries versus Trolls in Contests for Patents. Working Paper available at https://www.econ.iastate.edu/files/events/files/cosandier_jmp_oct31.pdf.
- Demsetz, H. (1967). Toward a theory of property rights. *The American Economic Review*, 57(2): 347-359, 10.1057/9780230523210_9.
- Dent, C. (2009). 'Generally Inconvenient': The 1624 Statute of Monopolies as Political Compromise, 33 *Melb. U. L. Rev.* 415.
- Dess, G. G., & Lumpkin, G. T. (2005). The role of entrepreneurial orientation in stimulating effective corporate entrepreneurship. *Academy of Management Perspectives*, 19(1), 147-156, doi: 10.5465/ame.2005.15841975.
- Dubois, A. & Gadde, L-E. (2002) Systematic combining: an abductive approach to case research. *Journal of Business Research*, 55(7), 553-560, doi: 10.1016/S0148-2963(00)00195-8.
- Dushnitsky, G., & Klueter, T. (2011). Is there an eBay for ideas? Insights from online knowledge marketplaces. *European Management Review*, 8(1), 17-32, 10.1111/j.1740-4762.2010.01002.x.
- Encaoua, D. & Lefouili, Y. (2005). Choosing intellectual protection: Imitation, patent strength and licensing. *Annales d'Economie et de Statistique*, 79, 241-271, doi: 10.2307/20777577.
- Feldman, R. (2009). Plain Language Patents, *Texas I.P.L.J.*, 17, 289.
- Feldman, R. (2012). Rethinking patent law. In *Rethinking Patent Law*. Harvard University Press, doi: 10.4159/harvard.9780674064966.
- Feng, J., & Jaravel, X. (2020). Crafting intellectual property rights: Implications for patent assertion entities, litigation, and innovation. *American Economic Journal: Applied Economics*, 12(1), 140-81, doi: 10.1257/app.20180361.

- Fischer, T., & Leidinger, J. (2014). Testing patent value indicators on directly observed patent value—An empirical analysis of Ocean Tomo patent auctions. *Research Policy*, 43(3), 519-529.
- Flick, U. (2009). *An Introduction to Qualitative Research* (4th ed.). London: SAGE Publications Ltd.
- Fon, V. & Parisi, F. (2006). Judicial precedents in civil law systems: A dynamic analysis, *International Review of Law and Economics*, Volume 26, Issue 4, Pages 519-535, doi: 10.1016/j.irle.2007.01.005.
- Foss, N. J., & Klein, P. G. (2020). Entrepreneurial opportunities: who needs them?. *Academy of Management Perspectives*, 34(3), 366-377, doi: 10.5465/amp.2017.0181.
- Galasso, A., & Schankerman, M. (2015). Patents and cumulative innovation: Causal evidence from the courts. *The Quarterly Journal of Economics*, 130(1), 317-369, doi: 10.1093/qje/qju029.
- Gans, J. S., & Stern, S. (2010). Is there a market for ideas?. *Industrial and Corporate Change*, 19(3), 805-837, doi: 10.1093/icc/dtq023.
- Gerber, D. (1998). System Dynamics: Toward a Language of Comparative Law, 46 *Am. J. Comp. L.* 719, doi: 10.2307/840989.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies of qualitative research*. London: Wiedenfeld and Nicholson, doi: 10.1097/00006199-196807000-00014.
- Golden, J.M. (2014). Litigation in the Middle: The Context of Patent-Infringement Injunctions. *Texas Law Review*, 92, 2075-2116.
- Granstrand, O., & Holgersson, M. (2014). The challenge of closing open innovation: The intellectual property disassembly problem. *Research-Technology Management*, 57(5), 19-25, doi: 10.5437/08956308X5705258.
- Granstrand, O. & Holgersson, M. (2014). Multinational technology and intellectual property management – Is there global convergence and/or specialization?. *International Journal of Technology Management*, 64 (2/3/4), 117-147.
- Granstrand, O. (1999). *The Economics And Management Of Intellectual Property*, 176.
- Granstrand, O. (2010). *Industrial Innovation Economics and Intellectual Property* (5th ed.). Gothenburg: Svenska Kulturkompaniet.
- Granstrand, O. (2000). *Corporate Innovation Systems. A Comparative Study Of Multi-Technology Corporations in Japan, Sweden and The USA*, available at http://www.lem.sssup.it/Dynacom/files/D21_0.pdf.
- Granstrand, O. (2000). The shift towards intellectual capitalism—The role of infocom technologies. *Research Policy*, 29, 1061-1080, doi: 10.1016/S0048-7333(99)00070-0.
- Grossman, S. J., & Hart, O. D. (1986). The costs and benefits of ownership: A theory of vertical and lateral integration. *Journal of Political Economy*, 94(4): 691-719, doi: 10.1086/261404.

- Haber, S. H., & Werfel, S. H. (2015). Why do inventors sell to patent trolls? experimental evidence for the asymmetry hypothesis. *Stanford University Working Paper*, doi: 10.2139/ssrn.2552734.
- Haber, S. H., & Werfel, S. H. (2016). Patent trolls as financial intermediaries? Experimental evidence. *Economics Letters*, 149, 64-66.
- Hagiui, A., & Yoffie, D. B. (2013). The new patent intermediaries: platforms, defensive aggregators, and super-aggregators. *Journal of Economic Perspectives*, 27(1), 45-66, doi: 10.1257/jep.27.1.45.
- Hall, B. & Ziedonis, R. (2001). The patent paradox revisited: An empirical study of patenting in the semiconductor industry, *RAND Journal of Economics*, 32, 101-128.
- Hall, B., Helmers, C., Rogers, M., & Sena, V. (2014). The choice between formal and informal intellectual property: a review. *Journal of Economic Literature*, 52(2), 375-423, doi: 10.1257/jel.52.2.375.
- Hall, B., Jaffe, A. & Trajtenberg, M. (2005). Market value and patent citations. *RAND Journal of Economics*, 36, 16-38.
- Harhoff, D., Scherer, F. M., & Vopel, K. (2003). Citations, family size, opposition and the value of patent rights. *Research policy*, 32(8), 1343-1363, doi: 10.1016/S0048-7333(02)00124-5.
- Hart, O. (1995). *Firms, Contracts, and Financial Structure*. Oxford, UK: Clarendon Press, doi: 10.1093/0198288816.001.0001.
- Heger, D., & Zaby, A. K. (2018). Patent breadth as effective barrier to market entry. *Economics of Innovation and New Technology*, 27(2), 174-188, doi: 10.1080/10438599.2017.1322720.
- Heller, M.A. and Eisenberg, R.S. (1998). Can patents deter innovation? The anticommons in biomedical research. *Science*, 280(5364), 698-701, doi: 10.1126/science.280.5364.698.
- Henkel, J. and Reitzig, M. (2007). Patent Trolls, the Sustainability of “Locking-in-to-Extort” Strategies, and Implications for Innovating Firms, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=985602. doi: 10.2139/ssrn.985602.
- Henry, M. & Turner, J. (2006). The Court of Appeals for the Federal Circuit’s impact on patent litigation. *The Journal of Legal Studies*, 35(1): 85-117, doi: 10.1086/498834.
- Holgersson, M. & Wallin, M. (2017). The patent management trichotomy: Patenting, publishing, and secrecy. *Management Decision*, 55(6), 1087-1099, doi: 10.1108/MD-03-2016-0172.
- Holgersson, M. (2013). Patent management in entrepreneurial SMEs: a literature review and an empirical study of innovation appropriation, patent propensity, and motives. *R&D Management*, 43(1), 21-36, doi: 10.1111/j.1467-9310.2012.00700.x.
- Holgersson, M., Granstrand O. & Bogers, M. (2018). The evolution of intellectual property strategy in innovation ecosystems: Uncovering complementary and substitute appropriability regimes. *Long Range Planning*, 51(2), 303-319, doi: 10.1016/j.lrp.2017.08.007.
- Holmes, O.W. (1897). The Path of the Law, *Harv. L. Rev.*, 10, 457, doi: 10.2307/1342108.

- Hughes, T. P., "The Evolution of Large Technological Systems", *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, ed. Wiebe E. Bijker, Thomas P. Hughes & Trevor Pinch (Cambridge, MA: MIT Press, 1987), 51–82.
- Hurmelinna-Laukkanen, P., & Yang, J. (2022). Distinguishing between appropriability and appropriation: A systematic review and a renewed conceptual framing. *Research Policy*, 51(1), 104417, doi: 10.1016/j.respol.2021.104417.
- Iansiti, M. (1997). *Technology Integration: Making Critical Choices In A Dynamic World*.
- Jaffe, A.B. & Lerner, J. (2004). *Innovation and Its Discontents: How Our Broken Patent System Is Endangering Innovation and Progress, and What to Do About It*, doi: 10.1515/9781400837342.
- Jell, F., Henkel, J. & Wallin, M. (2017). Offensive patent portfolio races. *Long Range Planning*, 50 (5), 531-549, doi: 10.1016/j.lrp.2016.03.003.
- Jick, T.D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative science quarterly*, 24, 602-611, doi: 10.2307/2392366.
- Jordanova, L. (2016) *History in Practice*. Bloomsbury, London.
- Kahin, B. (2008). The Patent Ecosystem in IT: Business Practice and Arbitrage (Dec. 5, 2008) (submission based on remarks before the Federal Trade Commission).
- Kesan, J. P. (2019). Patent trolls. *Research Handbook on the Economics of Intellectual Property Law*, doi: 10.4337/9781789903997.00063.
- Kiebzak, S., Rafert, G., & Tucker, C. E. (2016). The effect of patent litigation and patent assertion entities on entrepreneurial activity. *Research Policy*, 45(1), 218-231, doi: 10.1016/j.respol.2015.07.002.
- Kline, D. (2003). Sharing The Corporate Crown Jewels, *MIT Sloan Management Review*, 44(3), 89-93.
- Kwon, S., & Drev, M. (2020). Defensive Patent Aggregators as Shields against Patent Assertion Entities? Theoretical and Empirical Analysis. *Technological Forecasting and Social Change*, 151, 119745, doi: 10.1016/j.techfore.2019.119745.
- Langley, A. (1999). Strategies for theorizing from process data. *Academy of Management Review*, 24, 691-710, doi: 10.5465/amr.1999.2553248.
- Lanjouw, J. & Schankerman, M. (2001). Characteristics of patent litigation: A window on competition. *RAND Journal of Economics*, 32, 129-151, doi: 10.2307/2696401.
- Layne-Farrar, A. and Lerner, J. (2011). To Join or Not to Join: Examining Patent Pool Participation and Rent Sharing Rules, *Int'l J. Indus. Org.*, 29, 294-296, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=945189, doi: 10.1016/j.ijindorg.2010.08.006.
- Leiponen, A. & Byma, J. (2009). If you cannot block, you better run: Small firms, cooperative innovation, and appropriation strategies. *Research Policy*, 38, 1478-1488, doi: 10.1016/j.respol.2009.06.003.

- Leiponen, A., & Delcamp, H. (2019). The anatomy of a troll? Patent licensing business models in the light of patent reassignment data. *Research Policy*, 48(1), 298-311, doi: 10.1016/j.respol.2018.08.019.
- Lemley, M. A. (2016). The Surprising Resilience of the Patent System. *Tex. L. Rev.*, 95, 1, doi: 10.2139/ssrn.2784456.
- Lemley, M. A., & Melamed, A. D. (2013). Missing the Forest for the Trolls. *Colum. L. Rev.*, 113, 2117, doi: 10.1017/9781316415887.002.
- Lemley, M. A., Richardson, K., & Oliver, E. (2018). The patent enforcement iceberg. *Tex. L. Rev.*, 97, 801, doi: 10.2139/ssrn.3087573.
- Lemley, M.A. & Myhrvold, N. (2007). How to Make a Patent Market, 36 *Hofstra L. Rev.*, 257.
- Lemley, M.A. & Shapiro, C. (2005). Probabilistic patents. *Journal of Economic Perspectives*, 19, 75-98, doi: 10.1257/0895330054048650.
- Lemley, M.A. & Shapiro, C. (2007). Patent Holdup and Royalty Stacking, 85 *Tex. L. Rev.*, 1991-2003.
- Lerner, J., Tirole, J. and Strojwas, M. (2003). Cooperative marketing agreements between competitors: Evidence from patent pools, 31 *NBER Working Paper No. 9680*, doi: 10.2139/ssrn.399260.
- Lev, B. (2001). *Intangibles: Management, Measurement, and Reporting*. Washington, DC: Brookings.
- Levin, R. C., Klevorick, A. K., Nelson, R. R., & Winter, S. G. (1987). Appropriating the returns from industrial research and development. *Brookings Papers on Economic Activity*, 14(3): 783-831, doi: 10.2307/2534454.
- Linden, G. & Somaya, D. (2003). System-on-a-chip integration in the semiconductor industry: Industry structure and firm strategies. *Industrial and Corporate Change*, 12, 545-576, doi: 10.1093/icc/12.3.545.
- Lippman, S.A. & Rumelt, R.P. (1982). Uncertain imitability: An analysis of interfirm differences in efficiency under competition. *Bell Journal of Economics*, 13(2), 418-438, doi: 10.2307/3003464.
- Locke, John P. (1698), *Two Treatises on Government* (3rd ed), doi: 10.12987/9780300129182-003.
- Love, B.J. (2012). An empirical study of patent litigation timing: Could a patent term reduction decimate trolls without harming innovators. *Santa Clara Univ. School of Law, Working Paper No. 1917709*, 2011---12), available at <http://ssrn.com/abstract=1917709>, doi: 10.2139/ssrn.1917709.
- Mahoney, J.T. & Pandian, J.R. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal*, 13, 363-380, doi: 10.1002/smj.4250130505.
- Mansfield, E., Rapoport, J., Romeo, A., Wagner, S., & Beardsley, G. (1977). Social and private rates of return from industrial innovations. *The quarterly Journal of economics*, 91(2), 221-240, doi: 10.2307/1885415.

- Mansfield, E., Schwartz, M. & Wagner, S. (1981). Imitation Costs and Patents: An Empirical Study. *Economic Journal*, 91, 907-918, doi: 10.2307/2232499.
- Marr, B., & Adams, C. (2004). The balanced scorecard and intangible assets: similar ideas, unaligned concepts. *Measuring Business Excellence*, 8(3): 18-27, doi: 10.1108/13683040410555582.
- Maskus, K. E. (2000). *Intellectual property rights in the global economy*. Peterson Institute.
- Menell, P. S., Powers, M. D., & Carlson, S. C. (2010). Patent Claim Construction: A Modern Synthesis and Structured Framework. *Berkeley Tech. LJ*, 25, 711.
- Menell, P., Lemley, M. & Merges, R. (2017). *Intellectual Property in the New Technological Age: Volume I: Perspectives, Trade Secrets & Patents*, Clause 8 Publishing.
- Merz, J. F., & Pace, N. M. (1994). Trends in patent litigation: The apparent influence of strengthened patents attributable to the Court of Appeals for the Federal Circuit. *Journal of the Patent and Trademark Office Society*, 76: 579-590.
- Mowery, D. and Rosenberg, N. (1998). *Paths of Innovation: Technological Change in 20th-Century America*, 17, doi: 10.1017/CBO9780511611957.
- Myhrvold, N. & Lemley, M. (2007). How to Make a Patent Market, 36 *Hofstra L. Rev.*, 257.
- Myhrvold, N. (2006). Invention: the Next Software. *US Senate Judiciary Committee*.
- Myhrvold, N. (2010). The Big Idea: Funding Eureka, *Harvard Business Review*, 40, available at <http://hbr.org/2010/03/the-big-idea-funding-eureka/ar/1>
- Niiniluoto, I. (1993). The aim and structure of applied research. *Erkenntnis*, 38(1), 1-21, doi: 10.1007/BF01129020.
- North, D. C. (1990). *Institutions, Institutional Change, and Economic Performance*. Cambridge, UK: Cambridge University Press, doi: 10.1017/CBO9780511808678.
- Ozga, S. A. (1960). Imperfect markets through lack of knowledge. *The Quarterly Journal of Economics*, 29-52, doi: 10.2307/1884132.
- Parchomovsky, G., & Wagner, R. P. (2005). *Patent portfolios*. U. Pa. L. Rev., 154, 1, doi: 10.2307/25047582.
- Penrose, E. T. (1959). *The Theory of the Growth of the Firm*. Oxford: Basil Blackwell, doi: 10.1093/0198289774.001.0001.
- Peteraf, M.A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14, 179-191, doi: 10.1002/smj.4250140303.
- Piazza, M., & Pedicini, M. (2019). What Arrow's Information Paradox Says (to Philosophers). In *On the Cognitive, Ethical, and Scientific Dimensions of Artificial Intelligence* (pp. 83-94). Springer, Cham.
- Pisano, G. P. (1991). The governance of innovation: vertical integration and collaborative arrangements in the biotechnology industry. *Research Policy*, 20(3), 237-249, doi: 10.1016/0048-7333(91)90054-T.
- Pisano, G. (2006). Profiting from innovation and the intellectual property revolution. *Research Policy*, 35, 1122-1130, doi: 10.1016/j.respol.2006.09.008.

- Pisano, G. and Teece, D. (2007). How to Capture Value from Innovation - Shaping Intellectual Property and Industry Architecture. *California Management Review*, 50(1), 278-296, doi: 10.2307/41166428.
- Polidoro, F. & Toh, P. K. (2011). Letting rivals come close or warding them off? The effects of substitution threat on imitation deterrence. *Academy of Management Journal*, 54, 369-392, doi: 10.5465/amj.2011.60263099.
- Razi, G.M. (1963). Reflections on Equity in the Civil Law Systems, 13 *Am. U. L. Rev.* 24 (1963-1964).
- Reitzig, M. (2007). How executives can enhance IP strategy and performance. *MIT Sloan management review*, 49(1), 37-43.
- Reitzig, M. *et al.* (2010). Collateral Damage for R&D Manufacturers: How Patent Sharks Operate in Markets for Technology, Industrial and Corporate Change, 19 *Indus. & Corp. Change*, 947-967.
- Reitzig, M., & Sorenson, O. (2013). Biases in the selection stage of bottom-up strategy formulation. *Strategic Management Journal*, 34(7), 782-799, doi: 10.1002/smj.2047.
- Reitzig, M., Henkel, J. & Heath, C. (2007). On sharks, trolls, and their patent prey— Unrealistic damage awards and firms’ strategies of “being infringed.” *Research Policy*, 36(1), 134-154, doi: 10.1016/j.respol.2006.10.003.
- Rivette, K.G. & Kline, D. (2000). Discovering new value in intellectual property. *Harvard Business Review*, 78(1), 2-12.
- Rivette, K.G. and Kline, D. (2000). *Rembrandts in the Attic: Unlocking the Hidden Value of Patents*, 59–60.
- Robbins, C. A. (2006). The impact of gravity-weighted knowledge spillovers on productivity in manufacturing. *The Journal of Technology Transfer*, 31(1), 45-60, doi: 10.1007/s10961-005-5012-8.
- Romme, A. G. L. (2003). Making a difference: Organization as design. *Organization science*, 14(5), 558-573, doi: 10.1287/orsc.14.5.558.16769.
- Romme, G. (2016). *The quest for professionalism: The case of management and entrepreneurship*. Oxford University Press, doi: 10.1093/acprof:oso/9780198737735.001.0001.
- Roos, G. and Pike, S. (2018). *Intellectual Capital as a Management Tool, Essentials for Leaders and Managers*, London: Routledge, DOI<https://doi.org/10.4324/9780429448119>.
- Rosenberg, N. (1982). *Inside the Black Box: Technology and Economics*. Cambridge: Cambridge University Press, doi: 10.1017/CBO9780511611940.
- Rosenberg, N., & Birdzell, L. E. (1986). *How the West Grew Rich: The Transformation of the Industrial World*. New York: Basic Books.
- Rudy, B.C. & Black, S.L (2018). Attack or Defend? The Role of Institutional Context on Patent Litigation Strategies. *Journal of Management*, 44(3), 1226-1249, doi: 10.1177/0149206315605168.
- Rumelt, R.P. (1984). Towards a strategic theory of the firm. In R. B. Lamb (Ed.), *Competitive strategic management*: 556-570. Englewood Cliffs, NJ: Prentice Hall.

- Sacco, R. (1991). Legal formants: a dynamic approach to comparative law (Installment I of II). *The American Journal of Comparative Law*, 39(1), 1-34.
- Sag, M. & Rohde, K. (2007). Patent Reform and Differential Impact, *Minn. J. L. Sci. & Tech.*, 8, 33-35, doi: 10.2139/ssrn.925722.
- Scherer, F. M. (1999). *New Perspectives On Economic Growth And Technological Innovation*.
- Schreyögg, G., & Kliesch-Eberl, M. (2007). How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization. *Strategic management journal*, 28(9), 913-933, doi: 10.1002/smj.613.
- Schumpeter, J. (1976). *Capitalism, Socialism And Democracy* (5th Ed.), doi: 10.4324/9780203857090.
- Shapiro, C. (2003). Antitrust Limits to Patent Settlements. *RAND Journal of Economics* (2003). 34(2), 391-411, doi: 10.2307/1593724.
- Simon, H. (1947). *Administrative Behavior*. New York: Macmillan, doi: 10.1097/00000446-195002000-00071.
- Simon, H. A. (1988). The science of design: Creating the artificial. *Design Issues*, 67-82, doi: 10.2307/1511391.
- Simon, H. (1996). *The Sciences of the Artificial*, 3rd ed., MIT Press, Cambridge, MA, doi: 10.7551/mitpress/12107.001.0001.
- Somaya, D. (2012). Patent Strategy and Management: An Integrative Review and Research Agenda. *Journal of Management*, 38(4), 1084-1114, doi: 10.1177/0149206312444447.
- Somaya, D. (2016). How patent strategy affects the timing and method of patent litigation resolution. *Advances in Strategic Management* (2016), 34, 471-504,, doi: 10.1108/S0742-332220160000034014.
- Stefanadis, C. (1997). Downstream vertical foreclosure and upstream innovation. *Journal of Industrial Economics*, 45, 445-456, doi: 10.1111/1467-6451.00058.
- Stigler, G.J. (1951). The Division Of Labor Is Limited By The Extent Of The Market, *J. Pol. Econ.*, 59(3). 185-193, doi: 10.1086/257075.
- Teece, D. J. (2010). A tribute to Oliver Williamson: Williamson's impact on the theory and practice of management. *California Management Review*, 52(2), 167-176.
- Teece, D. J. (2014). A dynamic capabilities-based entrepreneurial theory of the multinational enterprise. *Journal of International Business Studies*, 45(1), 8-37, 10.1007/978-1-137-54471-1_9.
- Teece, D. J. (2019). A capability theory of the firm: an economics and (strategic) management perspective. *New Zealand Economic Papers*, 53(1), 1-43, doi: 10.1080/00779954.2017.1371208.
- Teece, D.J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy*, 15, 285-305, doi: 10.1016/0048-7333(86)90027-2
- Teece, D. J. (2006). Reflections on “profiting from innovation”. *Research policy*, 35(8), 1131-1146, doi: 10.1016/j.respol.2006.09.009.

- Teece, D.J. (2000). *Managing intellectual capital: Organizational, strategic, and policy dimensions*. Oxford: Oxford University Press.
- Teece, D.J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18, 509-533, doi: 10.1016/B978-0-7506-7088-3.50009-7.
- Tietze, F. (2011). Managing Technology Market Transactions - Can Auctions Facilitate Innovation? *Institute for Technology and Innovation Management* (unpublished Ph.D. thesis), Hamburg University of Technology.
- Tietze, F., & Herstatt, C. (2010, June). Technology market intermediaries and innovation. In DRUID Summer Conference, doi: 0.2139/ssrn.1619295.
- Troy, I. & Werle, R. (2008) *Uncertainty And The Market For Patents*, available at: www.mpifg.de/pu/workpap/wp08-2.pdf.
- von Krogh, G., Rossi-Lamastra, C., Haefliger, S., (2012) Phenomenon-based Research in Management and Organisation Science: When is it Rigorous and Does it Matter? *Long Range Planning* 45, 277-298, doi: 10.1016/j.lrp.2012.05.001.
- Wagner, R.P. & Petherbridge, L. (2004). Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance, 152 *U. Pa. L. Rev.*, 1161-1163, doi: 10.2307/3313015.
- Williamson, O. E. (1975). *Markets and Hierarchies: Analysis and Antitrust Implications, a Study in the Economics of Internal Organization*. New York: Free Press.
- Williamson, O. (1979). Transaction-Cost Economics: The Governance of Contractual Relations, 22 *J. Law & Econ.*, 239, doi: 10.1086/466942.
- Williamson, O. (1985). *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*. New York, NY: Free Press, doi: 10.1007/978-3-8349-9320-5_6.
- Williamson, O. (1991). Comparative economic organization: The analysis of discrete structural alternatives. *Administrative Science Quarterly*, 36(4): 269-296, doi: 10.2307/2393356.
- Williamson, O. (1996). *The Mechanisms of Governance*. New York: Oxford University Press.
- Yin, R. K. (1994). *Case study research (Vol. 2)*. Thousand Oaks, CA: Sage.
- Ziegler, N., Ruether, F., Bader, M. A., & Gassmann, O. (2013). Creating value through external intellectual property commercialization: a desorptive capacity view. *The Journal of Technology Transfer*, 38(6), 930-949, doi: 0.1007/s10961-013-9305-z.

Paper I

Stanford **Technology** Law Review

The Giants Among Us

TOM EWING & ROBIN FELDMAN^{*}

CITE AS: 2012 STAN. TECH. L. REV. 1

<http://stlr.stanford.edu/pdf/feldman-giants-among-us.pdf>

^{*} © Thomas Ewing, JD, MS, MA, Licentiate in Industrial Management & Economics (expected 2012); Robin Feldman, Professor of Law & Director of LAB Project, UC Hastings Law. We are grateful to Ben DePoorter, Josh Horowitz, Jonathan Masur, Darien Shanske, Steve Tadelis, Ove Granstrand, and Marcus Finlöf Holgersson. We would also like to thank James Nolan, Patricia Dyck, Chris Johnson, Sandy Liu, Jason Ross, Williams Casey, Leanne Yu, and Elaine Zhong for their excellent research assistance.

TABLE OF CONTENTS

INTRODUCTION	1
I. FACTS	2
<i>A. Intellectual Ventures</i>	3
<i>B. Patents and Applications Held by Intellectual Ventures</i>	5
<i>C. Origins of the Portfolio</i>	7
<i>C. Funding Sources</i>	9
<i>D. Return on Investment</i>	9
<i>E. Collecting Revenue: Privateering & Other Exploits</i>	12
<i>F. Other Mass Aggregators & Interconnections</i>	15
II. POTENTIAL POSITIVE EFFECTS	18
<i>A. The Forgotten Inventor</i>	18
<i>B. The Middleman</i>	20
<i>C. The Litigation Defense Fund</i>	21
III. POTENTIAL HARMS.....	23
<i>A. A Tax on Production</i>	25
<i>B. Opportunities for Anticompetitive Conduct</i>	26
<i>C. Raising Rivals' Costs</i>	26
<i>D. Other Troubling Market Behavior</i>	28
<i>E. Odd Characteristics of the Inputs Supplying the Market</i>	29
<i>F. Odd Characteristics of the Aggregator Business</i>	30
<i>G. Economic Stability</i>	31
<i>H. "To Serve Man"</i>	32
<i>I. Ancillary Implications</i>	33
IV. A FEW OBSERVATIONS.....	35
<i>A. Regulatory Oversight</i>	35
<i>B. Let the Sun Shine In</i>	37
<i>C. Removing the Teeth of the Tiger</i>	41
CONCLUSION	41
APPENDIX A	43
APPENDIX B	44
APPENDIX C.....	47

INTRODUCTION

¶1 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 of this change, 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.

¶2 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.

¶3 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 into two broad categories.¹ 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. 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. Troll activity is generally reviled by operating companies as falling somewhere between extortion and a drag on innovation.² 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.³

¶4 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.

¶5 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.⁴ In some of the acquisition

¹ 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 COMM’N, *THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION*, 2011 WL 838912 at 60 (2011), available at <http://www.ftc.gov/os/2011/03/110307patentreport.pdf> (“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).

² Chien, *supra* note 1 at 1577-78 (“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); 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); 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.”); see also Jay P. Kesan, *Transferring Innovation*, 77 FORDHAM L. REV. 2169, 2193 (2009) (cautioning universities against appearing troll-like because patent trolls are perceived unsympathetically).

³ See Lemley, *supra* note 2, at 613-14; Magliocca, *supra* note 2 at 1810 (“Critics claim that these firms are little more than blackmailers who put a crippling tax on productive enterprises.”).

⁴ 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.

activity, mass aggregators purchase large chunks, and even the majority, of an operating company's patents and patent applications. They typically pay cash up front, as well as a share of any future profits generated from asserting the patents against anyone other than the selling manufacturer. 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 the mass aggregators' investors.

¶6 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.

¶7 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 its economics and implications, and to offer some normative considerations. In the descriptive section, we focus on the oldest and 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 1300 shell companies and thousands of patents. The section also describes in brief form several other mass aggregators, including ones that are public companies.

¶8 In 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.

¶9 On the other side, we look at the potential economic dangers of mass aggregators and the market for patent monetization they create. 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.

¶10 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 these market-level changes. The section also considers broadly the types of changes that would have to occur for such participation to take place in a meaningful and minimally disruptive fashion.

I. FACTS

¶11 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 researching 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.⁵

⁵ Alex Blumberg & Laura Sydell, *This American Life: When Patents Attack* (National Public Radio broadcast, July 22, 2011) (transcript available at <http://www.npr.org/blogs/money/2011/07/25/138576167/when-patents-attack>) (noting that the

¶12 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.

¶13 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.

A. Intellectual Ventures

¶14 Much about Intellectual Ventures is shrouded in secrecy. Intellectual Ventures has acknowledged that it intentionally withholds the true scope and nature of its IP portfolio.⁶ 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 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.

¶15 Intellectual Ventures was founded in 2000 by Nathan Myhrvold and Edward Jung, both of whom formerly served in high-level positions at Microsoft.⁷ Peter Detkin also played a key management role in developing Intellectual Ventures.⁸ In one of patent law’s great ironies, Detkin coined the derogatory term “patent troll” during his tenure as the chief intellectual property officer at Intel.⁹

¶16 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.

¶17 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 Capitalism.” They define Invention Capitalism as applying concepts from venture capital and private equity to develop and commercially exploit new inventions.¹⁰

¶18 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

reluctance was fueled in part by fear and in part by Intellectual Ventures’ nondisclosure agreement, rumored to be the strictest in Silicon Valley).

⁶ See Victoria Slind-Flor, *The Goodfellas: Detkin and Myhrvold on Patents, Trolls & Intellectual Ventures*, 19 INTELL. ASSET MGMT. 28, 34 (noting that Intellectual Ventures will not reveal how many patents it has or the entities to which it has licensed technology, and quoting 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’*, N.Y. TIMES, Feb. 18, 2010, at B1 (paraphrasing Myhrvold as saying that Intellectual Venture’s “pendant for secrecy” is a legacy from its startup days when it “did not want to tip its hand”).

⁷ Intellectual Ventures LLC was formed on September 21, 1999. Corporations Division – Registration Data Search, WASH. SEC. OF STATE, http://www.sos.wa.gov/corps/search_detail.aspx?ubi=601981783 (last visited Nov. 15, 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> (last visited Nov. 15, 2011).

⁸ Detkin joined Intellectual Ventures in 2002. Peter N. Detkin, *Leveling the Patent Playing Field*, 6 J. MARSHALL REV. INTELL. PROP. L. 636 n.* (2007), available at <http://www.jmripl.com/Publications/Vol6/Issue4/Detkin.pdf>.

⁹ *Id.* at 636 (stating that he coined the term); Brenda Sandburg, *You May Not Have a Choice. Trolling for Dollars*, THE RECORDER (July 30, 2001), <http://www.phonetel.com/pdfs/LWTrolls.pdf> (using the term and attributing it to Detkin).

¹⁰ See Detkin, *supra* note 8, at 636 n.*; Lohr, *supra* note 6 (citing Nathan Myhrvold); Nathan Myhrvold, *The Big Idea: Funding Eureka*, HARVARD BUSINESS REVIEW, Mar. 2010, at 40, available at <http://hbr.org/2010/03/the-big-idea-funding-eureka/ar/1>.

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.¹¹

¶19 The scope of Intellectual Ventures' activities is 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.

¶20 Getting a handle on the scope and activities of an entity as secretive as Intellectual Ventures is not easy.¹² We have tried to create a picture of the company by piecing together information from publicly available sources. These sources include the patent assignment records of the United States Patent and Trademark Office (USPTO); the USPTO's PAIR database,¹³ 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.

¶21 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.¹⁴ In 2006, one magazine identified 50 shell companies that it believed were being operated by Intellectual Ventures. Our research has pieced together 1276 shell companies associated with Intellectual Ventures. We do not believe that we have identified all of the Intellectual Ventures shell companies, but these 1276 companies alone hold roughly 8000 US patents and 3000 pending US patent applications as of May 2011.¹⁵

¶22 Even with some knowledge of the shell companies, tracking the Intellectual Ventures portfolio is 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.¹⁶

¶23 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.”¹⁷ 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,¹⁸ design patents, trademarks, and any trade secrets

¹¹ Nathan Myhrvold, Speech at the Churchill Club in Palo Alto, CA (Feb. 27, 2007).

¹² Credit for this exhaustive research goes to co-author Tom Ewing.

¹³ PAIR stands for Patent Application Information Retrieval.

¹⁴ See Slind-Flor, *supra* note 6, at 32 (quoting Peter Detkin as acknowledging that Intellectual Ventures uses shells for acquisitions and noting that many companies do this to keep potential liabilities of the acquired company from affecting the whole organization).

¹⁵ At least 175 of the patents acquired by Intellectual Ventures have reached the end of their terms and expired. Likewise, many more of their 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 pay maintenance fees. In any event, the “active” US portfolio is likely a bit smaller than suggested by the numbers above.

¹⁶ In one case, Intellectual Ventures opted not to record a change of ownership for 2506 days following execution. An assignment for US Publication No. 20090254972 was executed on Aug. 9, 2002, but not recorded until June 19, 2009. See, USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search “Publication Number” for “20090254972”).

¹⁷ Press Release, Intellectual Ventures, BlueCat Networks Signs Patent Agreement With Intellectual Ventures (June 28, 2011), available at http://intellectualventures.com/newsroom/pressreleases/11-06-28/BlueCat_Networks_Signs_Patent_Agreement_With_Intellectual_Ventures.aspx.

¹⁸ The company has claimed to have some 3000 unfiled invention disclosures. See Tom Ewing, *Inside the World of Public*

owned or licensed by the company. Further confusing the issue is whether the company counts as “invention assets” patents or only patent 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.

¶24 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 US companies and approximately the 15th largest patent portfolio worldwide.¹⁹

B. Patents and Applications Held by Intellectual Ventures

¶25 With a great deal of digging, we were able to locate 1276 shell companies and related entities that appear to be associated with Intellectual Ventures.²⁰ These companies hold approximately 8000 US patents and 3000 pending US patent applications. We do not believe that we have found all of the shell companies.²¹ Nevertheless, we believe we can calculate a reasonable approximation of Intellectual 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 1276 shell companies.²²

¶26 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 1200 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.

¶27 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 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

Auctions, 42 INTELL. ASSET MGMT. 67 (2010).

¹⁹ 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.

²⁰ The shell companies that we know about seem to serve the following functions: 1201 patent holding shells, 1 trademark holding shell, 51 asset management shells, and 24 executive and investment shells. See Appendix C for a further discussion of research methodology.

²¹ 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.

²² 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*, 36 INTELL. ASSET MAG. 9, 10 (2009). 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. Page, *supra* 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.

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.

¶28 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 2057 patents and 774 applications. Adding these missing patents and applications to our totals would yield roughly 10,000 patents and 3700 applications.²³

¶29 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 filings²⁴ 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 2011.²⁵ Including unpublished applications keeps our estimate of US patents at 10,000 but the number of applications rises to roughly 4400.

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

¶31 Despite having uncovered more than 1200 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.²⁶ Similarly, the US Navy publicly disclosed the licensing of patents to two shell companies, but these licenses have not been recorded.²⁷

¶32 In terms of the non-US portion of the portfolio, we note that approximately half of Intellectual Ventures' US 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.²⁸ 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 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.²⁹

¶33 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

²³ This estimate does include certain recently acquired portfolios or apparently allied ones.

²⁴ E.g., continuation applications and reissue applications.

²⁵ 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.

²⁶ These companies are Eilean Technologies, Jacksonville Timucuan, Discovery Advance, Bettles Gates, and 10Spot.

²⁷ These companies are Bixenta Ventures and NanoComm Systems.

²⁸ Gaetan de Rassenfosse, *How SMEs Exploit Their Intellectual Property Assets: Evidence from Survey Data* 2, 3-4, 8, 18 (Melbourne Inst. of Applied Econ. and Soc. Research, Working Paper No. 20/10, 2010), available at <http://www.springerlink.com/content/g3g2641632872gp3/>.

²⁹ See, e.g., WORLD INTELLECTUAL PROP. ORG., WORLD PATENT REPORT, A STATISTICAL REVIEW 7 (2008), available at http://www.wipo.int/export/sites/www/ipstats/en/statistics/patents/pdf/wipo_pub_931.pdf.

considered.³⁰ Not all patents have a foreign counterpart, however, and most patents do not have foreign counterparts in more than a handful of countries.

¶34 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 US patents held by the company. For example, we happened upon two examples of this in finding a set of US 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.³¹

¶35 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 only from the US 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 patents³² 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.

C. Origins of the Portfolio

¶36 We were able to find evidence that Intellectual Ventures has engaged in more than 1000 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.³³

¶37 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 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 Intellectual Ventures’ portfolio or a targeted growth area for the future.

1. Acquisitions Through University Transactions

¶38 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.³⁴ These relationships are not necessarily public because they may involve patents whose ownership remains with the university. For example,

³⁰ 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.

³¹ The two foreign companies noted here are Campinas and Torino Wireless.

³² This “worldwide” estimate includes the US patents.

³³ 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 distribution of 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.

³⁴ *Intellectual Ventures Worldwide*, INTELLECTUAL VENTURES, <http://intellectualventures.com/WhoWeAre/Worldwide.aspx> (last visited Nov. 15, 2011).

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 may involve wholesale assignment of future innovation.

¶39 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 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.

¶40 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 become unhappy with the deal and respond by creating very little that would fall within the terms of the agreement for the period of the agreement or by simply devoting their efforts to non-patentable activities. That would be a bad result on all levels—for the academic institution, for Intellectual Ventures, and for innovation as a whole.

2. Acquisition Through Portfolio Assumption

¶41 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.³⁵

¶42 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.

¶43 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

³⁵ 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.

with the portfolio. Digimarc also retains a license to use the patents, as long as the use relates to its existing business.

C. Funding Sources

¶44 To finance its acquisitions and operations, Intellectual Ventures has raised at least \$5 billion, according to published reports.³⁶ 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.³⁷

¶45 Intellectual Ventures' investments are distributed among more than five funds, and the investors have not necessarily invested in each fund or in each fund equally.³⁸ 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 Amazon.com, American Express, Adobe, Cisco, Verizon, and Yahoo!, as well as Xilinx itself.³⁹

¶46 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,⁴⁰ although actual terms from may vary significantly from fund to fund and acquisition to acquisition.

D. Return on Investment

¶47 One of the most interesting questions about mass aggregators, 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.⁴¹ As Vincent Pluvineau, 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.⁴² Pluvineau has stated, in fact, that some technology company investors have indicated specific

³⁶ *Investing in Invention*, INTELLECTUAL VENTURES, <http://intellectualventures.com/WhoWeAre.aspx> (last visited Nov. 15, 2011); 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, No. 11-CV-0671-SI (N.D. Cal. May 16, 2011).

³⁷ *The Need for Innovation in Energy*, INTELLECTUAL VENTURES, <http://intellectualventures.com/OurInventions/TerraPower.aspx> (last visited Nov. 15, 2011); John Letzing, *Myhrvold's Patent Firm Sees Revenue Swell*, MARKETWATCH (Mar. 4, 2011, 1:58 AM), <http://www.marketwatch.com/story/myhrvolds-patent-firm-sees-revenue-swell-2011-03-04>.

³⁸ 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.

³⁹ The full list of investors in the four funds is listed at Appendix B.

⁴⁰ Page, *supra* note 22, at 10.

⁴¹ For example, Verizon paid \$350 million for patent licenses and an equity stake in one of Intellectual Ventures' investment funds in July 2008, according to published reports. See, e.g., *Law.com - Verizon Patent Case Marks a First for Intellectual Ventures*, LEGAL TECHNOLOGY TODAY (Feb. 26, 2010), <http://www.legaltechtoday.com/2010/02/26/law-com-verizon-patent-case-marks-a-first-for-intellectual-ventures-2/>. Intuit similarly struck a \$120 million deal with Intellectual Ventures in early 2009. See, e.g., Zusha Elinson, *Intellectual Ventures and Intuit Work Out \$120 Million Licensing Deal, Say Sources*, THE RECORDER (June 24, 2009), available at <http://www.law.com/jsp/article.jsp?id=1202431711930&slreturn=1>.

⁴² For a description of using patents as bargaining chips in infringement litigation, see *infra* text accompanying note 169.

technology areas where they would like Intellectual Ventures to acquire patent rights in order to obtain license rights.⁴³

¶48 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, Pluvillage confirmed that the company has some purely financial investors, and financial investors typically have no need for patent licenses. Pluvillage 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.

¶49 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.⁴⁴ 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.⁴⁵ Verizon purchased a patent from one of Intellectual Ventures' shell companies, which was then put to work as a counterclaim in the TiVo suit⁴⁶ in a program that Intellectual Ventures calls "IP for Defense."⁴⁷

¶50 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.⁴⁸ 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 litigation, just at the time it was needed.⁴⁹

¶51 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.⁵⁰ 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.

¶52 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

⁴³ Page, *supra* note 22, at 11 (quoting Pluvillage's statement that financial investors invest in Intellectual Ventures because "it's uncorrelated and long term." For strategic investors, Intellectual Ventures offers a "defensive function," including the ability to tell Intellectual Ventures "which technology domain they want access to").

⁴⁴ We do not know if Intellectual Ventures' licenses are perpetual or require recurring royalty payments.

⁴⁵ TiVo sued Verizon on August 26, 2009. *TiVo Inc. v. Verizon Comm'ns, Inc.*, No. 2:09-CV-257, 2010 U.S. Dist. LEXIS 112320 (E.D. Tex. filed Aug. 26, 2009).

⁴⁶ The Intellectual Ventures shell was originally named Aerosound LLC before a recordation of its name change was made with the USPTO on February 17, 2010. *See* USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search "Patent Number" for "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 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 Comm'ns, Inc.*, No. 2:09-CV-257-DF (E.D. Tex. 2010). The USPTO assignment database shows no patents assigned to "Services Corp." *See* USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search "Assignee Name" for "Services Corp").

⁴⁷ *Value-Added Solutions & Services*, INTELLECTUAL VENTURES, <http://www.intven.com/ProductsServices/Licensing/ValueAddedProducts.aspx> (last visited Dec. 5, 2011.).

⁴⁸ Vlingo also had two purchased patents, one from RPX and one from Nuance.

⁴⁹ 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* USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search "Patent Number" for "5680388").

⁵⁰ One Intellectual Ventures executive told one of the authors that the option to repurchase was a term of the Verizon deal, but we have not been able to independently verify this.

Ventures and Xilinx in 2011, it was interesting to note that Xilinx itself is listed as an Intellectual Ventures investor.

¶53 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 Ventures' patents on a true-up basis. If the license royalty is based on sales data from Xilinx, and Intellectual Ventures 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.

1. *Capital Returns*

¶54 One of the most striking figures to consider 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.

¶55 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 Ethereum 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.

¶56 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.

¶57 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.

¶58 Although the length of investment is an unknown parameter, assume a 10-year investment lifetime, which is not uncommon in the venture capital world.⁵¹ 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.

¶59 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,⁵² an amount comparable to the amount that IBM will receive from intellectual property rights royalties over the same time period.⁵³

E. Collecting Revenue: Privateering & Other Exploits

¶60 Intellectual Ventures claims to have collected approximately \$2 billion in licensing fees so far, based on the company's disclosures and recent licensing deals.⁵⁴ 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.

¶61 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 Venture capital firms generally require long-term investments in which the investor does not expect returns for 7-10 years. *FAQ*, NATIONAL VENTURE CAPITAL ASSOCIATION http://www.nvca.org/index.php?Itemid=147&id=119&option=com_content&view=article (last visited Nov. 15, 2011). There is a 20% minimum venture capital fund return. *See* BASIL PETERS, EXIT STRATEGIES FOR ANGEL INVESTORS 19 (2009), http://www.basilpeters.com/Presentations/Exit_Strategies_for_Angel_Investors_20090415_Part_1.pdf.

⁵² \$1.5 billion would presumably be expected to generate \$153 billion over a 20-year period.

⁵³ As a comparison, Intellectual Ventures has fewer than 800 employees; IBM has 427,000 employees.

⁵⁴ Intellectual Ventures' Licensing Overview Data Sheet for July, 2011 indicates they have collected \$2 billion in licensing revenue. *Global Licensing Overview*, INTELLECTUAL VENTURES, http://www.intellectualventures.com/Libraries/General/Licensing_Overview_Data_Sheet_July.sflb.ashx (last visited Nov. 15, 2011).

- ¶62 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 1856.⁵⁵ 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.
- ¶63 With Intellectual Ventures’ 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.
- ¶64 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 aggregator then approaches the company again, this time demanding that the company license a different one of the aggregator’s patents. This time, the company may be much more compliant.
- ¶65 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.”
- ¶66 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,⁵⁶ Gisel Assets KG LLC,⁵⁷ Kwon Holdings Group LLC,⁵⁸ SF IP Properties 24 LLC,⁵⁹ Ferrara Ethereum LLC,⁶⁰ and Mission Abstract Data LLC⁶¹ have been employed in patent infringement litigations respectively brought by the purchasers Picture Frame Innovations LLC,⁶² Patent Harbor LLC,⁶³ Oasis Research

⁵⁵ 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, Declaration Respecting Maritime Law, U.K.-France, April 16, 1856, available at <http://www.icrc.org/ihl.nsf/INTRO/105?OpenDocument>.

⁵⁶ See USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search “Assignee Name” for “Viviana”).

⁵⁷ See USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search “Assignee Name” for “Gisel Assets”).

⁵⁸ See USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search “Assignee Name” for “Kwon Holdings”).

⁵⁹ See USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search “Assignee Name” for “S.F. IP Properties 24”).

⁶⁰ See USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search “Assignee Name” for “Ferrara Ethereum”).

⁶¹ See USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search “Assignee Name” for “Mission Abstract”), and subsequent assignment from Intellectual Ventures Audio Data LLC. Intellectual Ventures also continues to sell patents, such as the recent sale from Intellectual Ventures’ Sinon Data LLC to Personal Voice Freedom LLC, a company apparently associated with Charles Eldering’s Technology, Patents, and Licensing Inc.

⁶² See, e.g., *Picture Frame Innovations, LLC v. Eastman Kodak Co.*, No. 1:2009-CV-04888 (N.D. Ill. filed Aug. 10, 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

LLC,⁶⁴ InMotion Imagery Technologies, LLC,⁶⁵ Webvention LLC,⁶⁶ and Mission Abstract Data LLC.⁶⁷ 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.⁶⁸ “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.⁶⁹ 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 license targets that cooperation is the better strategy.⁷⁰ 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.

¶67 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.⁷¹ In June of the following year, Intellectual Ventures re-sold these patents to Pragmatus.⁷² Five months later, Pragmatus used three of these patents to sue Facebook, YouTube, LinkedIn, and PhotoBucket.com for patent infringement.

¶68 Pragmatus 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.⁷³ 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.⁷⁴ While Intellectual Ventures probably does not own 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.⁷⁵

¶69 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.⁷⁶ We suspect there may be many more examples.

settled in January of 2011 without rulings on Kodak’s motions, and the terms of the settlement have not been made public.)

⁶³ See, e.g., *Patent Harbor, LLC v. LG Electronics, Inc.*, No. 6:2010-CV-00436 (E.D. Tex. filed Aug. 20, 2010).

⁶⁴ See, e.g., *Oasis Research, LLC v. Adrive, LLC*, No. 4:2010-CV-00435 (E.D. Tex. filed Aug. 30, 2010).

⁶⁵ See, e.g., *InMotion Imagery Tech., LLC v. JVC Ams., Corp.*, No. 2:2010-CV-00474 (E.D. Tex. filed Nov. 10, 2010).

⁶⁶ See, e.g., *Webvention LLC v. Adidas Am. Inc.*, No. 2:2010-CV-00410 (E.D. Tex. filed Oct. 5, 2010).

⁶⁷ See, e.g., *Mission Abstract Data LLC v. Beasley Broad. Grp. Inc.*, No. 1:11-CV-00176-LPS (D. Del. filed Mar. 1, 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.

⁶⁸ Stuart Weinberg, *Intellectual Ventures Patent Divestitures Continue*, DOW JONES NEWSWIREs, Feb. 24, 2010; see also Tom Ewing, *Introducing the Patent Privateers*, 45 INTELL. ASSET MGMT. 31, 36 (2011).

⁶⁹ Weinberg, *supra* note 68.

⁷⁰ 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.” Blumberg & Sydell, *supra* note 5.

⁷¹ According to Avistar’s SEC filings, the complete transaction involved 99 US and foreign patents and 26 pending applications worldwide. Avistar Commc’ns, Annual Report (Form 10-K), Exhibit 10.39 (Mar. 30, 2010).

⁷² These are the only patents whose ownership has been recorded to Pragmatus.

⁷³ See USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search “Patent Number” for “5581479” and “5636139”) (showing patent rights passing from Lot 20 to Intellectual Ventures to Pragmatus).

⁷⁴ See *Highlights of Ocean Tomo Spring 2007 Intellectual Property Auction*, WINSTON & STRAWN LLP (May 2007), http://www.winston.com/siteFiles/publications/Ocean_Tomo.pdf (disclosing that maximum lot price was \$3.025 million); see also *supra* note 73.

⁷⁵ 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.” Blumberg & Sydell, *supra* note 5.

⁷⁶ See, e.g., *InMotion Imagery Tech., LLC v. Notorious Prods., Inc.*, No. 2:2011-CV-00415 (E.D. Tex. filed Sept. 15, 2011);

¶70 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.⁷⁷ The company has filed additional infringement suits against the parties in other jurisdictions including the International Trade Commission.

F. Other Mass Aggregators & Interconnections

¶71 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.

1. Acacia Research Corporation

¶72 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.⁷⁸ The company's operating subsidiaries (a suite of limited liability companies) own or control the rights to more than 180 patent portfolios.⁷⁹ These portfolios relate to technologies 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.⁸⁰ 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.⁸¹

¶73 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.⁸² 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.

InMotion Imagery Tech., LLC v. LFP Video Group, LLC, No. 2:2011-CV-00261 (E.D. Tex. filed May 19, 2011); Patent Harbor, LLC v. Dreamworks Animation, Inc., No. 6:2011-CV-00229 (E.D. Tex. filed May 9, 2011); Patent Harbor, LLC v. Twentieth Century Fox Home Entm't, LLC, No. 6:2010-CV-00607 (E.D. Tex. filed Nov. 16, 2010); Patent Harbor, LLC v. Audiovox Corp., No. 6:2010-CV-00361 (E.D. Tex. filed July 21, 2010); InMotion Imagery Tech., LLC v. Penthouse Digital Media Prods., Inc., No. 2:2010-CV-00084 (E.D. Tex. filed Mar. 10, 2010). We have not checked all of Intellectual Ventures' 11,000 US patents to see which ones have been sold to third parties, but we suspect that Intellectual Ventures has sold more patents than the ones identified here.

⁷⁷ Intellectual Ventures I LLC v. Canon Inc., No. 1:2011-CV-00792 (D. Del. filed Sept. 9, 2011); Intellectual Ventures I LLC v. Altera Corp., No. 1:2010-CV-01065 (D. Del. filed Dec. 8, 2010); Intellectual Ventures I LLC v. Hynix Semiconductor Inc., No. 1:2010-CV-01066 (D. Del. filed Dec. 8, 2010).

⁷⁸ See Acacia, Quarterly Report (Form 10-Q) (June 30, 2011), available at <http://www.sec.gov/Archives/edgar/data/934549/000093454911000016/actg10q063011.htm>.

⁷⁹ *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.")

⁸⁰ *Investment Profile*, ACACIA RESEARCH CORP. (October 2011), <http://www.aciatechnologies.com/docs/AcaciaFactSheet.pdf> (last visited Nov. 15, 2011).

⁸¹ 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.)

⁸² 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/>.

¶74 Acacia⁸³ 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.⁸⁴ 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 risen from \$1.85/share to \$40.28/share by Sept. 27, 2011, representing a 36%/year rise over the 2002-2011 period.⁸⁵

¶75 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.⁸⁶ 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.

¶76 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.⁸⁷ The Acacia IP Fund aims to follow in the patent-licensing work that Acacia has pioneered.

2. Transpacific IP Ltd.

¶77 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.

¶78 Despite its low profile, the company has amassed a portfolio of more than 3,000 US patents and applications.⁸⁸ 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.

¶79 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.

¶80 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.⁸⁹ The transaction was characterized as a merger in documents filed with the USPTO.

¶81 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 mistakenly filed a power of attorney signed by a Transpacific representative in the prosecution file for a seemingly unrelated Intellectual

⁸³ Trading as ACTG on the NASDAQ exchange.

⁸⁴ See *Shareholders Major ACTG Acacia Research Corporation Shareholders*, MORNINGSTAR, <http://investors.morningstar.com/ownership/shareholders-major.html?t=ACTG®ion=USA&culture=en-us> (click tab for "Institutions").

⁸⁵ This rise does not include any dividends paid during this period. See Acacia Research (ACTG) from Dec. 16, 2002 to Sept. 27, 2011, GOOGLE FINANCE, <http://www.google.com/finance/historical?cid=681024&startdate=Jul%205%2C%202001&enddate=Oct%204%2C%202011&num=30&start=2220#> (last visited Nov. 15, 2011).

⁸⁶ See, e.g., *Acacia Technologies Licenses Digital Media Transmission Technology to NXTV*, ACACIA RESEARCH (Jan. 2, 2004), <http://www.acaciaresearch.com/pr/010204NXTV.pdf>.

⁸⁷ Acacia, Quarterly Report (Form 10-Q) (Nov. 1, 2010), available at <http://biz.yahoo.com/e/101101/actg10-q.html>.

⁸⁸ Plus an even greater number of non-US patents/applications.

⁸⁹ *Intellectual Ventures I LLC v. Altera Corp.*, No. 1:2010-CV-01065 (D. Del. filed Dec. 8, 2010); *Intellectual Ventures I LLC v. Hynix Semiconductor Inc.*, No. 1:2010-CV-01066 (D. Del. filed Dec. 8, 2010); USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search "Patent Number" for "6260087" and "5687325") (showing Transpacific's involvement in the assignment of these patents to Intellectual Ventures).

Ventures shell company, a mistake one would not expect to see with completely unrelated portfolios.⁹⁰

3. RPX

¶82 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.

¶83 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 companies, about half of which have either sold patents to Intellectual Ventures or have invested in Intellectual Ventures.⁹¹

¶84 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.⁹² 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.⁹³

4. Round Rock Research

¶85 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 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 lead the company.⁹⁴ It was also formed nearly a year before the 3,400 patents were transferred from Micron to Round Rock.

⁹⁰ The power of attorney filed for US Patent No. 7,427,742 on Sept. 2, 2010 is for Tang Sung Capital, a TransPacific IP shell, when the correct owner of the patent is Intellectual Ventures' 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.

⁹¹ RPX Corp., Final Prospectus (Form 424B4) (Sep. 16, 2011).

⁹² 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." *FAQs*, RPX CORP., <http://www.rpxcorp.com/index.cfm?pageid=23> (last visited Nov. 15, 2011).

⁹³ See Order No. 40, Initial Determination Granting Joint Motion to Terminate Investigation as to Respondent Performance Designed Products LLC, 2011 WL 4438273 (U.S. Int'l Trade Comm'n, 2011) (Inv. No. 337-TA-773) (Appendix A contains a redacted version of a template RPX license, and the language above is found in Section 2.1(c)); Order No. 11, Initial Determination Granting Joint Motion to Terminate Investigation as to Vivitek, 2011 WL 2677777 (U.S. Int'l Trade Comm'n, 2011) (Inv. No. 337-TA-773) (Appendix A contains another redacted version of a template RPX license, and the language above is also found in Section 2.1(c)).

⁹⁴ After hearing the definition of "privateer," Desmarais conceded that he was one, adding, "I've been called worse things." John Desmarais, Round Rock Research, Comment made during the privateering portion of a panel discussion entitled "The Developing NPE Market" at the Intellectual Property Business Congress in San Francisco (June 20, 2011). Just prior to this

¶86 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.⁹⁵

¶87 Desmarais is the only public face for Round Rock.⁹⁶ One could estimate that the value of 3,400 Micron patents probably approaches or exceeds a hefty fraction of \$1 billion,⁹⁷ which is seemingly a larger sum than even a successful patent litigator would likely be able to muster from his own resources.

¶88 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 Pragmatus 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.⁹⁸

II. POTENTIAL POSITIVE EFFECTS

¶89 We will begin by examining the potential positive effects that mass aggregators could bring. What opportunities are presented or failures are remedied by their appearance in the market? What positive implications do these effects have for innovation or for individual players in the world of invention?

A. The Forgotten Inventor

¶90 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.

¶91 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

comment, Desmarais and the other attendees had heard a discussion of privateering that included a Powerpoint slide that defined “privateering” as “The assertion of IPRs by an entity (the privateer), typically in the form of an NPE, against a target company for the direct benefit of the privateer and the consequential benefit of a sponsor company, where the consequential benefits exceed the direct benefits.”

⁹⁵ See, e.g., *Round Rock Research v. HTC Corp.*, No. 1:10-CV-00840-UNA (D. Del. filed Oct. 10, 2010).

⁹⁶ Desmarais, *supra* note 94.

⁹⁷ 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) (July 1, 2011), *available at* <http://www.sec.gov/Archives/edgar/data/72911/000119312511179790/d8k.htm>.

⁹⁸ 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.

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.⁹⁹

¶92 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;¹⁰⁰ 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,¹⁰¹ 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.¹⁰² 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 of claim construction, a process that is notoriously unpredictable.¹⁰³ 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.¹⁰⁴

¶93 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.¹⁰⁵

¶94 In short, the patent system works just fine for generating patents but stumbles in rights licensing.¹⁰⁶ Some producers take licenses from aggressive licensors whose patents may not be

⁹⁹ One example of this phenomenon played out in *NTP v. RIM*, 418 F.3d 1282 (Fed. Cir. 2005).

¹⁰⁰ 35 U.S.C. § 284 (2011) (“[T]he court may increase the damages up to three times the amount found or assessed.”).

¹⁰¹ 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 Nov. 15, 2011).

¹⁰² John M. Golden, *Constructing Patent Claims According to Their “Interpretive Community”: A Call for an Attorney-Plus-Artisan Perspective*, 21 HARV. J.L. & TECH. 321, 324-25 (2008); Amber H. Rovner, *Canons of Patent Claim Construction*, 873 PLI/PAT 85, 130 (2006) (“If one thing is certain . . . it is that claim construction is inherently uncertain.”) (internal quotation marks omitted); ROBIN FELDMAN, *RETHINKING PATENT RIGHTS* (forthcoming 2012).

¹⁰³ For commentary on the uncertainty of claim construction, and thereby claim scope, see, e.g., Gretchen A. Bender, *Uncertainty and Unpredictability in Patent Litigation: The Time is Ripe for a Consistent Claim Construction Methodology*, 8 J. INTELL. PROP. L. 175, 203-07 (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. 1105, 1161-63 (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. 1141, 1168 (2008) (offering that, due to the formalist structure of patent law, all claims are infinite in scope).

¹⁰⁴ See *Arlington Indus. v. Bridgeport Fittings, Inc.*, 632 F.3d 1246, 1248 (Fed. Cir. 2011).

¹⁰⁵ Eleven patent holders each entitled to 10% of gross revenue would amount to 110% of revenue.

¹⁰⁶ And may stumble even further in fulfilling its ultimate *raison d’être* in society.

infringed while other producers play games to avoid licensing rights from parties whose patents probably are infringed. It's a hard knock life for the small inventor and the forthright producer.¹⁰⁷

¶95 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.¹⁰⁸ 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.¹⁰⁹

¶96 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.

¶97 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 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.¹¹⁰

B. The Middleman

¶98 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.

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

¶100 As described above, Intellectual Ventures, if not the other mass aggregators, does have a laboratory set up like an incubator.¹¹¹ 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

¹⁰⁷ CHARLES STROUSE & MARTIN CHARNIN, *It's a Hard Knock Life*, on ANNIE (1977).

¹⁰⁸ Dan L. Burk & Mark A. Lemley, *Quantum Patent Mechanics*, 9 LEWIS & CLARK L. REV. 29, 53 (2005); Joshua S. Gans, David H. H. Hsu & Scott Stern, *The Impact of Uncertain Intellectual Property Rights on the Market for Ideas: Evidence from Patent Grant Delays*, 54 MGMT. SCI. 986-89 (2008), available at <http://www.law.northwestern.edu/academics/searle/papers/Stern.pdf>; Anne Kelley, *Practicing in the Patent Marketplace*, 78 U. CHI. L. REV. 115, 130 (2011).

¹⁰⁹ See, e.g., Nathan Myhrvold & Mark Lemley, *How to Make a Patent Market*, 36 HOFSTRA L. REV. 257 (2007).

¹¹⁰ We will discuss the 26-year “time lag” of patent exploitation and “To Serve Man” below.

¹¹¹ 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 Nov. 15, 2011).

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.

¶101 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.

C. The Litigation Defense Fund

¶102 The most likely positive role for mass aggregators may be as a Litigation Defense Fund. The patent world is characterized by extensive bargaining.¹¹² 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 are strong and ones that are weak, if I do not have appropriate patents to bargain with.

¶103 Wouldn't it be nice if one could find precisely the patent one needs at 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.¹¹³ This is reminiscent of the Just-In-Time inventory strategy, in which materials are purchased and products are made only as they are actually needed to meet customer orders.¹¹⁴

¶104 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.¹¹⁵

¶105 In addition to the Verizon example, several other companies have successfully used this tactic to mitigate lawsuits brought against them.¹¹⁶ Hewlett Packard, for example, filed an infringement suit against Acer in March 2007.¹¹⁷ Acer, a Taiwanese company, subsequently bought several patents from a Taiwanese research organization,¹¹⁸ and then asserted the patents in a countersuit against HP.¹¹⁹ The lawsuit was settled by mid-2008.¹²⁰

¹¹² FELDMAN, *supra* note 102 (arguing that patents do not grant clear, definitive rights but rather serve as the beginning of the bargaining over the contours of those rights).

¹¹³ See discussion at text accompanying *supra* note 46.

¹¹⁴ *Just in Time (JIT) Manufacturing and Inventory Control System*, ACCOUNTING FOR MANAGEMENT, http://www.accountingformanagement.com/just_in_time.htm (last visited Nov. 15, 2011).

¹¹⁵ Renting patents will do little to discourage lawsuits by non-practicing entities, however.

¹¹⁶ These examples are discussed in Ewing, *supra* note 68.

¹¹⁷ *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).

¹¹⁸ See USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search "Patent Number" for "5977626", "6188132", "6788257", "6280021") (showing execution dates to Acer in September and July of 2007); *What is ITRI?*, INDUS. TECH. RESEARCH INST., <http://www.itri.org.tw/eng/about/article.asp?RootNodeId=010&NodeId=0101> (last visited Dec. 5, 2011).

¹¹⁹ 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.

¶106 Similarly, Samsung defended itself in a patent infringement case by buying patents and then using them in a countersuit against Matsushita.¹²¹ Over the course of the litigation, Samsung also filed counterclaims related to patents that it had previously obtained from a German government agency.¹²²

¶107 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.

¶108 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 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.

¶109 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.¹²³

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

¶111 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.¹²⁴

¹²⁰ Press Release, Hewlett Packard, HP and Acer Settle Patent Litigation (June 8, 2008), *available at* <http://www.hp.com/hpinfo/newsroom/press/2008/080608a.html>.

¹²¹ Brief of Plaintiff at 5, *Matsushita v. Samsung*, No. 02-336, 2005 U.S. Dist. Ct. Motions LEXIS 32374 (D.N.J. 2005); Eric Hellweg, *SonicBlue's Bankruptcy: Big Media Wins*, CNN MONEY (Mar. 27, 2003), <http://money.cnn.com/2003/03/27/technology/techinvestor/hellweg/index.htm>; USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search "Patent Number" for "5481693") (showing transfer of the '693 patent to Samsung from SonicBlue on Nov. 14, 2002).

¹²² See USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search "Patent Number" for "5181209") (purchased from the German aerospace research center now known as Deutsches Zentrum für Luft-Und Raumfahrt E.V.).

¹²³ 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.

¹²⁴ This may encourage the non-practicing entity to enter a "volume business" on a lower revenue per unit transacted basis,

- ¶112 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.
- ¶113 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.
- ¶114 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 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.
- ¶115 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.¹²⁵ 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 needs to be advertised and concretized with strategic demonstrations of its potential power.¹²⁶
- ¶116 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.¹²⁷ 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

- ¶117 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

e.g., mass production.

¹²⁵ 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.

¹²⁶ See, e.g., 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.

¹²⁷ JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 160 (2008).

incentives for inefficient behaviors will carry over to the new patent system with the addition of aggregators.

¶118 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.¹²⁸ 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.

¶119 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.¹²⁹ The greatest risk from an infringement suit, however, is that the company's product will be 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, injunctions are still frequently granted.¹³⁰ 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, and who may therefore want to make the problem go away by settlement.

¶120 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.

¶121 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 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.

¶122 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

¹²⁸ For a discussion of the uncertainty of language and other uncertainties inherent in patent law, see FELDMAN, *supra* note 102.

¹²⁹ 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); FELDMAN, *supra* note 102.

¹³⁰ *eBay v. MercExchange, LLC*, 547 U.S. 388 (2006); *see also* Lily Lim & Sarah E. Craven, *Injunctions Enjoined: Remedies Restructured*, 25 SANTA CLARA COMPUTER & HIGH TECH. L.J. 787, 798 (2009) (stating that injunctions are still granted in 72% of cases after *eBay v. MercExchange*).

a given technical area in granting new patents.¹³¹ 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.

¶123 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.

¶124 One can think of mass aggregation as the patent system on speed.¹³² 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 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.

¶125 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

¶126 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.

¶127 Such a tax on current 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.

¶128 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.¹³³

¶129 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.

¹³¹ 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.

¹³² 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*, LAW.COM CORPORATE COUNSEL (Nov. 1, 2005), <http://www.law.com/jsp/cc/PubArticleFriendlyCC.jsp?id=900005439584>.

¹³³ This has led to what is sometimes known as “the two-dollar swing.” For every royalty dollar exchanged 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.

B. Opportunities for Anticompetitive Conduct

¶130 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.¹³⁴ With mass aggregation, early players in the field may become large enough to ensure success before others enter the 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.¹³⁵

¶131 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 affecting prices, quantities, qualities, or varieties of goods and services that are currently or potentially available.¹³⁶ 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.

¶132 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.

¶133 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 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.¹³⁷ 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.

¶135 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.

*C. Raising Rivals' Costs*¹³⁸

¶136 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

¹³⁴ See Peter N. Detkin, *Leveling the Patent Playing Field*, 6 J. MARSHALL REV. INTELL. PROP. L. 636, 641 (2007).

¹³⁵ 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.

¹³⁶ See U.S. DEPT OF JUSTICE AND FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY 2 (1995), available at <http://www.justice.gov/atr/public/guidelines/0558.htm>.

¹³⁷ See email from investor on file with authors.

¹³⁸ Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price*, 96 YALE L.J. 209 (1986).

the patent system provide 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.

¶137 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.¹³⁹ 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."¹⁴⁰

¶138 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 patents acquired must be available for open source licensing.¹⁴¹ 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.¹⁴² Apparently as a response to the Nortel auction, Google purchased Motorola Mobility, a mobile telecom arm of Motorola, for \$12.5 billion in August 2011.¹⁴³ The acquisition gives Google access to some 17,000 patents owned by Motorola Mobility.¹⁴⁴

¶139 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 distract young management and drive risk capital towards particular companies.¹⁴⁵ 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.

¹³⁹ See David Drummond, *When Patents Attack Android*, THE OFFICIAL GOOGLE BLOG (Aug. 4, 2011, 12:37 PM), <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, *Microsoft Wants Samsung to Pay Smartphone License: Report*, THOMSON REUTERS (July 6, 2011, 6:24 AM), <http://www.reuters.com/article/2011/07/06/us-samsung-microsoft-idUSTRE7651DB20110706>).

¹⁴⁰ *Id.*

¹⁴¹ U.S. Dep't. 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>.

¹⁴² See, e.g., Kim, *supra* note 139; Josh Halliday & Charles Arthur, *Microsoft Sues Motorola Over Android*, GUARDIAN TECH. BLOG (Oct. 5, 2010, 7:21 AM), <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, *Five Years that Changed Everything*, FIN. POST (Aug. 20, 2011, 8:59 AM), <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, *Google Buys IBM Patents*, WALL ST. J. (July 29, 2011, 12:41 PM), <http://online.wsj.com/article/SB10001424053111904800304576475663046346104.html>.

¹⁴³ See Press Release, Google to Acquire Motorola Mobility (Aug. 15, 2011), *available at* <http://investor.google.com/releases/2011/0815.html>.

¹⁴⁴ Victoria Slind-Flor, *Google, Nokia, Easyjet, 'Snakeman,' Yahoo!, UMG: Intellectual Property*, BLOOMBERG (Oct. 4, 2011, 4:01 AM), <http://www.bloomberg.com/news/2011-10-04/google-nokia-easyjet-yahoo-umg-intellectual-property.html>.

¹⁴⁵ See Ewing, *supra* note 55.

¶140 Society should be particularly concerned about privateering activity aimed at next-generation technologies that threaten to unseat an entrenched monopolist.¹⁴⁶ 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 Sergey Brin and Larry Page's little search engine long before Google became a competitive threat.

¶141 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.¹⁴⁷ 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.¹⁴⁸ Antitrust claims are even more difficult to pursue.¹⁴⁹ In general, one has a right to petition the government, even if the successful petition would have an anticompetitive impact, and the definition of government includes a petition to a court.¹⁵⁰ 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.¹⁵¹ 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.¹⁵²

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

D. Other Troubling Market Behavior

¶143 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

¹⁴⁶ See Robin C. Feldman, *Defensive Leveraging in Antitrust*, 87 GEORGETOWN L.J. 2079 (1999).

¹⁴⁷ 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*, 501 F.3d 297 (3rd Cir. 2007), is a singular case finding an antitrust violation because the licensor had blatantly offered reduced license rates for standard-essential patents to customers.

¹⁴⁸ 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 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.").

¹⁴⁹ FELDMAN, *supra* note 102, ch. 5.

¹⁵⁰ 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. *United Mine Workers v. Pennington*, 381 U.S. 657 (1965); *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961).

¹⁵¹ *Profl Real Estate Investors v. Columbia Pictures Indus.*, 508 U.S. 49, 60-61 (1993) (articulating the present standard for sham litigation).

¹⁵² FELDMAN, *supra* note 102, ch. 5.

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.

¶144 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.

¶145 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.

¶146 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.

¶147 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?

¶148 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.

E. Odd Characteristics of the Inputs Supplying the Market

¶149 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.

¶150 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.

¶151 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.¹⁵³ 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

¹⁵³ 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.

market space for bringing a new product to market from the invention by excluding others from making, using, or selling the invention.¹⁵⁴ As described above, however, aggregators make almost no effort themselves to cross the divide from patent to product.

¶152 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.¹⁵⁵ 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.

¶153 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.¹⁵⁶ 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 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.¹⁵⁷ 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.

¶155 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.

F. Odd Characteristics of the Aggregator Business

¶156 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.

¶157 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.¹⁵⁸ In other words, the aggregator’s level of return depends on how successful it is at

¹⁵⁴ We note that we are describing the role of patents in the modern economy, rather than the description necessarily promulgated in judicial decisions.

¹⁵⁵ 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).

¹⁵⁶ 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).

¹⁵⁷ We note that small trolls prototyped the process of altering the uses of patents many years ago.

¹⁵⁸ A technology license and/or know how would be a different matter.

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.¹⁵⁹

¶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.¹⁶⁰

¶159 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.¹⁶¹ When the aggregator knocks on the door, manufacturers may capitulate simply because the aggregator is the biggest, baddest guy on the block.¹⁶²

¶160 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?

G. Economic Stability

¶161 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.

¶162 One reference point could be the dot.com crash of the early 2000s, which had a negative impact on the economy as a whole.¹⁶³ 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.¹⁶⁴

¹⁵⁹ 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.

¹⁶⁰ 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.

¹⁶¹ 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.

¹⁶² A process frequently described at IP symposiums as “a value proposition.”

¹⁶³ 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.

¹⁶⁴ This term, attributed to Alan Greenspan, is now used to describe a heightened state of speculative fervor. *See* Alan Greenspan, Chairman, Fed. Reserve Bd., Remarks at the Annual Dinner and Francis Boyer Lecture of the American Enterprise Institute for Public Policy Research: The Challenge of Central Banking in a Democratic Society (Dec. 5, 1996) (transcript available

¶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.

¶164 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.

¶165 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.

¶166 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.

¶167 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.

H. "To Serve Man"¹⁶⁵

¶168 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.¹⁶⁶ Funding an aggregator at best funds the Chester Carlsons 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 aggregator had purchased his first few patents.¹⁶⁷ The aggregator would then wait for someone else to take up the ideas later—maybe as much as 26 years later—and then request

at <http://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm>.

¹⁶⁵ DAMON KNIGHT, *TO SERVE MAN* (1950). The short story was immortalized as a *Twilight Zone* episode in 1962. *To Serve Man* (*The Twilight Zone*), WIKIPEDIA, [http://en.wikipedia.org/wiki/To_Serve_Man_\(The_Twilight_Zone\)](http://en.wikipedia.org/wiki/To_Serve_Man_(The_Twilight_Zone)) (last visited Dec. 5, 2011).

¹⁶⁶ Carlson's first patent, US Patent No. 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.

¹⁶⁷ 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.

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.

¶169 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 1881 but then largely dropped with the exception of improvements for the transmission of photographs by news agencies.¹⁶⁸ 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.¹⁶⁹

¶170 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 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.

¶171 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.¹⁷⁰

¶172 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 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.

I. Ancillary Implications

¶173 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

¹⁶⁸ US Patent No. 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 FELDMAN, *supra* note 102.

¹⁶⁹ 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.

¹⁷⁰ TerraPower "was formed from an effort initiated in 2007 by Nathan Myhrvold's company Intellectual Ventures." *Who We Are*, TERRAPOWER, <http://www.terrapower.com/WhoWeAre.aspx> (last visited Nov. 15, 2011). TerraPower has raised \$35 million. Matthew L. Wald, *Developer of Novel Reactor Wins \$35 Million Infusion*, N.Y. TIMES (June 14, 2010), <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.

of the country for patent infringement.¹⁷¹ 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 action¹⁷² against Webvention, LLC, which obtained its patents by merger with Intellectual Ventures' Ferrara Ethereal LLC in Nov. 2009.¹⁷³ 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.¹⁷⁴ 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.¹⁷⁵ In a draft of our article posted on an academic works-in-progress website in September of 2011, we noted ironically that Myhrvold is a board member of lead defendant DreamWorks Animation SKG, Inc.¹⁷⁶ Although the timing may be coincidental, Dreamworks was dismissed from the lawsuit, by a motion filed jointly by plaintiffs and defendants, shortly after the article was posted.¹⁷⁷ The dismissal serves as a reminder that it is good to have friends in high places.

¶174 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.

¶175 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."¹⁷⁸ The conversation could 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.¹⁷⁹

¶176 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.¹⁸⁰ To avoid crossing the threshold,

¹⁷¹ The case names 116 defendants, although many may be corporately related to each other. *See* Mission Abstract Data LLC v. Beasley Broadcasting Group, Inc., No. 1:11-CV-00176-LPS, (D. Del. filed Mar. 1, 2011).

¹⁷² N.Y. Times Co. v. Webvention Holdings LLC, No. 1:11-CV-00634-GMS (D. Del. filed July 18, 2011).

¹⁷³ *See* USPTO ASSIGNMENTS ON THE WEB, <http://assignments.uspto.gov/assignments/?db=pat> (search "Assignee Name" for "Ferrara Ethereal LLC").

¹⁷⁴ *See* Notice Of Dismissal Without Prejudice Against Webvention, N.Y. Times Co. v. Webvention Holdings LLC, No. 1:11-CV-00634-GMS (D. Del. Aug. 17, 2011).

¹⁷⁵ Patent Harbor, LLC v. DreamWorks Animation SKG, Inc., No. 6:2011-CV-00229-LED (E.D. Tex. filed May 9, 2011) (The complaint was filed on May 9, 2011, and involves two patents formerly owned by Gisel Assets KG, LLC, a company that appears to be an Intellectual Ventures shell company).

¹⁷⁶ Robin Feldman & Thomas Ewing, *The Giants Among Us* (unpublished manuscript) (Sept. 6, 2011), *available at* <http://ssrn.com/abstract=1923449>; *see also* DreamWorks Animation SKG, Inc., Current Report (Form 8-K) (Apr. 21, 2011), *available at* <http://www.sec.gov/Archives/edgar/data/1297401/00011931251110112/d8k.htm>.

¹⁷⁷ *See* Stipulation By Patent Harbor, LLC, Paramount Home, Entertainment Inc., Dreamworks Animation, SKG, Inc., Dreamworks Animation, LLC, and Dreamworks Animation Home, Entertainment, LLC and Stipulation Of Dismissal Of Dreamworks, Animation, SKG, Inc., Dreamworks Animation, LLC, and Dreamworks Animation Home Entertainment, LLC, Patent Harbor, LLC v. DreamWorks Animation SKG, Inc., No. 6:2011-CV-00229-LED (E.D. Tex. Oct. 13, 2011).

¹⁷⁸ 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. *See* Blumberg & Sydel, *supra* note 5.

¹⁷⁹ 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.

¹⁸⁰ *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") (quoting

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,¹⁸¹ and the media scenario above is simply a variation on the theme.

¶177 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.

¶178 We note along these lines that since the draft of our article was posted,¹⁸² Intellectual Ventures purportedly has been wining and dining members of the academy. This approach may be familiar to the company, which appears to have solicited favorable commentary in the past.¹⁸³

IV. A FEW OBSERVATIONS

¶179 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. As with any market, 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

¶180 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.

¶181 The most natural FTC/DOJ regulatory structures for analyzing the activities of mass aggregators are those in the context of licensing and acquisition activity.¹⁸⁴ 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 property is not presumed to create market power, and that intellectual property licensing is generally procompetitive.¹⁸⁵ 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.

¶182 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

Maryland Casualty Co. v. Pacific Coal & Oil Co., 312 U.S. 270, 273 (1941)) .

¹⁸¹ See FELDMAN, *supra* note 102, ch. 2. Intellectual Ventures use of the phrase “invention gaps” provides an excellent example of such communications.

¹⁸² See Feldman, *supra* note 177.

¹⁸³ See Complaint and Jury Demand at 6, Choate v. Intellectual Ventures, LLC, No 1:11-CV-00528-ckk (D.C. Mar. 14, 2011) (alleging that plaintiff was hired by Intellectual Ventures to generate opposition to changes in patent law by disputing the theory that the patent system is in crisis due to frivolous litigation; activities included writing article and monograph).

¹⁸⁴ Three agency reports are particularly useful for understanding the current agency approach. U.S. FED. TRADE COMM’N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (2011), *available at* www.ftc.gov/os/2011/03/110307patentreport.pdf [hereinafter EVOLVING MARKETPLACE]; U.S. DEPT. OF JUSTICE AND FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES (2010), *available at* www.ftc.gov/os/2010/08/100819hmg.pdf [hereinafter MERGER GUIDELINES]; and U.S. DEPT. OF JUSTICE AND FED. TRADE COMM’N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY (1995), *available at* <http://www.justice.gov/atr/public/guidelines/0558.htm> [hereinafter ANTITRUST LICENSING].

¹⁸⁵ See ANTITRUST LICENSING, *supra* note 184, at 2.

effects.¹⁸⁶ Technology markets consist of the intellectual property that is licensed and its close substitutes.

¶183 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, the innovation market, which is defined as the research and development directed to particular new or improved goods or processes.¹⁸⁷

¶184 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 grantbacks. Grantbacks are licensing arrangements in which the license holder agrees to give the patent holder rights to any improvements on the invention.

¶185 In the case of pooling, for example, the guidelines note that exclusion from pooling arrangements can be anticompetitive if a) excluded firms cannot effectively compete in the relevant market and b) pool participants collectively poses market power in the relevant market.¹⁸⁸ Similarly, grantbacks may be found anticompetitive if they substantially reduce the licensee's incentives to engage in research and development.¹⁸⁹ One should note, however, that these concerns are analyzed against a backdrop of the Agencies' perspective that licensing is generally procompetitive.

¶186 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.¹⁹⁰ 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.¹⁹¹

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.

¶187 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.

¶188 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.¹⁹² Considering only product, technology, and innovation markets could miss a fair amount of worrisome activity.

¶189 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.

¹⁸⁶ *Id.* at 8.

¹⁸⁷ *Id.* at 10-11.

¹⁸⁸ *Id.* at 28.

¹⁸⁹ *Id.* at 30.

¹⁹⁰ See EVOLVING MARKETPLACE, *supra* note 184, at 8.

¹⁹¹ *Id.* at 9.

¹⁹² See the discussion above about Intellectual Ventures and the Ocean Tomo patent auctions, for example.

¶190 Moreover, the Agencies may need to reconsider the general principle that licensing is procompetitive. 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 expansive activity that is separated so far from the activity of introducing new technologies.

¶191 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.¹⁹³

¶192 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.¹⁹⁴ Such transactions may have the effect of removing a participant from the market, in the same manner as a traditional merger would.¹⁹⁵

¶193 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.

¶194 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 that 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.

¶195 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

¶196 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.

¶197 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

¹⁹³ For a description of notice and filing requirements, see *Premiermer Introductory Guides*, U.S. FED. TRADE COMM'N (Oct. 24, 2011), <http://www.ftc.gov/bc/hsr/introguides/introguides.shtm>.

¹⁹⁴ ANTITRUST LICENSING, *supra* note 184, at 31.

¹⁹⁵ Such transactions may be assessed under § 7 of the Clayton Act, §§ 1-2 of the Sherman Act, and § 5 of the FTC Act.

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.

¶198 Consider Searete LLC, a fairly well-known Intellectual Ventures shell company¹⁹⁶ that exemplifies the complicated ownership and management structures employed by mass aggregators.¹⁹⁷ 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.¹⁹⁸ Searete's official manager in Nevada is "Nevada Licensing Manager, LLC," which is a Nevada corporation.¹⁹⁹ Nevada Licensing Manager's own manager is "Nevada Assets, LLC," which is a Delaware company.²⁰⁰ 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 little more than the ownership of shares, effectively rendering almost no one responsible for its actions.

¶199 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 are often elaborate, and state corporation laws complicate the process of finding out who actually controls any given limited liability company.²⁰¹

¶200 The ownership and control picture may not become much clearer even after litigation has begun, 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.²⁰² The rule's purpose is not to discover litigation motives and corporate activities, but to assist judges in disqualifying themselves due to conflicts of interest.²⁰³ 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.

¶201 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

¹⁹⁶ 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>.

¹⁹⁷ Intellectual Ventures parks many of its "inventioneering" patent applications in Searete. *Id.*

¹⁹⁸ Delaware Corporations file 3776428 shows that Searete LLC was formed on March 12, 2004. DELAWARE DIVISION OF CORPORATIONS, <https://delecorp.delaware.gov> (search "file number" for "3776428"). Nevada Corporations records show that Searete LLC, Nevada Corporate Id NV20041267664 was registered in Nevada on Nov. 15, 2004. NEVADA BUSINESS ENTITY SEARCH, <http://nvsos.gov/sosentitysearch/CorpSearch.aspx> (search "NV Business ID" for "NV20041267664").

¹⁹⁹ NEVADA BUSINESS ENTITY SEARCH, <http://nvsos.gov/sosentitysearch/CorpSearch.aspx> (search "NV Business ID" for "NV20041267664"). Nevada Corporation records show that Nevada Licensing Manager, Nevada Corporate ID NV20041268216 was created on Nov. 15, 2004. *Id.* (search "NV Business ID" for "NV20041267664").

²⁰⁰ Delaware Corporations file 3881571 shows that Nevada Assets, LLC was also created on Nov. 15, 2004. DELAWARE DIVISION OF CORPORATIONS, <https://delecorp.delaware.gov> (search "file number" for "3881571").

²⁰¹ 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.

²⁰² FED. R. CIV. P. 7(a)(1).

²⁰³ See GLEN WEISSENBERGER, FEDERAL CIVIL PROCEDURE LITIGATION MANUAL 7.1.1 (Matthew Bender, 2010).

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.²⁰⁴

¶202 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.²⁰⁵

¶203 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.²⁰⁶

¶204 For example, in *Oasis Research, LLC v. Adrive, et al.*²⁰⁷, 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.²⁰⁸ 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.²⁰⁹ 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.²¹⁰

¶205 Similarly, in *Xilinx v. Invention Investment Fund I LP*,²¹¹ 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.²¹² Xilinx and Intellectual Ventures had been in licensing discussions prior to the filing of the lawsuit;²¹³ Xilinx is also apparently an investor in Intellectual Ventures.²¹⁴

¶206 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

²⁰⁴ C.D. Cal. R. 7.1-1, available at <http://www.cacd.uscourts.gov> (click “Local Rules” link, then search for “7.1” and select “F.R.Civ.P. 7.1 Disclosure Statement”).

²⁰⁵ N.D. Cal. R. 3-16, available at <http://www.cand.uscourts.gov/filelibrary/3/Civ6-11.pdf> (referring to definitions from 28 U.S.C. § 455).

²⁰⁶ 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*, No. 11-CV-0671 (N.D. Cal. May 16, 2011).

²⁰⁷ *Oasis Research, LLC v. Adrive*, No. 4:10-CV-00435-MHS ALM (E.D. Tex. filed Aug. 30, 2010). The case is still pending.

²⁰⁸ Rule 7.1 Disclosure Statement, *Oasis Research, LLC v. Adrive*, No. 4:10-CV-00435-MHS-ALM (E.D. Tex. Aug. 31, 2010).

²⁰⁹ 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*, No. 4:10-CV-00435-MHS-ALM (E.D. Tex. Mar. 10, 2010).

²¹⁰ See Blumberg & Sydel, *supra* note 5.

²¹¹ *Xilinx v. Invention Investment Fund I LP*, No. 11-CV-0671 (N.D. Cal. filed Feb. 14, 2011).

²¹² *Intellectual Ventures I LLC v. Altera Corp.*, No. 1:10-CV-01065-LPS (D. Del. filed Dec. 8, 2010).

²¹³ See Intellectual Ventures Motion to Dismiss at 6, 9, *Xilinx v. Invention Investment Fund I LP*, No. 11-CV-0671 (N.D. Cal. filed Apr. 11, 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”).

²¹⁴ 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. 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*, No. 11-CV-0671 (N.D. Cal. May 16, 2011).

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.²¹⁵ 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.²¹⁶

¶207 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.²¹⁷ The legal owners for these patents include some seven other Intellectual Ventures shell companies,²¹⁸ and the California judge has transferred this portion of the lawsuit to Delaware.²¹⁹ 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.

¶208 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.

¶209 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.²²⁰

¶210 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

²¹⁵ Judge Koh recused herself from the case on April 28, 2011. Order of Recusal, *Xilinx v. Invention Investment Fund I LP*, No. 11-CV-00671-LHK (ND Cal. Apr. 28, 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.

²¹⁶ 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*, No. 11-CV-0671 (N.D. Cal. May 16, 2011).

²¹⁷ See Order Re: Motions To Enjoin, Dismiss And/Or Transfer, *Xilinx v. Invention Investment Fund I LP*, No. 11-CV-0671 (N.D. Cal. July 27, 2011).

²¹⁸ Defendants' Motion To Dismiss Xilinx's Complaint For Declaratory Judgment, *Xilinx v. Invention Investment Fund I LP*, No. 11-CV-0671 (N.D. Cal. Apr. 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).

²¹⁹ See *supra* note 211.

²²⁰ See, e.g., *Communist Party v. 522 Valencia, Inc.*, 35 Cal. App. 4th 980, 993 (1995).

concerns the presence or absence of distinct legal entities.²²¹ 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 reluctant to pierce the corporate veil in most circumstances,²²² and the carefully crafted legal structures will make it particularly difficult to disregard the corporate form.

¶211 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.²²³ 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

¶212 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.

¶213 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 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

¶214 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.

¶215 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.

¶216 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,

²²¹ See *Nelson v. Adams USA, Inc.*, 529 U.S. 460, 470-71 (2000).

²²² See, e.g., *Sonora Diamond Corp. v. Superior Ct.*, 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).

²²³ One might also try to establish that third-party privateers were acting as agents on behalf of the mass aggregator. See RESTATEMENT (THIRD) OF AGENCY § 1 (2006) (focusing on whether the purported agent acts on the principal's behalf and subject to the principal's control).

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.

¶217 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 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 Interest		Financial Interest		Entity related to the Allen & 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 Interest		Financial Interest	A Detroit-based charity that 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

APPENDIX C

A. Introduction

¶1 This appendix summarizes the methodology employed in uncovering Intellectual Ventures patent holdings.¹ Our methodology relies on two broad categories of similarities among the 1,276 Intellectual Ventures shells that we have identified. We will term the first category “corporate similarities” and the second category “patent prosecution similarities.” These two sets of similarities are reasonably independent of each other and thus provide some confidence that a suspected shell company has a relationship with Intellectual Ventures.

¶2 We first reviewed the open literature about Intellectual Ventures. Many of these articles identified a few of Intellectual Ventures’ shell companies.² Other articles identified companies that had purportedly sold or licensed patents to Intellectual Ventures. We next reviewed corporate records for those publicly identified Intellectual Ventures shell companies. After observing similarities in the structure of these shell companies, we expanded our investigation to look for other companies sharing the same characteristics.

¶3 Using this initial list of shell companies, we searched the US Patent & Trademark Office’s assignment database to find which companies were listed as the assignees or licensees of patents and/or published applications. Where possible, we attempted to find public information about the transactions involved. We performed this process iteratively several times in order to expand the list of shell companies. Thus, the first phase of our research comprised looking for “corporate similarities” among suspected shell companies.

¶4 The second phase of our research concerned reviewing “patent prosecution similarities.” In this phase, we reviewed the patent portfolios of the shell companies to look for active cases—pending applications, continuations, and reissue applications—under the assumption that the new owner would have likely filed a new power of attorney in order to take over prosecution of the case from the previous owner.³ We also reviewed assignment data for the patents where available. We assumed that the information gleaned from these information sources would provide independent support for the “corporate similarities” uncovered in the first phase and in many cases actually include the name of an Intellectual Ventures executive, employee, or agent. We then integrated the results of our findings, conducting further research into Intellectual Ventures’ corporate organization and its apparent business plans.

¶5 Finally, we prepared integrated lists of the patents and published applications for the shell companies that we found.⁴ This phase also included determining the first International Patent Classification (IPC) class for the patents and applications since the Intellectual Ventures portfolio need not necessarily have a single specific technology focus. If this portfolio contained fewer than 100 patents, then it might be sufficient to simply list the patents by number and title. However, with 11,000+ patents and pending applications spread across a variety of technologies, understanding this portfolio suggests that the patents also be organized by technical subject matter.

¹ The methodology discussed here describes techniques that enabled author Tom Ewing to create an initial survey of Intellectual Ventures’ holdings in 2007. The data have been expanded and updated with the most recent version in May 2011. On the model of Lex Machina, which was originally a project of Stanford Law School, the database is available for a cost to commercial entities from author Tom Ewing. Certain use of the database is available on different terms to academics.

² See, e.g., Victoria Slind-Flor, *IV Moves From Myth To Reality*, 32 *Intellectual Asset Management* August/September 2006 (the article identifies 48 Intellectual Ventures shell companies).

³ See, e.g., 37 CFR 1.32 Power of Attorney, available at http://www.uspto.gov/web/offices/pac/mpep/consolidated_rules.pdf and Manual of Patent Examining Procedure Sec. 402; available online at http://www.uspto.gov/web/offices/pac/mpep/documents/0400_402.htm#sect402.

⁴ We provide detailed listings of patents in our full Intellectual Ventures report.

¶6 The documents found during this investigation provide a rich source of information that further link the apparent shell companies to Intellectual Ventures and suggest avenues for future research. After providing an overview of our methodology, we will discuss how our methodology was employed to discover two specific Intellectual Ventures shell companies. These shell companies are Ben Franklin Patent Holding, LLC and Northstar Acquisitions, LLC. Ben Franklin Patent Holding, LLC is a fairly well-known Intellectual Ventures shell company that has been mentioned in several articles about Intellectual Ventures.⁵ Ben Franklin is also a fairly easy shell company to trace to Intellectual Ventures because its portfolio came from another Intellectual Ventures shell named Intellectual Ventures Patent Holding I, LLC in a transaction conducted on Nov. 18, 2003.⁶ Northstar Acquisitions, LLC is another company that we suspected was an Intellectual Ventures shell based, among other things, on certain similarities that Northstar shares with Ben Franklin. We eventually found documents signed by an Intellectual Venture employee/agent who had also signed documents for Ben Franklin. To our knowledge, Northstar had not been identified as an Intellectual Ventures shell company prior to our original 2007 report.

B. Corporate Similarities

¶7 We first studied Intellectual Ventures' apparent corporate structure, focusing primarily on the shell companies. We next studied the available corporate information about these publicly identified shell companies in order to find characteristics or features that might reveal other shell companies. We noticed that all of the publicly identified shell companies were of the "limited liability company," or "LLC" form. We further noticed that the publicly identified shell companies were generally registered in either Delaware or Nevada.

¶8 We also noted that the sole addresses for the Delaware companies were:

- 2711 Centerville Road Suite 400, Wilmington, DE 19808,
- 1209 Orange Street, Wilmington, DE 19801, or
- 160 Greentree Drive Suite 101, Dover, DE 19904

These addresses correspond to addresses for the three largest registered agency firms in the US. The Centerville Road address is the address for the Corporation Service Company (CSC). The Orange Street address is the address for the Corporation Trust Company (CTC), and the Greentree Drive address is the address for National Registered Agents, Inc. (NRA).⁷

¶9 Similarly, the Nevada registered companies have addresses that correspond to the Nevada address for these same registered agency firms. For example, many companies have the CSC's Centerville Road address listed for Delaware and CSC's 2215-B Renaissance Drive, Suite 5, Las Vegas, NV 89119 address as their registered Nevada address.⁸

¶10 The organization of the Nevada registered companies allowed us to find additional shell companies. For example, the listed manager in Nevada for the three publicly identified Intellectual Ventures shells Poulsen Transmitter LLC, Smeaton Pump LLC, and Twain Typesetting LLC is "Gigaloo LLC."⁹ We were curious to see if Gigaloo LLC was the manager for any other companies

⁵ Sind-Flor, *supra* note 2.

⁶ See, e.g., Reel/Frame: 014770/0486, US Patent Office Assignment Database for US Patent No. 5675811, recording the change of name from Intellectual Ventures Patent Holding I, L.L.C. to Ben Franklin Patent Holding LLC, available at <http://assignments.uspto.gov/assignments/q?db=pat&reel=014770&frame=0486> (last visited Nov. 30, 2011.).

⁷ See, Delaware Authorized Searchers, Delaware Secretary of State, which lists all three companies at these addresses; available at <http://corp.delaware.gov/ucauthsrch.shtml> (last visited Nov. 30, 2011).

⁸ See, e.g., LVL Patent Group, LLC v. DirectTV, Inc., Echostar Technologies, L.L.C.; Echostar Corporation and Dish Network L.L.C., 1:99-mc-09999 (D. Del. 2011) ("EchoStar Corp. has appointed CSC Services of Nevada, Inc., 2215-B Renaissance Drive, Las Vegas, Nevada 89118, as its agent for service of process."), available at: <http://morrisjames.files.wordpress.com/2011/09/lvl-patent-group-llc-v-directv-inc-et-al.pdf>.

⁹ On the Nevada Secretary of State business entity website, select "officer" and enter "Gigaloo" in the "last name" field. The search will produce these 10 companies managed by Gigaloo, LLC. We first performed this search on May 30, 2007 and most recently performed it on Nov. 30, 2011; website available at <http://nvsos.gov/sosentitysearch/corpssearch.aspx>.

in Nevada. Our inquiry revealed that seven other companies—Ayscough Visuals LLC, Fahrenheit Thermoscope LLC, Hollerith Statistics LLC, Maiman Laser Systems LLC, McGill Fastenings LLC, Newcomen Engine LLC, and Ochoa Optics LLC—were also managed by Gigaloo. We observed that these seven companies also shared the characteristics that drew us to the first three shell companies.

¶11 As a backup test, we spot checked the USPTO assignment database and discovered that all 10 Gigaloo-managed companies, except for McGill Fastenings, were assigned patents in transactions recorded from 2004-2007¹⁰. As a further test, we spot-checked this list to see if any of these companies seemed to have a presence on the web that indicated actual commercial activity. For example, could we find any mention of Hollerith Statistics LLC as a going entity with an actual office and an actual staff? For the companies that we spot-checked, we found nothing.

¶12 This process led us to notice additional commonalities among these companies. For example, we noticed that many of Intellectual Ventures' early shell companies have two-part names that are either derived from the work of a famous artist or scientist (*e.g.*, Steinbeck Cannery LLC), or contain a color (*e.g.*, Purple Mountain Server), or a geographical location (*e.g.*, Baldwyn Brices Cross Roads¹¹). We later observed that some of the shells seemed to have been named after minerals and other chemical compositions.

¶13 We further observed that many of the shell companies were also created in both Delaware and Nevada on similar, if not the same, dates. For example, of the 51 management companies, 34 were incorporated in Delaware on Sept. 7, 2004, and all the companies managed by Algorithym LLC were created on March 17, 2005.¹² We also noticed that some shell companies seemed to have been formed in Nevada only and have no Delaware counterpart. We have similarly observed that other shell companies have been formed in Delaware only with no Nevada counterpart.

¶14 Our list of corporate characteristics for the Nevada companies eventually included: 1) LLC corporate form, 2) a Nevada corporation, or a Delaware corporation also registered in Nevada, 3) identical addresses for registered agents in Delaware and Nevada, 4) similar dates of corporate formation, 5) recipient of patents assigned/licensed between 2000-2007, 6) no corporate existence prior to Intellectual Ventures' formation in 2000, 7) no recorded patents prior to Intellectual Ventures' formation in 2000, 8) management by a company having a one-word name that also has the LLC corporate form, and 9) approximately 10 companies under management by the LLC management company where none of the 10 companies seemed to have an independent commercial existence.

C. Patent Prosecution Similarities

¶15 A patent prosecution file history may provide information about who owns a patent and/or the company ostensibly prosecuting the patent. When a patent or pending application is purchased, the new owner will not only want to register his ownership of the patent with the USPTO, he will also want to assume control over the prosecution of any pending patent applications.¹³ In order to assume control, the patent owner must file a new power of attorney with the USPTO and must also

¹⁰ We conducted this research in preparation for the first edition of our report in 2007. Searches for later editions did not terminate in 2007. We note that McGill Fastenings had no patents recorded against its name in 2007 and in 2011 still has no patents recorded against its name, according to the USPTO assignment database. This does not mean that the company holds no patent rights.

¹¹ We noticed that the names of some Intellectual Ventures shells, such as Baldwyn Brices Cross Roads, curiously seemed to be found in a sample template available with the Shoebox program for organizing photographs by their content. This may be mere coincidence or it might possibly provide some support for the rumor that the names of Intellectual Ventures shells are selected by a computer. One Shoebox template can be found at: http://www.kavasoft.com/Shoebox/categories/examples/Things/National_Parks.html.

¹² Algorithym LLC manages Reverb Communications LLC, Teledata Sound LLC, Home Systems LLC, Portable Management LLC, Null Networks LLC, Meyer Cordless LLC, Mobile Lines LLC, Discobolus Management LLC, Logic Data Funds LLC, And Redirection LLC. This search can be replicated by entering "Algorithym" in the "first name" field and "LLC" in the last name field for "officer" on the Nevada Secretary of State's website. If one then checks the history for each of the companies, one sees that they were all registered in Nevada on March 17, 2005.

¹³ Supra note 3.

typically file a statement that shows a chain of title. These documents are typically signed by a person working for, or authorized by the new owner.¹⁴ Thus, these documents provide an opportunity to find the name of a person associated with the patent-owning company.

¶16 For example, Creative Mines LLC is a company that had not been identified as an Intellectual Ventures shell prior to our 2007 report. Using the corporate similarities methodology discussed above, we found Creative Mines by first finding Searete LLC, which is a publicly identified Intellectual Ventures shell company. We next located the manager for Searete in Nevada, which is Nevada Licensing Manager LLC.¹⁵ We next searched for other companies managed by Nevada Licensing Manager, which led us to, led us to consider Creative Mines. When we searched for agreements involving Creative Mines, we found the following agreement¹⁶ which not only identifies Creative Mines but also ties the company to Intellectual Ventures:

ASSIGNMENT

WHEREAS, Applied Minds, Inc. (hereinafter referred to as ASSIGNOR), having a post office address of 1209 Grand Central Avenue, Glendale, CA 91201, is the assigned owner of an invention entitled "METHOD AND SEQUENCES FOR DETERMINATE NUCLEIC ACID HYBRIDIZATION," as described and claimed in the specification for which an application for United States letters patent was filed on March 28, 2001, and assigned Application No. 09/821,694; and

WHEREAS, Creative Mines LLC (hereinafter referred to as ASSIGNEE), a Delaware limited liability company qualified to do business in Nevada as a foreign limited liability company, having a place of business at 1756 – 114th Ave. S.E., Suite 110, Bellevue, WA 98004, is desirous of acquiring the entire right, title and interest in and to the invention and in and to any letters patent that may be granted therefor in the United States and in any and all foreign countries;

¶17 The 1756—114th Ave. SE, Ste. 110, Bellevue, Washington address has been Intellectual Ventures' address.¹⁷ This address may be found in numerous Intellectual Ventures documents, including the self-reported employer address of Intellectual Ventures provided by co-founder Greg Gorder on the Washington State Bar Association website, which is provided below. Thus, a company found only by the methodology laid out above was shown to be linked to Intellectual Ventures by reviewing the patent file history for a patent owned by the shell company.

¶18 The power of attorney document for the Creative Mines patent applications was signed by Greg Gorder who also placed his personal assistant's phone number at Intellectual Ventures on the power of attorney document.¹⁸ This phone number has Intellectual Ventures' main exchange but is slightly different from the number that Gorder provided to the Washington State Bar Association.¹⁹

¹⁴ *Id.*


¹⁵ See notes 196-199 in the main article.

¹⁶ The agreement may be found on the USPTO's PAIR database under patent application 09/821,694 (now US Patent 6,949,340; select the "Image File Wrapper" tab and then select the PDF for the document "Oath or Declaration" filed on June 28, 2005. The selection above is found on page 2. The PAIR website may be accessed at <http://portal.uspto.gov/external/portal/pair>.

¹⁷ See, e.g., Matt Rainey, "Comments on NPRM re Reexam rules," USPTO website, available at: <http://www.uspto.gov/web/offices/pac/dapp/opla/comments/ab77/iv.pdf>.

¹⁸ *Supra* note 16 at 1.

¹⁹ See, Greg Gorder entry on the Washington State Bar Association webpage; search originally conducted June 14, 2007; search repeated Nov. 30, 2011 with same results but for updated address for Intellectual Ventures; WSBA lawyer directory available at: http://www.mywsba.org/default.aspx?tabid=178&RedirectTabId=177&Usr_ID=15288.



PTO/SB/96 (09-04)
Approved for use through 07/31/2006. GMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Patent and Trademark Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Creative Mines LLC

Application No./Patent No.: 09/821,694 Filed/Issue Date: March 28, 2001

Entitled:

Creative Mines LLC, a Delaware Limited Liability Company
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest.
The extent (by percentage) of its ownership interest is _____ %

in the patent application/patent identified above by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

OR

B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: William Daniel Hillis To: Applied Minds, Inc.
The document was recorded in the United States Patent and Trademark Office at Reel 011907, Frame 0227, or for which a copy thereof is attached.

2. From: Applied Minds, Inc. To: Creative Mines LLC
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☒ Copies of assignments or other documents in the chain of title are attached.
[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature

Greg Gorder
Printed or Typed Name

Managing Director
Title

Date

6/28/2005
Date

Telephone Number

425-467-2315
Telephone Number

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Washington State Bar Association

Thursday, June 14, 2007

Public Member Sponsor Help

WSBA Lawyer Profile

Member Name	Gregory Gorder	WSBA Bar #	15288
Law Firm	Intellectual Ventures	Admit Date	11/4/1985
Address	1756 114th Ave SE Ste 110 Bellevue, WA 98004-6931	Status	Active
		Phone	(425) 467-2310
		Fax	(425) 467-2350
		Email	

Only active members of the Washington State Bar Association, and others as authorized by law, may practice law in Washington.

The discipline search function may or may not reveal all disciplinary action relating to a lawyer. The discipline information accessed is a summary and not the official decision in the case. For more complete information, call 206-727-8207 and press 7.

¶19 Gorder also signed the power of attorney document for the Point Reyes National Liquidator LLC.²⁰ On this document, he used Intellectual Ventures' main phone number.

FEB 23 2004
U.S. PATENT & TRADEMARK OFFICE

PTO/3526 (26-23)
Approved for use through 07/31/2005. OMB 0651-0031
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b) Docket No. 2222.0110005

Applicant/Patent Owner: Daniel S. PURCELL

Application No./Patent No.: 10/164,979 Filed/Issue Date: February 11, 2003

Entitled: Automated And Independently Accessible Inventory Information Exchange System

Point Reyes National Liquidator Buyer LLC, a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or

2. ☐ an assignee of less than the entire right, title and interest.
The extent (by percentage) of its ownership interest is _____ % in the patent application patent identified above by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: _____ To: _____
The document was recorded in the Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____
The document was recorded in the Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____
The document was recorded in the Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☐ Copies of assignments or other documents in the chain of title are attached.
[NOTE: A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the PTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

02/23/04
Date
725-467-2300
Telephone number

G. Gorder
Typed or printed name
[Signature]
Signature
Managing Director
Title

RECEIVED
MAR
GPO

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you are required to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

D. Two Shell Companies—Ben Franklin and Northstar Acquisitions

¶20 Both Ben Franklin and Northstar Acquisitions are Delaware corporations.²¹ Both companies were registered as foreign corporations in Nevada on Oct. 1, 2004.²² The registered address for both companies in Delaware is 2711 Centerville Road Suite 400, Wilmington, DE 19808. The registered address for both companies in Nevada is 2215-B Renaissance Drive, Suite 5, Las Vegas, NV 89119.

²⁰ Power of Attorney for US Patent Application 10/364,979, filed Feb. 23, 2004, and signed by Greg Gorder; document available via USPTO PAIR database at <http://portal.uspto.gov/external/portal/pair>.

²¹ Ben Franklin was formed in Delaware on April 22, 2003 and Northstar Acquisition was formed on March 27, 2003, according to the Delaware Secretary of State; available at <https://delecorp.delaware.gov/tin/GINameSearch.jsp>, enter "Ben Franklin Patent Holding" for the first search and "Northstar Acquisition" for the second search.

²² See, the Nevada Secretary of State's business entity website, available at <https://delecorp.delaware.gov/tin/controller>, for the first search, enter "Ben Franklin Patent Holding" in the "entity name" field and for the second search, enter "Northstar Acquisitions" in the "entity name" field.

Both companies have also used addresses in Los Altos, California, including the same address in Los Altos, which Intellectual Ventures co-founder Peter Detkin gave to the California Bar Association, the New York Bar Association, and the US Patent & Trademark Office.²³

¶21 Ben Franklin and Northstar share similarities in patent prosecution. Documents filed in at least one pending application owned by Ben Franklin identify Peter Detkin, an Intellectual Ventures co-founder, as the managing director of Ben Franklin. Other documents filed with the US Patent & Trademark Office for Ben Franklin have been signed by attorney Julia Ceffalo. Washington State Bar Association records indicate that Ms. Ceffalo is an attorney working for the Invention Law Group, PLLC, which seems to be an Intellectual Ventures-created law firm.²⁴ As shown below, we have found powers of attorney signed by Ms. Ceffalo for both Ben Franklin and Northstar Acquisitions, linking Northstar Acquisition to Ben Franklin and thus to Intellectual Ventures itself.²⁵ We have repeated this process with thousands of suspected Intellectual Ventures shell companies.

¶22 Ben Franklin obtained a portfolio of 24 patents and 12 published applications from Intellectual Ventures Patent Holding I, LLC in a transaction which recognized that Intellectual Ventures Patent Holding I's name had been changed to Ben Franklin. Intellectual Ventures Patent Holding I obtained these patents from General Magic, Inc., a company that developed a pioneering PDA-like device in the early 1990s but closed its doors in 2002.²⁶ Intellectual Ventures Patent Holding executed its agreement with General Magic, which was in voluntary bankruptcy, on April 22, 2003.²⁷ This agreement was recorded in the US Patent and Trademark Office on July 25, 2003.²⁸

¶23 The documents filed with the USPTO on Ben Franklin's behalf bear the signatures of Intellectual Ventures co-founders Peter Detkin and Greg Gorder. The documents also link Intellectual Ventures with a Los Altos address that is also found in at least 70 other patent files associated with some of the early Intellectual Ventures shell companies.

¶24 As shown below, Gorder signed the original agreement with General Magic to obtain the patents that eventually became Ben Franklin's portfolio²⁹:

²³ We learned from Peter Detkin shortly after publication of our first edition that this address was his residential address, and while this address has been available on three public websites, we subsequently removed the address at Mr. Detkin's request.

²⁴ However, Intellectual Ventures' own automated telephone directory has indicated that Ms. Ceffalo is an Intellectual Ventures employee, based on a call placed to Intellectual Ventures on June 15, 2007.

²⁵ We have found Ms. Ceffalo's name on power of attorney documents filed with the USPTO for 139 different Intellectual Ventures shell companies.

²⁶ See, e.g., Wikipedia, "General Magic," available at: http://en.wikipedia.org/wiki/General_Magic.

²⁷ See, file history for US Patent Application 09/712,712, now US Patent No. 6,839,733, "Power of Attorney" filed on April 28, 2004, pages 7-12 which provide the "Asset Purchase Agreement" (see "recitals"), file history available at <http://portal.uspto.gov/external/portal/pair>.

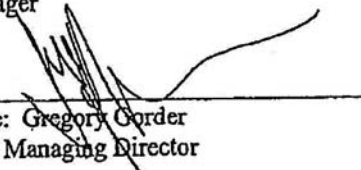
²⁸ USPTO Assignment Database, Reel/frame "014313/0813", available at <http://assignments.uspto.gov/assignments/q?db=pat&reel=014313&frame=0813>.

²⁹ See, file history for US Patent Application 09/712,712, now US Patent No. 6,839,733, "Power of Attorney" filed on April 28, 2004, page 8, file history available at <http://portal.uspto.gov/external/portal/pair>.

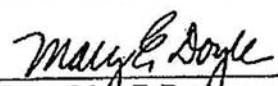
EXECUTION COPY

IN WITNESS WHEREOF, Seller and Purchaser have caused this Agreement to be signed by their respective officers thereunto duly authorized, all as of the date first written above.

INTELLECTUAL VENTURES PATENT
HOLDING I, L.L.C.; a Delaware limited liability
company
By: Intellectual Ventures Management, L.L.C., its
sole manager

By: 
Name: Gregory Gorder
Title: Managing Director

GENERAL MAGIC, INC., a Delaware corporation

By: 
Name: Mary E. Doyle
Title: Responsible Individual

¶25 Even though one can find an assignment of the patents from Intellectual Ventures Patent Holding I to Ben Franklin in the USPTO's assignment database, the two companies are actually the same company³⁰. In Nov. 2003, Gorder filed this amendment with the Delaware Division of Corporations changing the Intellectual Ventures Patent Holding's name to Ben Franklin:³¹

³⁰ The USPTO database describes the transaction as a "change of name."

³¹ See, file history for US Patent Application 09/934,121, "Oath or Declaration" filed on May 20, 2004, page 8, file history available at <http://portal.uspto.gov/external/portal/pair>. (This document also exposes a management shell company called Acquisition Management LLC since Gorder signed as an officer of this company.)

State of Delaware
 Secretary of State
 Division of Corporations
 Delivered 11:29 AM 11/24/2003
 FILED 10:41 AM 11/24/2003
 SRV 030753952 - 3649814 FILE

**CERTIFICATE OF AMENDMENT
 OF
 INTELLECTUAL VENTURES PATENT HOLDING I, L.L.C.**

The undersigned, being duly authorized to execute and file this Certificate of Amendment, does hereby certify as follows:


1. The name of the limited liability company is Intellectual Ventures Patent Holding I, L.L.C.

2. Paragraph 1 of the Certificate of Formation is amended in its entirety to read as follow:

"1. *Name.* The name of the limited liability company is Ben Franklin Patent Holding LLC."

IN WITNESS WHEREOF, the undersigned has duly executed this Certificate of Amendment on the 18th day of November, 2003.

Acquisition Management LLC, Manager

By: 
 Gregory Gorder, Managing Director

¶26 Interestingly, both Gorder and Detkin have served as “managing directors” of Ben Franklin in a two-month time period, according to power of attorney documents filed in Intellectual Ventures cases. The oldest document shows Detkin³² as managing director and the newer document shows Gorder as managing director³³:

³² See, file history for US Patent Application 09/712,712, now US Patent No. 6,839,733, “Power of Attorney” filed on April 28, 2004, page 2, file history available at <http://portal.uspto.gov/external/portal/pair>.

³³ *Supra* note 29 at “Power of Attorney” filed on May 20, 2004.

- 2 -

BYRNE *et al.*
Appl. No. 09/934,121

Registration No. 37,575; Judith U. Kim, Esq., Registration No. 40,679; Timothy J. Shea, Jr., Esq., Registration No. 41,306; Patrick E. Garrett, Esq., Registration No. 39,987; with full power of substitution, association, and revocation, to prosecute said application and to transact all business in the United States Patent and Trademark Office connected therewith.

For the purpose of PAIR, the Customer Number is 26111.

The undersigned hereby grants said attorneys the power to insert on this Power of Attorney any further identification that may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

Send all correspondence to:

Customer Number 26111
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
1100 New York Avenue, N.W.
Washington, D.C. 20005-3934.

Direct telephone calls to (202) 371-2600.

FOR: BEN FRANKLIN PATENT HOLDING LLC

SIGNATURE: _____

BY: _____

TITLE: _____

DATE: _____

- 2 -

Lange *et al.*
Appl. No. 09/712,712

33,876; Robert C. Millonig, Esq., Registration No. 34,395; Michael V. Messinger, Esq., Registration No. 37,575; Judith U. Kim, Esq., Registration No. 40,679; Timothy J. Shea, Jr., Esq., Registration No. 41,306; Patrick B. Garrett, Esq., Registration No. 39,987; with full power of substitution, association, and revocation, to prosecute said application and to transact all business in the United States Patent and Trademark Office connected therewith.

For the purpose of PAIR, the Customer Number is 26111.

The undersigned hereby grants said attorneys the power to insert on this Power of Attorney any further identification that may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

Send all correspondence to:

Customer Number 26111
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
1100 New York Avenue, N.W.
Washington, D.C. 20005-3934.

Direct telephone calls to (202) 371-2600.

FOR: Ben Franklin Patent Holding L.L.C.

SIGNATURE: 

BY: PETER DETKIN

TITLE: MANAGING DIRECTOR

DATE: 26 APRIL 2004

¶27

More importantly, an even-later-filed power of attorney document by Intellectual Ventures' attorney Julia Ceffalo associates the 171 Main Street, Los Altos address with Ben Franklin, and thus with Intellectual Ventures itself. As noted above, this address is found in at least 70 other USPTO case files for the shell companies discussed in this report.³⁴

³⁴ See, patent file history for US Application 11/314,002, now US Patent 7,266,499, power of attorney filed on Feb. 16, 2006, available at <http://portal.uspto.gov/external/portal/pair> in the "image file wrapper" tab under "power of attorney" for "02-16-2006."

PTO/SB/80 (12-03)
Approved for use through 11/30/2005, OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby appoint:

☒ Practitioners associated with the Customer Number: 26111

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

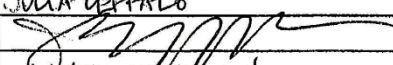
as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Assignee Name and Address:

Ben Franklin Patent Holding LLC
171 Main Street, #271
Los Altos, CA 94022

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/86 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record
The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Name	JULIA GIFFALO		Date	29 July 2004
Signature			Telephone	
Title	AUTHORIZED PERSON			

This collection of information is required by 37 CFR 1.31 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

¶28

The earliest Intellectual Ventures transaction that we have found occurred on Feb. 18, 2001 between Purple Techno Solutions LLC and Venturemakers LLC of Campbell, Calif.³⁵ Interestingly, Purple Techno Solutions did not become incorporated until Dec. 9, 2003.³⁶ The Venturemakers' transaction was not recorded with the USPTO until August 18, 2005, well after Purple Techno Solutions had been formed as a company. A power of attorney for Purple Techno Solutions from 2005 is provided below, which also links this company to the Los Altos address.

³⁵ See, USPTO Assignment Database for US Patent "6285986", available at <http://assignments.uspto.gov/assignments/?db=pat&pat=6285986>.

³⁶ See, Delaware Secretary of State business entity search available at <https://delecorp.delaware.gov/tin/GINameSearch.jsp>.

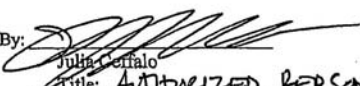
Pursuant to 37 C.F.R. §3.71, the assignee hereby states that prosecution of the above-referenced patent application is to be conducted to the exclusion of the inventor(s).

Send all future correspondence to: Jeffrey C. Hood
Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.
P.O. Box 398
Austin, Texas 78767-0398
(512) 853-8800

Assignee of Interest

Purple Techno Solutions LLC
171 Main St #271
Los Altos CA 94022

Dated: 16 MAY 2005

By: 
Julia R. Ceffalo
Title: AUTHORIZED PERSON



Washington State Bar Association

Sunday, June 03, 2007

Public Member Sponsor Help

WSBA Lawyer Profile

Member Name	Julia R. Ceffalo	WSBA Bar #	30460
Law Firm	Invention Law Group PLLC	Admit Date	11/14/2000
Address	677 120th Ave NE Ste 2A-248 Bellevue, WA 98005-3045	Status	Active
		Phone	(425) 467-2270
		Fax	(425) 679-0570
		Email	

Only active members of the Washington State Bar Association, and others as authorized by law, may practice law in Washington.

The discipline search function may or may not reveal all disciplinary action relating to a lawyer. The discipline information accessed is a summary and not the official decision in the case. For more complete information, call 206-727-8207 and press 7.

[Disclaimer](#)

[Back](#)

[New Search](#)

Is your address current and correct? Send changes to the WSBA Service Center at questions@wsba.org, or call 800-945-WSBA.
Do you have a web page? You can add a web link to your directory listing by clicking [here](#).

Public Member Sponsor Help

¶29

As noted above, Julia Ceffalo³⁷ has also signed at least 139 power of attorney documents in Intellectual Ventures-related cases, including the authorization for Northstar Acquisition's pending patent applications.³⁸ To our knowledge, Northstar Acquisitions had not been previously identified as an Intellectual Ventures shell prior to the first edition of our report. Ben Franklin and Northstar Acquisitions are Delaware corporations and both companies have the same registered addresses in Delaware and Nevada. Interestingly, both companies have also used addresses in Los Altos, California -- including the address in Los Altos, which Intellectual Ventures co-founder Peter Detkin gave to the California Bar Association, the New York Bar Association, and the US Patent & Trademark Office.³⁹

³⁷ Washington State Bar Association records for Julia Ceffalo first accessed on June 3, 2007 and most recently accessed on Nov. 30, 2007, record available at http://www.mywsba.org/default.aspx?tabid=178&RedirectTabId=177&Usr_ID=30460.

³⁸ See, prosecution file history for US Application 09/750,592, now US Patent 7,433,683, power of attorney filed on Sept. 7, 2004, available at <http://portal.uspto.gov/external/portal/pair> under "Image File Wrapper."

³⁹ See, Northstar assignment records at reel/frame 018222/0226, available at the USPTO assignment database at <http://assignments.uspto.gov/assignments/q?db=pat&reel=018222&frame=0226>, and see California Bar Association record for

The image shows two side-by-side screenshots. The left screenshot is from the United States Patent and Trademark Office (USPTO) website, displaying 'Patent Assignment Assignee Details' for Northstar Acquisitions LLC. The right screenshot is from The State Bar of California website, showing the attorney profile for Peter Neal Detkin, #134799. A red line connects the address of Northstar Acquisitions LLC in the left screenshot to the address of Peter Neal Detkin in the right screenshot.

United States Patent and Trademark Office
 Home | Site Index | Search | Guides | Contacts | eBusiness | eBiz alerts | News | Help

Assignments on the Web > Patent Query

Patent Assignment Assignee Details
NOTE: Results display only for issued patents and published applications. For pending or abandoned applications please consult USPTO staff.

Assignee Name : NORTHSTAR ACQUISITIONS LLC
Total Assignments: 1
Assignment: 1

Reel/Frame: 018222/0226 **Recorded:** 08/21/2006 **Pages:** 7
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS). **Exec Dt:** 07/22/2003

Assignor
 1 PENTECH FINANCIAL SERVICES, INC.

Assignee
 1 NORTHSTAR ACQUISITIONS LLC
 LOS ALTOS, CALIFORNIA 94022

Property

Pat #	Pub #	App #
NONE	US20070042786	11507789

Correspondence name and address
 BERKELEY LAW & TECHNOLOGY GROUP, LLC
 1700 HWY 167TH PLACE, SUITE 240
 012 P2013C
 BEAVERTON, OREGON 97006

THE STATE BAR OF CALIFORNIA
 Monday, July 2, 2007 **State Bar Home**

Attorney Resources
 Public Services
 About the Bar
 Member Services

ATTORNEY SEARCH
Peter Neal Detkin - #134799
Current Status: Active

This member is active and may practice law in California.
 See below for more details.

Profile Information

Bar Number	134799	Phone Number	(650) 947-8140
Address	Los Altos, CA 94022-3747	Fax Number	Not Available
		e-mail	Not Available
District	District 3	Undergraduate School	Univ of Pennsylvania; Philadelphia PA
County	Santa Clara	Law School	Univ of Pennsylvania LS; Philadelphia PA
Sections	None		

¶30

Northstar Acquisitions obtained a portfolio of 17 patents and 3 published applications from Pentech Financial Services, Inc. on July 22, 2003, the agreement for which was recorded on Sept. 12, 2003.⁴⁰ Pentech obtained the patents from Mobility Network Systems, Inc. The portfolio appears to largely comprise the former assets of mDiversity, Inc., although some of the patents originated with SC-Wireless, Inc., SC-Wireless, Ltd., and Cellular Telecom, Ltd., and Hitachi Metals, Ltd.

Peter Detkin, available at <http://members.calbar.ca.gov/fal/Member/Detail/134799>, originally accessed on June 3, 2007 and most recently accessed on Nov. 30, 2007, records are the same albeit a slight change in telephone number. As noted, we learned from Peter Detkin shortly after publication of our first edition that this address was his residential address, and while this address is available on three public websites, we have obscured the address at Mr. Detkin's request.

⁴⁰ See, USPTO Assignment Records for US Patent "5751516," available at <http://assignments.uspto.gov/assignments/q?db=pat&pat=5751516>.

PTO/SB/82 (09-03)
Approved for use through 11/30/2005, OMB 0651-0035
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

REVOCATION OF POWER OF ATTORNEY WITH NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Application Number	09/760,692
Filing Date	December 28, 2000
First Named Inventor	Bhupal Kanalyala Dharla
Art Unit	2631
Examiner Name	Not yet assigned
Attorney Docket Number	012.P2012

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint the practitioners associated with the Customer Number: 00043813

☒ Please change the correspondence address for the above-identified application to:

☒ The address associated with Customer Number: 00043813

OR

☐ Firm or Individual Name

Address

Address

City State Zip

Country

Telephone Fax

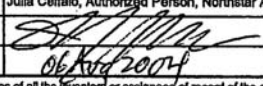
I am the:

☐ Applicant/Inventor.

☒ Assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

SIGNATURE of Applicant or Assignee of Record

Name Julia Ceffalo, Authorized Person, Northstar Acquisitions LLC

Signature 

Date 06/08/2004 Telephone

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ Total of 1 forms are submitted.

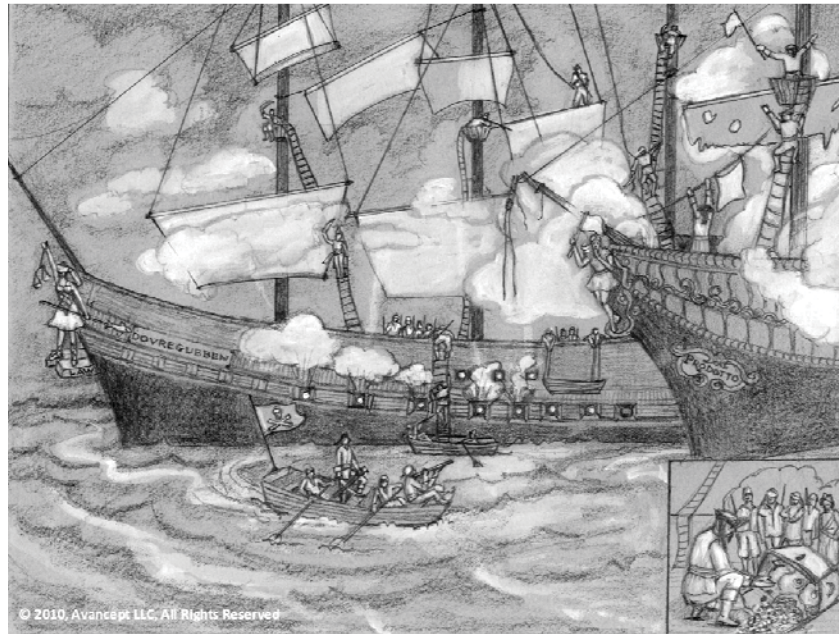
This collection of information is required by 37 CFR 1.36. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Paper II

Indirect Exploitation of Intellectual Property Rights By Corporations and Investors

IP Privateering and Modern Letters of Marque and Reprisal



by TOM EWING*

* Thomas Ewing, JD, MS, MA, Licentiate in Industrial Management & Economics (expected 2012). Mr. Ewing is a commercial lawyer and intellectual property counselor. *IAM Magazine* has thrice named him as one of the world's 250 best intellectual property strategists. I am grateful to Prof. Robin Feldman, Prof. Ove Granstrand, Marcus Finlöf Holgersson, Mike Jacobs, and Ruud Peters for their assistance and helpful comments with this Article.

Chapter 1 – Introduction	3
1.1 An Overview of IP Privateering in the Pro-Patent Era.....	4
1.2 Historical Privateering	8
1.3 Brief Review of Related Work.....	9
1.4 Purpose and Research Questions.....	10
1.5 Scope and Limitations.....	11
1.6 Outline of the Article	12
Chapter 2 – IP Privateering Background and Analytical Framework	13
2.1 Competitive Background of IPR Employment.....	13
2.1.1 Growth of IPR Competition.....	14
2.1.2 Intermediaries and the Growth of Patent Markets.....	20
2.1.3 The Rise of Aggressive Non-Practicing Entities	24
2.1.4 The Innovation System and the Emerging IPR Ecosystem	26
2.2 IP Privateering Identified as a Species of Aggressive NPEs.....	29
2.2.1 NPEs, Privateers, and Markets	30
2.2.2 Commercial Objectives of Indirect IPR Exploitation	32
2.3 Methodology	36
2.3.1 Tracing the Evolution of Indirect IPR Exploitation.....	38
2.3.2 Electronic Detection of Indirect IPR Exploitation.....	40
Chapter 3 – IP Privateering Varieties and Limitations	43
3.1 The Likely Roots of IP Privateering.....	43
3.2 IP Privateering Typology: Characteristics and Technique	49
3.2.1 Variable: the Sponsor Types.....	50
3.2.2 Variable: Discretion Levels	50
3.2.3 Variable: Indirect Monetization Goals.....	51
3.2.4 Variable: the Privateer's Operational Knowledge	51
3.2.5 Variable: the Sponsor's Control Over the Privateer.....	53
3.2.6 Variable: the Privateer's Corporate Structure.....	53
3.2.7 Variable: Profit Sharing Structure	54
3.3 Privateering Examples	54
3.3.1 Operating Company Objective: Change in Technology Adoption Rate	55
3.3.2 Investor Objective: Outsourced Licensing.....	59
3.3.3 Operating Company Objective: Outsourced Licensing.....	61
3.3.4 Hybrid Sponsorship Objective: Outsourced Licensing and Reduced Adoption Rate	63
3.3.5 Operating Company Objective: Change in the Law and/or Building Influence	64
3.3.6 Investor Objective: Growing an Existing Investment.....	67
3.3.7 Investor Objective: Change in Stock Price	67
3.3.8 Investor Objective: Short Selling	69
3.3.9 Investor Objective: Change in Valuation.....	70
3.3.10 Investor Objective: Recouping Research Costs	72
3.4 Privateering Infrastructure	73
3.5 The Possible Oversupply of Marketable Patents That Simplifies Privateering	74

Chapter 4 – Implications for Policy, Management, and Research	79
4.1 Privateering as Anticompetitive and Market Manipulation	79
4.2 Prohibitions Against IP Privateering Per Se.....	82
4.2.1 Avenues for Enjoining IP Privateering	82
4.2.2 IP Privateering from the Perspective of Economic Actors	85
4.2.2.1 Inventor, SME, and NPE Points of View.....	85
4.2.2.2 Investor Point of View	86
4.2.2.3 Large Operating Company Point of View	87
4.2.3 IP Privateering from an Innovation System Perspective.....	89
4.2.3.1 IP Privateering, NPEs, and Venture Capital	89
4.2.3.2 Innovation System Policy Questions and Considerations.....	93
4.3 A Review of Policy and Management Considerations	99
4.4 Suggestions for Further Research.....	100
Chapter 5 – Conclusions	102
Appendix 1 – Capital Sources for NPE & Privateering Activities	105

Chapter 1 – Introduction

Modern capitalist economies have been built on competition among market actors.¹ Absent adverse legal or business consequences, companies are incentivized to compete using every tool and technique reasonably at their disposal. Companies have increasingly employed intellectual property rights (IPRs) as competitive tools during the past thirty years of the pro-patent era, frequently with the goal of extracting value directly from their IPRs whether from licensing revenue or litigation rewards. As IPR competition has accelerated,² companies and investors have sought to grow ever greater returns from IP assets which have incentivized the exploration of new applications of IPRs to fulfill competitive aspirations. Innovations in IPR exploitation have led companies and investors to develop a class of strategic techniques that facilitates the indirect application of IPRs for beneficial effects. One technique among these indirect strategies, labeled here as “IP privateering,” concerns the exploitation of third-party IPRs as tools for achieving larger competitive goals.

1. See, e.g., JOSEPH SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* (5th ed. 1976).

2. Adam Jaffe, *The U.S. Patent System in Transition: Policy Innovation and the Innovation Process*, *Research Policy* 29: 531–57 (2000).

1.1 An Overview of IP Privateering in the Pro-Patent Era

The commercial significance of the IPR system has changed dramatically over the past thirty years. In the early 1980s, important changes, particularly in the United States, stimulated an era in which firms and other institutions became significantly more interested in IPRs, especially patents, than they had in the past. Prior to this period, patents had often been viewed as minor competitive tools. Over the intervening thirty year period, IPRs have become much more important, and the resulting IP regime is often referred to as the “pro-patent era.” In the United States, this new era was initially driven by a variety of factors, including, but not limited to, the creation of the Court of Appeals for the Federal Circuit and the passage of the Bayh-Dole Act.³ These developments have had pervasive effects on various levels, including global consequences as the pro-patent era rapidly involved Japan and many other countries as well.⁴ Over these subsequent years, countries and companies have increasingly armed themselves with IPRs as competitive tools, with the United States and Japan in the lead, at least in terms of active patents and new patent application filings.⁵ IPR issues, once unimportant questions for specialists, have become strategic and have risen to high levels of political and industrial management.

During this pro-patent era, competitive pressures stimulated increasing interest in IPRs and strategies related to their deployment. The majority of these strategies could be classified as “direct uses” in which a company focuses exclusively on maximizing the effectiveness of IPRs developed from the company’s own research and development (R&D) activities. Over time, increasing interest in IPRs, as discussed below, stimulated the development of robust IPR markets. Competitive pressures combined with the rich varieties of

3. See, e.g., Martin J. Adelman, *The New World of Patents Created by the Court of Appeals for the Federal Circuit*, 20 J.L. REFORM 979, 979–1007 (1987); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 839–916 (1990). But see Samuel Kortum & Josh Lerner, *Stronger Protection or Technological Revolution: What is Behind the Recent Surge in Patenting?* 48 CARNEGIE-ROCHESTER CONF. SERIES ON PUB. POL’Y, June 2008, at 247–304.

4. OVE GRANSTRAND, CORPORATE INNOVATION SYSTEMS. A COMPARATIVE STUDY OF MULTI-TECHNOLOGY CORPORATIONS IN JAPAN, SWEDEN AND THE USA (2000)), available at <http://www.lem.sssup.it/Dynacom/D21.html>.

5. According to the World Intellectual Property Organization, the United States and Japan account for nearly 50% of the world’s active patents in 2009. Statistics on Patents, World Intellectual Property Organization, <http://www.wipo.int/ipstats/en/statistics/patents/> (last visited Sept. 30, 2011).

IPRs available in these markets have led to the development of various indirect IPR strategies. Companies no longer need to rely exclusively on IPRs developed from their own R&D. Companies may purchase external, third-party IPRs to fulfill a variety of needs. For example, if a competitor has a product that threatens a company's own products, but the company owns no pertinent IPRs of its own, the company may purchase relevant IPRs in the market and sue the competitor for infringement. Similarly, if a company is sued for infringement but holds no pertinent IPRs to use in a countersuit, the company may purchase an appropriate IPR in the market. A still further indirect use of IPRs, which is the subject of this Article, and labeled here as "IP privateering," concerns the beneficial application of third-party IPRs for a sponsoring entity against a competitor to achieve a corporate goal of the sponsor.

A corporation or investor, by serving as the sponsor for an IP privateering engagement, can employ third-party IPRs as competitive tools. The privateer, a specialized form of non-practicing entity (NPE),⁶ asserts the IPRs against target companies selected by the sponsor. The sponsor's benefits do not typically arise *directly* from the third party's case against a target, but arise *consequentially* from the changed competitive environment brought about by the third party's IPR assertion. As discussed below, the sponsor's benefits may include nudging the target into a less favorable competitive position, facilitating the licensing of a larger collection of the sponsor's own IPRs, and causing a beneficial change to the target's share price and/or corporate valuation. The third-party privateer's motivation comprises collecting a litigation settlement or damages award.

IP privateering, as used herein, can be defined as: the assertion of IPRs by an entity (the privateer), typically in the form of an NPE, against a target company for the direct benefit of the privateer and the consequential benefit of a sponsor, where the consequential benefits are significantly greater than the direct benefits. The strategy, in part, relies upon the "intransparencies" of ownership and motivation permitted in the IP system. IP privateering is an indirect strategy in that the IPRs asserted are not owned by the sponsor,

6. This Article uses the conventional NPE acronym rather than the patent assertion entity (PAE) acronym recently advanced by the Federal Trade Commission. See FED. TRADE COMM'N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 8 (Mar. 2011), available at <http://www.ftc.gov/os/2011/03/110307patentreport.pdf>.

although they may have originated from the sponsor's R&D and/or once been owned by the sponsor.

Indirect exploitation of IPRs via intermediaries⁷ does not per se give rise to a specific legal cause of action against the sponsor in most scenarios. In fact, the sponsor's potential legal liability rarely exceeds that of the third-party privateer who carries out the sponsor's assertion plan. If the privateer avoids liability, so does the sponsor in most instances. Potential sponsor legal liability ranges from tortious interference in business relations to patent misuse, and includes possible market manipulation charges and antitrust violations. A sponsor's greatest potential liability, however, is not legal, but involves potential adverse business consequences, particularly from public exposure of the sponsor's involvement. Indeed, a sponsor's goals for a privateering operation are often defeated by public exposure. For example, IP privateering only thwarts the "mutually assured destruction" paradigm of defensive patenting so long as the operating company sponsor can plausibly deny control over the privateer. Consequently, the sponsor typically makes every effort to hide its involvement in a privateering operation. Privateering can often achieve the sponsor's aims well before a decision on the merits of the case brought by the privateer, minimizing the chance the sponsor will be identified to the target during the course of litigation.

Privateering scenarios can be shaped to fit many competitive scenarios. Privateering may be used by operating companies to change the technology adoption rate between an upstart technology and an incumbent technology, to outsource the licensing of a larger collection of IPRs, and to change some aspect of the legal infrastructure. Privateering may be used by investors to grow existing investments by privateering against competitors in a given technology area, to change the value of the stock price of a public company to temporarily discount its shares and/or to facilitate short selling, to change a company's value during investment, and to recoup investment research and analysis costs. Outsourcing patent litigation, one branch of privateering, allows companies to shape their competitive environments and in some instances monetize their IP rights at extremely low cost. While industry experts and IP managers concede that privateering exists, the extent to which various

7. As discussed below, these intermediaries can perform more than a mere "outsourced" litigation function. The sponsor often benefits whether or not the litigation succeeds since the intermediary's litigation against a target changes the relative competitive landscape between the target and the sponsor to the sponsor's advantage.

privateering scenarios have occurred, are occurring, or will occur in the future, and which privateering scenarios are possible but presently only hypothetical remains somewhat unknown and unknowable. This is primarily due to the sponsor's goal in almost every privateering engagement to remain hidden, and because there are few existing reasons under U.S. law why the complete ownership structure behind a given patent-holding entity must be publicly exposed⁸ or why the motivations of a plaintiff in a patent infringement case must be explained. The privateering examples discussed below appear to have resulted in the collection of more than \$3 billion thus far by the known sponsors, and still more in terms of revenues retained and costs avoided, although the total amount received by sponsors remains unclear and possibly incalculable.

IP privateering is not limited to just operating companies; investor groups also likely privateer as well. In some instances, as discussed below, the potential returns and liabilities for these investors compares even more favorably than for the operating companies. Hybrid privateering efforts by operating companies and investors also seem to have occurred, especially in instances where the investors are also major stockholders of the operating company that will indirectly benefit from the privateering litigation.

Although privateering per se gives rise to no legal or equitable cause of action,⁹ whether the practice should be discouraged is another matter. Since privateering is generally lawful, one cannot easily argue that the practice encourages disrespect for the law. Nevertheless, privateering raises questions about the social utility of IPRs, particularly patent rights. Among other things, is "intransparency" in the IPR system harmful or are society's objectives in maintaining an IPR system met simply through the enforcement of government-granted rights by any actor, even a hidden one? Privateering also raises questions about the impact of venture capital investments in NPEs on the overall economy and the innovation system as a whole. In the absence of information to the contrary, it seems possible that much of the profit from privateering, as well as NPEs, returns to investment rather than being removed

8. See Thomas Ewing, *Practical Considerations in IP Privateering*, 4 HASTINGS SCI. & TECH. L. J. 111 (2011). Secrecy in privateering has no relationship with the social comprise relating to the technical disclosure required to obtain a patent under 35 U.S.C. § 112.

9. See *id.*

from investment.¹⁰ Privateering also raises questions about the quantity of active and available patents in the pro-patent era and the ease with which they can be acquired and asserted. The impact of privateering on the innovation system and the apparent presence of key innovation system actors in privateering suggests the possible consideration of a more overtly constructed innovation system explicitly designed by all of its major stakeholders, including independent inventors. However, conclusions are difficult to draw with the information presently available and additional investigation seems warranted.

1.2 Historical Privateering

Classical privateering was state-sponsored piracy. The government gave the privateer a “letter of marque and reprisal” that allowed him to seize the property of the state’s enemies.¹¹ The privateer could capture ships flying under the enemy’s flag, sell the ships and their cargoes at auction and keep the proceeds. During the first Anglo-Dutch War of 1652, English privateers seized more than 1,000 Dutch ships over a two-year period.¹² In the subsequent Anglo-Spanish war of 1654, Spanish and Flemish privateers in return seized more than 1,500 English merchant vessels.¹³ Many of the famous English “Sea Dogs,” such as Sir Francis Drake, were privateers. This method of war was so effective that it had to be abolished by treaty, the Paris Declaration Respecting Maritime Law (1856).¹⁴ To further curtail the use of privateering in warfare, the Hague Convention (1907) clarified the Paris Declaration, by requiring, among other things, that non-military vessels converted into military vessels be

10. As discussed below, the typical minimum capital outlay for a privateering operation suggests that it is available to a class of market participants whose living needs are already well met *e.g.*, the sponsors’ profiles likely resemble those of venture capitalists.

11. Article I, Section 8, paragraph 11 of the U.S. Constitution authorizes Congress to “grant Letters of Marque and Reprisal”; *available at* <http://www.archives.gov/exhibits/charters/constitution.html>.

12. Gary M. Anderson & Adam Gifford, Jr., *Privateering and the Private Production of Naval Power*, 11 CATO J. 99, 106 (1991).

13. *Id.*

14. Declaration Respecting Maritime Law, Apr. 16, 1856, *available at* <http://www.icrc.org/ihl.nsf/INTRO/105?OpenDocument>.

under the immediate command of a sovereign government in order for the crew not to be considered pirates.¹⁵

IP privateering resembles this historic method of waging war. “Privateering,” as it was called, was effective and cheap—the privateer’s actions cost the sponsoring government nothing. Privateering, like the creation of corporations, allowed governments to pursue policy objectives without any impact on the treasury. In short, classical privateering removed most obstacles to waging war, save for the opponent’s ability to retaliate. Similarly, in IP privateering the opponent’s ability to retaliate is the sponsor’s greatest obstacle, hence the importance of stealth.

1.3 Brief Review of Related Work

Many studies have investigated the growth of IPRs in the pro-patent era of the past thirty years.¹⁶ Studies have also directly examined the innovation system.¹⁷ In general, these studies indicate that IPRs, particularly patents, play a role in the furtherance of technology markets. However, conclusions about the degree to which IPRs further the technology markets and/or are vital to technology transfers differ somewhat among these studies. Many more recent studies have focused on aggressive NPEs and the impact of patent litigation on the innovation system.¹⁸ The role of NPEs in the

15. *Convention (XIII) Concerning the Rights and Duties of Neutral Powers in Naval War*. The Hague, Oct. 18, 1907; text of the treaty available from the International Red Cross at: <http://www.icrc.org/ihl.nsf/INTRO/240?OpenDocument>.

16. See, e.g., *THE POSITIVE SUM STRATEGY: HARNESSING TECHNOLOGY FOR ECONOMIC GROWTH*, (Ralph Landau & Nathan Rosenberg eds., 1986); Dietmar Harhoff, F.M. Scherer, & Katrin Vopel, *Exploring The Tail Of Patented Invention Value Distributions*, in *ECONOMICS, LAW AND INTELLECTUAL PROPERTY*, 279 (Ove Granstrand ed., 2003); Edwin Mansfield, *Patents And Innovation: An Empirical Study*, 32 *MGMT. SCI.*, no. 2, 1986 at 173; F. M. SCHERER, *NEW PERSPECTIVES ON ECONOMIC GROWTH AND TECHNOLOGICAL INNOVATION* (1999); F. M. Scherer, *The Propensity To Patent*, 1 *INT’L J. INDUS. ORG.*, no. 1, 1983 at 107; F. M. SCHERER, *INNOVATION AND GROWTH. SCHUMPETERIAN PERSPECTIVES* (1984).

17. See, e.g., *NATIONAL INNOVATION SYSTEMS: A COMPARATIVE ANALYSIS* 29 (Richard Nelson, ed., 1993); *NATIONAL SYSTEMS OF INNOVATION. TOWARDS A THEORY OF INNOVATION AND INTERACTIVE LEARNING* (Bengt-Åke Lundvall ed., 1992); CHARLES EDQUIST, *SYSTEMS OF INNOVATION, TECHNOLOGIES, INSTITUTIONS AND ORGANIZATIONS* (1997); GRANSTRAND, *supra* note 4; *SECTORAL SYSTEMS OF INNOVATION—CONCEPTS, ISSUES AND ANALYSES OF SIX MAJOR SECTORS IN EUROPE* (Franco Malerba ed., 2004).

18. See, e.g., Council of Econ. Advisers, *The Role of Intellectual Property in the Economy*, THE ANN. REP. OF THE COUNCIL OF ECON. ADVISERS, 211 (2006); The Fed. Trade Comm’n, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy* (2003); The Federal Trade Comm’n, *Evolving IP Marketplace. The*

innovation system, especially the more aggressive NPEs, has been highly controversial in recent years. Many authors assert that the patent portion of the innovation system has been severely impaired while others argue that the effects of aggressive NPEs have been exaggerated. The indirect uses of IPRs have been touched upon briefly in other studies,¹⁹ although I am not aware of a study focused on indirect IPR uses per se. These previous studies have examined indirect uses of IPRs where a commercial actor acquired a patent(s) and asserted it against a competitor, or where a commercial actor responded to an infringement litigation by buying a patent(s) and using it to bring counterclaims against the plaintiff. I am also not aware of a previous study that has examined the indirect use of IPRs by a party that has not even purchased or licensed the IPRs that a third party is beneficially exploiting on its behalf, which is the subject of this Article.

1.4 Purpose and Research Questions

Aggressive NPEs have emerged in recent years from beyond their pioneering practitioners. Billions of new capital has flowed into NPEs such as Intellectual Ventures (“IV”), Acacia, RPX, Round Rock Research, and many others.²⁰ Concurrently with this development, and somewhat related to it, operating companies have increasingly explored indirect uses of IPRs, from buying patents and then asserting them against competitors to buying patents solely for the purpose of filing a countersuit in an infringement litigation initiated by a competitor. This Article explores a further development in the indirect application of IPRs, one in which companies do not even need to own IPRs in order to consequentially benefit from their exploitation, referred to here as IP privateering.

Based on methodological and theoretical frameworks, this Article attempts to answer the following research questions:

1. How extensive is the use of IP privateering and can a typology be developed around the core parameters of the strategy?

Operation of IP Markets: The IP Marketplace in the IT Industry (2008); The Federal Trade Comm’n, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition* (2011).

19. See, e.g., Colleen Chien, *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, 62 HASTINGS L.J. 297 (2010).

20. A list of the investors in four of Intellectual Venture’s investment funds is provided in Appendix 1.

2. Is the infrastructure of the existing innovation system sufficiently robust to accommodate the indirect uses of IPRs, curtailing such strategies when they act to the net detriment to the overall innovation system?

The first research question above concerns the identification of IP privateering cases and the development of a framework description of this strategy. This question will be answered by reviewing commonalities among known litigations where a third party has likely benefited from motivating the initiation of the infringement litigation. These commonalities will then be organized to form a typology comprising what appears to be the extent of the strategy.

The second research question originates from the apparent growth of various indirect IP strategies, of which privateering is but one. This question also arises as a result of the increasing amounts of capital that have recently become available to aggressive NPEs, including but not limited to the IP privateers, and this question also considers asymmetries such as the differing levels of transparency possible between the plaintiff and the defendant in an IP litigation, as well as issues such as the consequences of developing markets for IPRs.

Two related research questions are pursued in a companion Article:²¹ (1) What are the limits on deployment of this strategy by commercial actors? (2) To what extent can targets of privateering attacks retaliate against the sponsors simply for privateering alone, as opposed to other causes of action?

1.5 Scope and Limitations

The investigation of the impact of IP privateering can be interpreted in many ways depending on the purposes and scope of the study. This Article has the following scope of analysis and limitations of the results:

1. This study primarily focuses on the identification of an IP strategy that has not previously been identified, although it may have been practiced privately for a number of years by various commercial actors. The study focuses on exploring the potential range of this strategy and further studies the potential limitations on its usage. The practitioners' needs for secrecy make assessing the prevalence of this strategy difficult; however, many cases,

21. See Ewing, *supra* note 8.

amounting to several billion dollars in economic activity, have been collected. Nevertheless, the number of cases presently known is limited, rendering it difficult to undertake the types of statistical analyses that one would prefer to utilize.

2. The study is focused primarily on the United States, using U.S. patents in the context of the U.S. legal system. Therefore it does not address cases of this strategy in other countries, apart from one possible instance of IP privateering in Germany. Thus, the boundaries and limitations on the strategy discussed in Chapters 3 and 4 may be substantially different in other legal systems. As a result, deployment of this strategy in other legal settings may be different from use in the United States, and possibly not available at all.

1.6 Outline of the Article

This report comprises a descriptive portion followed by a discussion portion. The descriptive portion (Chapter 2) begins with an overview of the competitive background into which IP privateering evolved and classifies IP privateering as a species of aggressive NPEs. This Section also describes various methodologies that I have used to probe the extent to which corporate actors have employed this strategy. The descriptive Section (Chapter 3) then explains how IP privateering works in its various embodiments and provides a topology of privateering along with examples of privateering among both operating companies and investors. The descriptive Section also discusses the infrastructure that supports privateering and concludes with a discussion of how a present patent oversupply seems to facilitate privateering. The discussion portion (Chapter 4) observes that present law may be used to curtail anticompetitive and market manipulative privateering but further observes that effective curtailment may require the intervention of the Securities and Exchange Commission (SEC) and/or the Antitrust Division of the U.S. Department of Justice (DOJ). The discussion Section next looks at those forms of privateering that are not clearly anticompetitive or market manipulative and concludes that these forms of privateering will likely continue in the short-to-medium term and may require legislative reform if their curtailment is desired. The discussion Section examines the social utility of privateering from various points of view including large corporate, small and medium enterprise (SME), investor, and inventor. This Section further poses some questions about privateering and aggressive NPEs, observing

that both activities are likely supported by players who also operate in the investment capital market. Finally, the discussion Section considers whether legislators should explicitly design an innovation system that includes boundaries for activities like privateering and aggressive NPE activity.

Chapter 2 – IP Privateering Background and Analytical Framework

2.1 The Competitive Background of Contemporary IPR Employment

The rise of new IPR strategies as a result of increasing IPR competition over the past thirty years has been noted. The development of various indirect IPR strategies has also been noted as will be discussed further. Because patent litigation in particular typically involves stakes of several million dollars,²² a common assumption is that the primary motivation behind every infringement lawsuit is to make money directly from the litigation.²³ But what if the ultimate reward arises as a *consequence* to the litigation as opposed to the litigation's settlement or damage award itself? IP privateering exploits the idea that third-party IP rights can serve as useful tools in shaping a firm's competitive landscape and can be used to generate consequential returns that sometimes exceed the direct returns possible from a patent license or litigation settlement.

Some IP strategies, such as privateering, can escape notice for years. First, companies do not typically reveal their core IP strategies.²⁴ There are issues and practices related to overall corporate strategy that rarely, if ever, come to the attention of even a

22. PRICEWATERHOUSECOOPERS, PATENT LITIGATION STUDY, A CLOSER LOOK—PATENT LITIGATION TRENDS AND THE INCREASING IMPACT OF NONPRACTICING ENTITIES (2009), at 6, *available at* <http://www.pwc.com/us/en/forensic-services/publications/assets/2009-patent-litigation-study.pdf> (showing that the median patent infringement court-awarded damages for NPE patent-holders from 2002 to 2009 was \$12 million and that the median patent infringement damage award for operating companies was \$3.4 million).

23. See Julianne Pepitone, *Patent Troll Sues Apple, Google, and Most of the Tech Universe*, CNN MONEY (July 9, 2010) http://money.cnn.com/2010/07/09/technology/ntp_sues_apple/index.htm?source=cnn_bin&hpt=Sbin. See generally Daniel P. McCurdy, *Patent Trolls Erode the Foundation of the U.S. Patent System*, SCI. PROGRESS, Fall & Winter 2008/2009, at 78, 78–79, *available at* <http://www.scienceprogress.org/wp-content/uploads/2009/01/issue2/mccurdy.pdf>.

24. “Sven-Christer Nilsson, a former CEO of Ericsson, once remarked that IP strategy is not the sort of thing that a company should outsource or share with outsiders. “You keep all that to yourself,” he said. Tom Ewing, *Introducing the Patent Privateers*, INTELL. ASSET MGMT. MAG., Jan.-Feb. 2011 at 30, 31.

firm's closest advisers let alone the public. Second, successful privateering typically demands stealth, so only a select group understands the overall plan. Third, few venues exist for public discussion of confidential corporate strategies, and corporations have no incentive for sharing their secrets with the rest of the world.²⁵ The legal system as a whole does not typically reflect on the motive behind any given patent lawsuit, especially NPE litigations.²⁶ The Federal Circuit has not adjudicated a privateering case per se, and probably never will as a hearing at an appeals court would not typically be in a sponsor's best interests. Finally, digging out the specific motives and motivations from powerful circumspect parties can be a Herculean effort.

Privateering sponsors can be divided into two main types: corporate and investor. Corporate privateering (but possibly not investor privateering) jibes with classical management theory. Traditional models hold that firms outsource tasks that do not represent increasing returns or diminishing costs and retain tasks such as governance.²⁷ Sponsoring corporations tend to set the objectives for a privateering operation, assist in assembling the necessary resources for carrying out the plan, and then step aside from further hands-on management. For some corporate privateers, the privateering effort can be likened more to outfitting an autonomous probe for a deep space mission. Once the probe has been launched, its creator loses a measure of control over it.²⁸ Playing a more active role could show the corporate sponsor's hand, the very hand that must be obscured in order for the privateering effort to work properly. Investor privateering also follows a similar pattern, although outsourcing may likely be done less for stealth reasons than for expertise reasons.

2.1.1 The Growth of IPR Competition During the Pro-Patent Era

Competition among companies has been described as a cumulative, dynamic process in which firms develop multi-faceted

25. Corporate IP strategies play no part of the public disclosure required to obtain patent protection under the U.S. Patent Act 35 U.S.C. § 112.

26. Though if anything, the default motive is simply assumed to be the acquisition of funds via an award of damages or settlement.

27. See George J. Stigler, *The Division of Labor Is Limited by the Extent of the Market*, 59 J. POL. ECON., no. 3, at 185, 193 (1951).

28. See, e.g., Gina Keating, *Mars Probe Lost in Space*, COSMOS (Nov. 22, 2006), <http://www.cosmosmagazine.com/news/866/mars-probe-lost-space>.

plans that comprise assembling various complementary assets to achieve business goals.²⁹ Among other things, firms have been forced in the pro-patent era to continuously innovate, pressed by shortened technology, development, and product life cycles, which has effectively increased competitive pressures.^{30, 31, 32} Competitive pressures across a whole spectrum of issues have already motivated firms to look broadly and outside their own organizations for technologies and IPRs. This Section summarizes the development of IP strategies as a result of competitive pressures during the pro-patent era of the past thirty years.

IPRs, as key complementary assets, have been increasingly employed as competitive tools³³ and business assets.³⁴ U.S. patent licensing revenues have grown from below \$15 billion annually at the beginning of the 1990s to around \$100 billion annually by 2002 and are likely to be even higher today.³⁵ Corporate focus on IPRs has been encouraged by companies who have reportedly saved themselves from bankruptcy by virtue of their patent licensing programs.³⁶ As more and more firms reported increases in their licensing transactions,³⁷ competitive pressures understandably

29. See Ashish Arora & Robert Merges, *Specialized Supply Firms, Property Rights and Firm Boundaries*, 13 INDUSTRIAL AND CORPORATE CHANGE 451 (2004); see also DAVID TEECE, *MANAGING INTELLECTUAL CAPITAL* (2000).

30. See Ove Granstrand, *The Economics and Management of Technology Trade: Towards a Pro-Licensing Era*, 27 INT'L J. TECH. MGMT. 209, 209-40 (2004) (noting the assembly of multiple technologies in products); see also OVE GRANSTRAND, *THE ECONOMICS AND MANAGEMENT OF INTELLECTUAL PROPERTY* 176 (1999).

31. See HENRY CHESBROUGH, *OPEN INNOVATION: THE NEW IMPERATIVE FOR CREATING AND PROFITING FROM TECHNOLOGY* (2003).

32. See FABRIZIO CESARONI, ALFONSO GAMBARDELLA, & WALTER GARCIA-FONTES, *R&D, INNOVATION AND COMPETITIVENESS IN THE EUROPEAN CHEMICAL INDUSTRY* (2004).

33. Markus Reitzig, et al., *Collateral Damage for R&D Manufacturers: How Patent Sharks Operate in Markets for Technology*, *Industrial and Corporate Change*, 19 INDUS. & CORP. CHANGE 947, 947-67 (2010).

34. GRANSTRAND, *supra* note 30; CHESBROUGH, *supra* note 31.

35. David Kline, *Sharing The Corporate Crown Jewels*, 44 MIT SLOAN MGMT. REV., no. 3, 2003 at 89-93.

36. See GRANSTRAND, *supra* note 4; GREGORY DESS, G.T. LUMPKIN & MARILYN L. TAYLOR, *STRATEGIC MANAGEMENT, CREATING COMPETITIVE ADVANTAGES* (2nd ed. 2005) (Texas Instruments was reportedly saved from bankruptcy in the mid-1980s by a patent licensing and litigation effort that hit certain Japanese operating companies particularly hard.).

37. John Sheehan, Catalina Martinez & Dominique Guellec, *Understanding Business Patenting and Licensing: Results of a Survey. Patents, Innovation and Economic Performance*, OECD Conference Proceedings, 89-11 (2004).

motivated some firms to innovate in a direction that led to development of markets for the transaction of IP assets.³⁸

Competitive pressures also motivated a surge in corporate patenting rates over this interval.³⁹ Companies expended substantial funds to acquire patents, typically from their own R&D,⁴⁰ and in the process sometimes arguably acted against their own self-interests.⁴¹ Once companies obtained large portfolios, they had good reasons to begin the strategic management of these expensive corporate assets. Many companies initially practiced, or proclaimed to practice, a defensive patenting strategy in which they limited assertion of their patent rights to protection of product revenues.⁴² By contrast, in an offensive patent strategy, companies assert their patents to obtain revenues directly from third parties. The defensive accumulation of patents ultimately resulted in offensive licensing and enforcement of those same defensively acquired patents.⁴³ For example, prior to its acquisition by Alcatel, Lucent Technologies had slowly evolved from being a defensive patentee into having an IP business group with 266 employees including licensing executives.⁴⁴ A company may, when

38. See HENRY CHESBROUGH, EMERGING SECONDARY MARKETS FOR INTELLECTUAL PROPERTY: US AND JAPAN COMPARISONS, RESEARCH REPORT TO NATIONAL CENTER FOR INDUSTRIAL PROPERTY INFORMATION AND TRAINING (NCIPI) (2006); ULRICH LICHTENTHALER, LEVERAGING KNOWLEDGE ASSETS: SUCCESS FACTORS OF EXTERNAL TECHNOLOGY COMMERCIALIZATION, (2006).

39. See *WIPO Patent Report: Statistics on Worldwide Patent Activities*, World Intellec. Prop. Org. 11 (2007), http://www.wipo.int/freepublications/en/patents/931/wipo_pub_931.pdf ("Since 1980, the patent offices of the United States of America followed by the European Patent Office, the Republic of Korea and China have all experienced significant growth rates in filings. At the nine [largest patent offices], the average annual growth rate from 1960 to 2005 was 3.35%.").

40. Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy: Joint Hearings Before the Fed. Trade Comm'n & Dep't of Justice 677-78 (Feb. 28, 2002) (statement of Robert Barr, Vice President for IP and Worldwide Patent Counsel, Cisco Systems, Inc.), available at <http://www.ftc.gov/opp/intellect/020228ftc.pdf>.

41. *Id.* at 713 (statement of Robert Barr, ("[W]e've entered this game five, six years ago in full force for the wrong reason and we're contributing to the proliferation to mutually assured destruction."); see also R. Polk Wagner, *Understanding Patent-Quality Mechanisms*, 157 U. PA. L. REV. 2135, 2155 (2009) (determining that adopting a strategy of quality over quantity is difficult to successfully implement because the IP system itself encourages the opposite behavior).

42. See, e.g., Josh Lerner, Jean Tirole, & Marcin Strojwas, *Cooperative Marketing Agreements Between Competitors: Evidence from Patent Pools*, 31 (NBER Working Paper No. 9680, 2003).

43. See Chien, *supra* note 19, at 323, 356.

44. David Rubenstein, *Patent Profits: How Lawyers and Engineers Milk the Intellectual-Property Cash Cow*, *Industry Wk.* (Nov. 2, 1998), http://www.industryweek.com/articles/patent_profits_102.aspx.

exiting a technology area, seek to license the technology in order to recoup past R&D expenses.⁴⁵ Similarly, a company might have patented a technology at an early stage but never developed it.⁴⁶ Companies asserting such IPRs have sometimes been called “corporate trolls.”⁴⁷

Lawsuits between large companies⁴⁸ represent 28% of all advanced technology patent litigations.⁴⁹ In a study of high-tech patent suits, Chien found that such suits were not only more common than other types of suits, but that they also lasted longer.⁵⁰ Litigation patterns also suggest that even large companies in their IPR assertions exploit asymmetries with their peers. Among 575 hardware and software “large company” lawsuits between 2000 and 2008, less than a third of the suits involved direct competitors. Roughly 40% of the cases involved some degree of competitive overlap, but more than 30% of the litigations involved companies having no overlapping business lines. Chien’s findings are consistent with other empirical findings.⁵¹ Exploiting an asymmetric exposure to a target company may tend to render the asserting company less exposed to countersuit⁵² although still susceptible to reputational damage where the infringement depends upon legal subtlety or questionably valid IPRs.

Patent proliferation somewhat counter-intuitively makes it easier for manufacturers to overlook IPRs in technically complex industries. An unbounded number of IPRs may potentially read on a single

45. See, e.g., BERNICE LEE ET AL., WHO OWNS OUR LOW CARBON FUTURE? INTELLECTUAL PROPERTY AND ENERGY TECHNOLOGIES 6 (2009) (describing such a practice as “divestiture licensing”).

46. See Colleen Chien, *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents*, 87 N.C. L. Rev. 1571, 1578 (2009) (As to such patents, the patent owner is “non-practicing.”).

47. See, e.g., Joseph N. Hosteny, *Litigators Corner: Is IBM a Patent Troll?*, INTELL. PROP. TODAY, May 2006, at 26, 26–27.

48. Chien, *supra* note 46, at 1612–14 (defining a “large company” as a public company or private company with annual revenue of over \$100 million).

49. *Id.* at 1603 (NPE lawsuits comprised 19% of the total.).

50. *Id.* at 1605.

51. See James Bessen & Michael J. Meurer, *The Patent Litigation Explosion* 18 (Bos. Univ. School of Law Working Paper Series, Paper No. 05-18, 2005), available at <http://ssrn.com/abstract=831685> (The Authors reported that among the studied 680 suits between public companies 29% involved competitors, 43% had overlapping product lines, and 28% had no industry overlap, based on comparison of the litigants’ SIC codes.).

52. Chien, *supra* note 19, at 318.

product feature,⁵³ and may be widely dispersed across different technology classes. The costs of identifying potentially infringed IPRs would likely far outweigh the benefits, especially since many of the owners of the potentially conflicting IP rights might never assert their rights for a variety of reasons.⁵⁴ This information complexity creates friction in technology markets.⁵⁵ Because costly complementary assets create bargaining power in technology interactions,⁵⁶ large R&D-intensive manufacturers can build up competitive strongholds in technology markets over time. Under these conditions, an IPR system contributes more to the functioning of the technology market than away from it.⁵⁷

Patent pools comprise another tool developed by corporate managers in response to competitive IPR pressures. Among other things, patent pools may curtail infighting among competitors and allow a new technology to enter the market.⁵⁸ Patent pools may be constructed along a variety of variables and for a variety of considerations. Pools may offer certain efficiencies for vertically integrated firms by enabling an industry cross-licensing mechanism.⁵⁹ Contributors to pools may own both patents and manufacture technology, and thus both pay and receive pool-related royalties. Of course, patent pools can fail when parties cannot agree on licensing fees and allocations.⁶⁰ Rather than joining a patent pool, a party may

53. See Bronwyn Hall and Rosemarie Ziedonis, *The Patent Paradox Revisited: An Empirical Study of Patenting in The U.S. Semiconductor Industry, 1979–1995*, 32 RAND J. ECON. 101 (2001).

54. Rosemarie Ziedonis, *Don't Fence Me in: Fragmented Markets for Technology and the Patent Acquisition Strategy of Firms*, 50 MGMT. SCI. 804, 807–09 (2004).

55. Reitzig, *supra* note 33, at 4.

56. See David Teece, *Profiting From Technological Innovation: Implications For Integrating, Collaboration, Licensing and Public Policy*, 15 RES. POL'Y 285 (1986).

57. Ashish Arora & Alfonso Gambardella, *The Changing Technology of Technological Change: General and Abstract Knowledge and the Division of Innovative Labor*, 30 RESEARCH POLICY 1479–1500 (1994).

58. Maisie Ramsay, *Diving into the LTE Patent Pool*, WIRELESS WEEK (May 20, 2009), <http://www.wirelessweek.com/Articles/2009/05/Diving-Into-the-LTE-Patent-Pool/>.

59. Anne Layne-Farrar & Josh Lerner, *To Join or Not to Join: Examining Patent Pool Participation and Rent Sharing Rules*, 29 INT'L J. INDUS. ORG. 294, 296 (2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=945189.

60. Ramsay, *supra* note 58 (quoting Derek Aberle, President of Technology Licenses at Qualcomm, as stating that large companies rarely join patent pools and consequently pool members tend to be small companies).

choose license or litigate separately from any mechanisms provided by the pool.⁶¹

The tone and tenor of corporate patent and technology licensing transactions has similarly experienced various stages of development over the past few decades. In the early years, many large company cross licenses often focused on quantity over quality, with metrics ranging from measuring patent stacks⁶² to essentially random patent sampling.⁶³ The sheer volume of patents involved in some major cross licenses and the high cost for determining which patents in a giant portfolio applied to a given competitor, coupled with factors ranging from determining appropriate royalty rates to considerations of potential invalidity for some patents in a given portfolio, further underlined the logic behind patent licensing among large companies.⁶⁴ Large patent-owning companies came to understand that this was the most efficient licensing procedure when it came to transactions among themselves. But this approach was not downward scalable when a large portfolio interacted with a small one. Among other things, issues such as invalidity and infringement can be studied reasonably well studied in a small portfolio.⁶⁵

61. Layne-Farrar & Lerner, *supra* note 59, at 301.

62. See, e.g., Ron Epstein, Chief Executive Officer, Ipotential, LLC, Remarks before the Federal Trade Commission, *The Evolving IP Marketplace: The Operation of IP Markets: The IP Marketplace in the IT Industry* (May 4, 2009) at 132, <http://www.ftc.gov/bc/workshops/ipmarketplace/may4/090504transcript.pdf> (In the infamous “ruler” methodology, “you would bring your stack and you’d bring a ruler, and you’d put each stack next to each other and you’d take a ruler and you measure the relative heights of the stack and some algorithm would tell you the number.”).

63. Fred Telecky, Senior Vice President and General Patent Counsel, Texas Instruments Corp., Remarks before the Federal Trade Commission, *Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy* (Feb. 28, 2002) 743 (“[F]or [TI] to know what’s in [its patent] portfolio, we think, is just a mind-boggling, budget-busting exercise.”).

64. See, e.g., *Tex. Instruments v. Hyundai Elecs. Indus.*, 49 F. Supp. 2d 893, 901 (E.D. Tex. 1999) (“[I]t is almost impossible on a patent-by-patent, country-by-country, product-by-product basis to determine whether someone is using a company’s patents.”).

65. See, e.g., Suneel Arora, *Preparing or Evaluating Non-Infringement and Other Patent Opinions*, Schwegman, Lundberg & Woessner (2006), <http://www.slwip.com/services/documents/PreparingorEvaluatingNon-InfringementandOtherPatentOpinions.PDF>.

2.1.2 Intermediaries and the Growth of Patent Markets

The increasing commercial application of IP assets has led to the growth of markets for patents and other IPRs⁶⁶ and an increasing presence of intermediaries in these markets.⁶⁷ Over time, these intermediaries have become more and more specialized.⁶⁸ While some intermediaries work towards the further development of a robust market for the efficient exchange of IP assets,⁶⁹ these same intermediaries can obviously serve indirect exploitation uses extremely well. Patent brokers can conduct negotiations for the privateering sponsor; patent valuation firms can assist in estimating settlement amounts; and patent acquisition firms, such as auction houses, can assist in transitioning patents from one owner to a new, privateering owner. Patent law firms, which are able to support all of these functions, have been around for more than one hundred years, although their primary mission is to assist clients in obtaining patents from national patent offices.⁷⁰

Specialized intermediaries have developed to facilitate IPR transactions between buyers and sellers.⁷¹ Changes in corporate

66. See CHESBROUGH, *supra* note 38; Irene Troy & Raymund Werle, *Uncertainty and the Market for Patents*, (Max Planck Institute for the Study of Societies, 2008), <http://www.mpifg.de/pu/workpap/wp08-2.pdf>; Alfonso Gambardella, P. Giuri, & M. Mariani, *Study on Evaluating the Knowledge Economy: What are Patents Actually Worth? The Value of Patents for 'Today's Economy and Society*, Brussels, European Commission (Directorate-General for Internal Market, 2006).

67. OECD, BMWI, EPO, *Intellectual Property as an Economic Asset: Key Issues in Valuation and Exploitation*, at 7, (2005), <http://www.oecd.org/dataoecd/18/2/35519266.pdf> ("Many large firms have developed internal capabilities for patent management and licensing, but as in other markets a diverse set of intermediaries have also emerged to foster technology markets, more so in the United States than in Europe. Intermediaries include technology licensing offices at public research organisations, Internet-based portals, and private firms that offer advice and actively link buyers and sellers of technology. Each type of intermediary has a different customer focus and different level of involvement in transactions, but all play important roles in facilitating partnerships, ensuring confidentiality of partners in a transaction (e.g. protecting privacy in negotiations to avoid competitors knowing about the parties' interests), offering expertise (need to ensure that the deal corresponds to the parties' needs) and providing an external perspective on the negotiation.").

68. Troy & Werle, *supra* note 66.

69. CHESBROUGH, *supra* note 31.

70. For example, Bristows, a UK patent law firm, was founded in 1837; see Bristows-At-a-glance, BRISTOWS.COM, http://www.bristows.com/about_us/key_facts (last visited Oct. 17, 2011).

71. See Peter Detkin, Presentation at the Federal Trade Commission's Hearings: *The Evolving IP Marketplace: The Operation of IP Markets*, FTC 11 (Dec. 5, 2008), <http://www.ftc.gov/bc/workshops/ipmarketplace/dec5/docs/pdetkin.pdf>; Raymond Millien

policies coupled with a slew of new patent buyers have recently expanded the market for patents.⁷² Public auctions comprise the most visible trading platform, although the vast majority of transactions occur in private—either by direct sale, brokered private sale, or private auction.^{73, 74} Patent auctions facilitate transaction efficiency through changes in conventional governance structures.⁷⁵ Among other things, buyers and sellers are no longer directly connected. Thus, the transaction becomes “indirect,” which further facilitates the parties’ needs for discretion, especially in privateering scenarios. Auctions also implement standardized transaction structures through the use of templated legal frameworks (e.g., standardized due diligence procedures, templated contracts, and lump sum payments). Simple governance structures should be used with simple contractual relations with complex governance structures reserved for complex relations.⁷⁶ Thus, auctions employ at least semi-specific governance structures while trading highly specific assets as “spot market transactions.”⁷⁷

Public auction results, which provide the most visible IPR market transactions, show that operating companies have slowly overcome their traditional not-invented-here reluctance and have purchased patents in the marketplace, although operating companies generally appear more interested in selling patents than buying them.⁷⁸ Many

& Ron Laurie, *Meet the Middlemen*, INTELL. ASSET MGMT. MAG., Feb.-Mar. 2008 at 53, 55.

72. Lew Zaretski, *Rising Prices and Changing Strategies*, INTELL. ASSET MGMT. MAG., Feb.-Mar. 2008 at 61.

73. Tom Ewing, *Inside the World of Public Auctions*, INTELL. ASSET MGMT. MAG., July-Aug. 2010 at 63, 67 (approximating IV’s acquisition expenditures through public auction to be 5% of its total acquisition expenditures).

74. *Id.*

75. Frank Tietze, *Managing Technology Market Transactions—Can Auctions Facilitate Innovation?* Institute for Technology and Innovation Management (unpublished Ph.D. thesis, Hamburg University of Technology) (forthcoming 2011).

76. Oliver Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 J. LAW & ECON. 233, 239 (1979) (Williamson argues that governance costs are a function of asset specificity, and to a large extent the choice of any governance structure depends on the asset specificity, i.e., whether an asset is a commodity or highly specific. For example, complex structures used to govern a simple relation are likely to incur unneeded costs and a simple structure employed for a complex transaction invites strain.).

77. *Id.* at 233–61.

78. Ewing, *supra* note 73, at 64 (While operating companies have supplied half of the lots available in public auction, they have purchased only about 11% of the lots sold. This number likely underrepresents the share of total patents sold to practicing companies on

firms still remain hesitant to trade IP assets⁷⁹ partly due to a perception that selling IPRs in patent markets is an “unforgivable sin”⁸⁰ because the seller is “arm[ing] terrorists.”⁸¹

Competitive pressures have somewhat thawed these historical attitudes. Many corporations have essentially unused IPR assets that are nevertheless expensive to maintain.⁸² The IPR marketplace assists such companies in disposing of their surplus IP assets.⁸³ Of the patent lots offered for sale during Ocean Tomo’s auctions from Fall 2006 to Spring 2009, nearly half originated from operating companies,⁸⁴ and almost a quarter of them (125 out of 511) were offered by public companies.⁸⁵ Among the well-known operating companies, Sun listed the most lots at thirteen, followed by IBM at ten and AT&T at eight.⁸⁶ Other companies such as 3Com, Dow Chemical, Ford Motors, Kimberly-Clark, Motorola, Philips Electronics, and Siemens AG have also offered patents for sale.⁸⁷

The patent marketplace has also developed a buyer-side association with NPEs, or “patent trolls.”⁸⁸ At least six patent lots purchased at Ocean Tomo auctions have already been asserted in

the public and private market, as practicing companies may prefer to buy in the private market, where they have better control over the amount of information available to competitors and to the public.).

79. See Eckhard Lichtenthaler, *Organising the External Technology Exploitation Process: Current Practices and Future Challenges*, 27 INT’L J. TECH. MGMT. 255, 271 (2004); CHESBROUGH, *supra* note 31.

80. Epstein, *supra* note 62, at 95.

81. Matthew Fawcett & Jeremiah Chan, *March of the Trolls: Footsteps Getting Louder*, 13 INTELL. PROP. L. BULL. 1, 10, 19 (2008).

82. Chien, *supra* note 19, at 333.

83. Steven J. Hoffman, Chief Executive Officer of ThinkFire, Remarks at the Hearings Before the Federal Trade Commission, *The Evolving IP Marketplace: The Operation of IP Markets* (Apr. 17, 2009) 42–43, <http://www.ftc.gov/bc/workshops/ipmarketplace/apr17/transcript.pdf> (“[T]he number of large corporations that have started to consider selling their [patents] has dramatically increased over the last couple of years.”).

84. Ewing, *supra* note 73, at 63.

85. See Tom Ewing, *Advancept LLC, Publicly Auctioned Patent Buyers*, (2010), available at <http://avancept.com/iv-report-auction.html> (based on analysis of Ocean Tomo patent auctions from Spring 2006 to Spring 2009); see also Ocean Tomo auction catalogs from the Fall 2006 through Spring 2009.

86. Ewing, *supra* note 85, at App. 1.

87. *Id.*

88. Ewing, *supra* note 73, at 68. (Note: “patent trolls” are sometimes termed “patent extortionists,” “patent sharks,” “patent terrorists,” “patent pirates,” or basically, the word “patent” combined with any pejorative noun.).

patent litigation.⁸⁹ Patents by their nature are unique assets, and in many instances the odds that a patent satisfying some very specific characteristics will be waiting for a given corporate purchaser are slim.⁹⁰ On the other hand, aggressive NPEs can engage in litigation simply by purchasing patents to make money from licensing just need a patent involving any set of technical features that is arguably infringed by some corporate actor. Similarly, for many privateering sponsors, “close” is probably good enough for their privateering operations. Although the IPRs will be targeted for use against a particular company, there is no requirement that the privateer employ an IPR that is any closer to infringement than those found and asserted by aggressive NPEs, with Rule 11 of the Federal Rules of Civil Procedure being the limiting factor.⁹¹

The prices for patents sold at Ocean Tomo auctions offer a reasonable proxy for the cost of a typical NPE patent, and by extension, the price of a typical privateering patent. Of the available public sales data, the average U.S. patent sold to Intellectual Ventures, the largest single open market IP purchaser by far, was \$148,966.⁹² The average U.S. patent price to non-IV buyers was \$197,693.⁹³

89. Vtran Media Technologies, LLC spent \$990,000 on Lot 21 of the Fall 2006 auction and has subsequently sued nearly a dozen companies for infringement of the video on demand patents. Eleven Engineering Game Control LLC bought Lot 72A at the Spring 2009 patent auction and has filed infringement lawsuits against Nintendo, Sony, and Microsoft. Corveq LLC Imaging bought Lot 26 at the Fall 2008 auction for \$27,500 and has subsequently sued Adobe and Kodak for patent infringement. Quito Enterprises, LLC paid more than \$1 million for Lot 6 at the Spring 2008 auction and subsequently filed suit against some 13 companies for patent infringement. On Jan. 20, 2011, Pragmatus VOD LLC filed patent infringement lawsuits against major U.S. cable companies (e.g., Time Warner Cable, Cox Cable, Charter Communications, and Comcast) and their subsidiaries for infringement of US Patent 5,581,479 and US Patent 5,636,139. These patents were acquired from Intellectual Ventures (IV) sometime prior to the lawsuit. IV acquired these patents as part of a larger patent lot purchased at the Spring 2007 Ocean Tomo patent auction for \$3.025 million by IV's Lot 20 Acquisition Foundation shell company. IV itself recently filed three large patent infringement litigations involving several patents. IV acquired one of the patents in the litigations, US Patent 5,987,610, as part of Lot 28B at the Fall 2006 Ocean Tomo auction for \$770,000. *See* Ewing, *supra* note 73, at 63.

90. Ewing, *supra* note 73, at 66.

91. This topic is covered extensively in Ewing, *supra* note 8.

92. Ewing, *supra* note 85, at 5.

93. *Id.*

2.1.3 *The Rise of Aggressive Non-Practicing Entities*

The rise over the past decade of aggressive NPEs has likely prompted further refinements to the IPR exploitation techniques pioneered by the early adopters of the aggressive NPE business model.⁹⁴ The original NPE business model was pioneered by certain iconic figures⁹⁵ and modes of operation⁹⁶ but has likely over time shifted to more sophisticated drivers and motivations. As discussed below, NPEs, especially the so-called patent trolls, have possibly come to represent another face of the same actors who already control large portions of the economy.⁹⁷ The privateers, a subset of NPEs, essentially function as agents for operating companies attempting to achieve corporate goals and maximize shareholder value. Of course, the early adopters pioneered procedures and practices that may be less likely to change over time, (e.g., the preference for contingency fee arrangements) . . .⁹⁸

Similar to how NPEs use patent portfolios purchased in public auctions to sue others,⁹⁹ some independent inventors have moved towards vigorous enforcement of their own patents. Individual inventors often have extremely low levels of funding and thus typically partner with contingency-fee lawyers in their patent-

94. These refinements have consisted primarily of efficiency improvements coupled with greater investment capital.

95. Jerome Lemelson pioneered the licensing of NPE patents and subsequently licensed his 600 patents for more than \$1.5 billion to nearly a thousand companies. Lemelson also perfected the so-called “submarine” patent. *See, e.g., Don Costar, A Special Tribute to: Jerome Lemelson*, AM.’S INVENTOR ONLINE, <http://www.inventionconvention.com/americaninventor/dec97issue/section16.html#Friday> (last visited Oct. 10, 2011); *Jerome Lemelson’s Patents*, SMITHSONIAN LEMELSON CTR., http://invention.smithsonian.org/about/about_patents.aspx (last updated Oct. 21, 2009).

96. Mary Waldron, *The Patent Prosecution Pioneer: Intellectual Property Attorney Gerald Hosier*, LAW CROSSING, <http://www.lawcrossing.com/article/pdf/3445.pdf> (last visited Oct. 17, 2011) (Lemelson’s attorney, Gerald Hosier, pioneered the commonly used IP contingent-fee arrangement); *see also* Harold C. Wegner & Stephen B. Maebius, *Patent Flooding: America’s New Patent Challenge* 11 (2002) (describing the historic defensive patent pool created in the auto industry by Ford and General Motors), *available at* http://www.foley.com/files/tbl_s31Publications/FileUpload137/844/wegner_patentfloodingFTC.pdf.

97. Here, if nothing else, control of the economy refers to access to capital.

98. *See, e.g.,* Robert Garf, AMR Research Alert, *Best Practices Emerge from Early Adopters of Web-Based Workforce Management* (May 28, 2005), *available at* http://www.redprairie.com/uploadedFiles/ResourceCenter/Resources/IndustryReports/IR_AMRWFMBestPrac.pdf (suggesting that pioneers often develop practices that are copied and improved upon by their successors).

99. Ewing, *supra* note 73, at 68.

assertion campaigns.¹⁰⁰ Independent inventors, acting as NPEs, are among the most litigious actors in the patent system. According to one study, a single individual, Ron Katz, is an inventor on twenty of the top hundred most litigated patents.¹⁰¹ Other famous independent inventor-litigants include Jerome Lemelson¹⁰² and Robert Kearns.¹⁰³

Modern NPEs operate across a wide spectrum of business models. Some NPEs sue established companies for infringement of patents they have acquired, and others develop their own technology and seek to commercialize it. Mark Lemley and Nathan Myhrvold have attempted to develop a taxonomy of twelve types of patent holders, eleven of which are non-practicing.¹⁰⁴ The entities in this taxonomy are identified as: (1) Acquired patents, (2) University heritage, (3) Failed startup, (4) Corporate heritage, (5) Individual-inventor-started company, (6) University/Government/NGO, (7) Startup, pre-product, (8) Product company, (9) Individual, (10) Undetermined, (11) Industry consortium, and (12) IP subsidiary of product company.¹⁰⁵ Some NPEs are considered “trolls,” while others arguably should not be.¹⁰⁶ The differing profiles complicate characterizations about companies based on whether they do or do not practice their patents.¹⁰⁷ Unlike public companies, many NPEs are not burdened by the need to manage investor expectations or minimize disruption to a core business.¹⁰⁸

Reitzig found indications that the NPEs’ domain has become “more professional” over time, as one would expect for businesses that increasingly interact both adversely and cooperatively with large operating companies. NPEs have begun employing sustainable strategies that will likely survive currently debated or recently

100. Brenda Sandburg, *You May Not Have a Choice. Trolling for Dollars*, RECORDER, July 30, 2001, available at <http://www.phonetel.com/pdfs/LWTrolls.pdf> (Niro Scavone often has clients who cannot afford to bring lawsuits against well-financed corporations.).

101. See, e.g., John R. Allison et al., *Extreme Value or Trolls on Top? The Characteristics of the Most Litigated Patents*, 158 U. PA. L. REV. 1, 20 (2009).

102. *Id.*

103. See *Kearns v. Chrysler Corp.*, 32 F.3d 1541, 1543 (Fed. Cir. 1994) and John Seabrook, *The Flash of Genius*, NEW YORKER, Jan. 11, 1993, at 39.

104. Allison, *supra* note 101, at 10 tbl.1 & n.20.

105. *Id.* at 110.

106. Mark A. Lemley, *Are Universities Trolls?*, 18 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 611, 612 (2008).

107. *Id.*

108. Acacia, for example, is a rare public company among NPEs; IV by contrast is a private company.

implemented policy changes,¹⁰⁹ which hints at an increased level of professionalism for NPE firms.¹¹⁰ Firms that obtain patents for which changing to a non-infringing substitute technology would cause their infringing targets long-term switching costs are able to run a profitable licensing/litigation business even if short-term legal measures are no longer as easily available, and even if damage awards are reduced in the future.¹¹¹

2.1.4 *The Innovation System and the Emerging IPR Ecosystem*

The innovation system comprises the institutions and actors who influence and/or are involved in innovation processes. This system also deals with the question of how these parties join and interact over time to impact the flow of technology and information, as key components in the innovative process within the overall economy.¹¹² In the United States, the innovation system is not described or defined through the operation of a single policy or even necessarily a cohesive set of policies, but rather through the operation of a number of independent policies, agencies, and private actors. The private actors include not only large companies but individuals, small firms, research labs, and universities. Synergistic effects among the innovation system's participants turn ideas into processes, products, and services available in the market. IPRs related to innovation/invention, such as patents, comprise one critical component of the innovation system.

Over time, what might have once been a fairly simple arrangement within the innovation system has evolved into a complex IPR ecosystem.¹¹³ Competitive pressures have encouraged managers to explore innovations in the use of IP assets as competitive tools in

109. See Joachim Henkel and Markus Reitzig, *Patent Trolls, the Sustainability of "Locking-in-to-Extort" Strategies, and Implications for Innovating Firms* (2007), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=985602.

110. Reitzig, *supra* note 33, at 3.

111. *Id.*

112. The innovation system concept was widely elaborated upon and accepted during the 1990s. See NATIONAL INNOVATION SYSTEMS: A COMPARATIVE ANALYSIS, *supra* note 17, at 29; NATIONAL SYSTEMS OF INNOVATION. TOWARDS A THEORY OF INNOVATION AND INTERACTIVE LEARNING, *supra* note 17; EDQUIST, *supra* note 17; GRANSTRAND *supra* note 4; SECTORAL SYSTEMS OF INNOVATION—CONCEPTS, ISSUES AND ANALYSES OF SIX MAJOR SECTORS IN EUROPE, *supra* note 17.

113. See, e.g., Brian Kahin, *The Patent Ecosystem in IT: Business Practice and Arbitrage* (Dec. 5, 2008) (submission based on remarks before the Federal Trade Commission), available at <http://www.ftc.gov/bc/workshops/ipmarketplac/dec5/docs/bkahin2.pdf>.

their own right. These innovations produced the direct IP asset exploitation tools discussed above, including but not limited to patent licensing and assertion programs. The evolving IPR ecosystem features many kinds of entities, distinct business models, patent profiles, and patent strategies.¹¹⁴ The most noticeable contemporary players in this ecosystem are the large companies holding enormous portfolios and the aggressive NPEs. Both actors play significant roles in shaping the innovation system and interact continuously with other participants such as individual inventors, small companies, research labs and universities.

A single IPR strategy no longer directs the IPR ecosystem. Product companies that acquire patents only to protect their product/service sales revenue against competitors have generally diminished in most industrial sectors. A company may employ certain patents defensively to gain freedom to operate, but the same company may also sell other patents and employ still other patents in licensing efforts or infringement suits. Such companies cannot be described as exclusively practicing a defensive strategy. A company may enjoy IPR peace with certain of its competitors while also using IPRs to exploit the asymmetric advantages it enjoys over other companies. As will be shown later, IP privateering enables companies to exploit their IPRs against competitors with whom they are otherwise at peace while being able to plausibly deny that they have any control over the exploitation of those IPRs.

In the evolving patent ecosystem, a company's own patents are less helpful in preventing patent litigation, especially when a plaintiff exploits an asymmetry not covered by defendant's own portfolio, leaving the defendant unable to file a countersuit against the plaintiff. The greatest asymmetry possible occurs when the plaintiff does not produce any sort of product whatsoever (i.e., an NPE), leaving the defendant with few options for disincentivizing the plaintiff's litigation. As a result, defensive strategies have been re-conceptualized to include new tactics, including sharing information, prevention, disruption, and coordination, for securing freedom to operate.¹¹⁵

The history of the pro-patent era shows that corporate IPR behaviors are influenced by those of their peers.¹¹⁶ As Chien notes,

114. *Id.* at 4–5.

115. Chien, *supra* note 19, at 351.

116. *Id.* at 347–48.

industry leadership, demonstration effects, and licensing practices have led firms to file for thousands of patents during the pro-patent era.¹¹⁷ Similarly, the business of patent assertion has been catalyzed, not by any single legal development, but by the development and popularization of creative business models based on patent exploitation. The development of intellectual property management (IPM) has enabled patentees to learn from their peers skills related to how to patent, how much to patent, and how to use patents. These actors have observed and learned from each other's application filing, patent litigation, and licensing practices—and this provides yet another reason for companies to keep privateering under wraps—they don't want their competitors to learn about privateering and use it against them.

Of course, it makes sense for corporations to use IP assets to achieve competitive goals, but this does not mean that employment of these IPRs directly will necessarily provide the company with the greatest value, and it does not mean that the assets employed need to be the corporation's own IP assets.¹¹⁸ Companies may not always be in a position to openly exploit their IPRs directly against competitors. One characteristic of most forms of IP privateering is the inability of the sponsor to attain its corporate goals by employing IPRs openly.

The evolution of IP privateering among corporate IP managers conforms to North's observation that "institutions, organizations, the mental models of the actors interact to produce institutional change."¹¹⁹ North, like Chandler, argues that "as organizations evolved to take advantage of opportunities they became more productive . . . and gradually they also altered the institutional framework."¹²⁰ IP privateering similarly evolves corporate responses to IP strategy issues and provokes still further changes in the IP ecosystem. Among other things, the traditional notion that one must own an IPR in order to beneficially exploit it goes away. Privateering enables a company or an investor to benefit from an IP asset simply by motivating its owner to take actions in the marketplace whose

117. *Id.* at 303.

118. For example, IBM values its IPR portfolio at three times that of its licensing revenue because of the company's ability to leverage the portfolio.

119. Douglass C. North, *Institutional Change: A Framework Of Analysis*, in *INSTITUTIONAL CHANGE: THEORY AND EMPIRICAL FINDINGS* 35, 39 (Sven-Erik Sjöstrand, ed., 1993), available at <http://ecsocman.hse.ru/data/853/760/1216/9412001.pdf>.

120. ALFRED CHANDLER, *THE VISIBLE HAND: THE MANAGERIAL REVOLUTION IN AMERICAN BUSINESS* (1977).

results will provide benefits to the firm in the form of a changed competitive landscape. In accordance with North, organizational innovations enable the capture of more gains from trade (including portions of competitor revenue streams), which subsequently enable expansion of markets.¹²¹

2.2 IP Privateering Identified as a Species of Aggressive NPEs

In IP privateering, a sponsor incentivizes a privateer to make an IPR assertion against a target company. The privateer's rewards come directly from the IPR assertion while the sponsor's rewards are indirect and consequential to the IPR assertion. The typology Section below further explores the ways in which sponsors can consequentially benefit from the privateer's actions. The sponsor may develop the privateer's exploitation plan and outfit the privateer for carrying out that plan, but secrecy allows the privateer's sponsor to achieve objectives that would be difficult, if not impossible, to secure if the sponsor conducted the mission openly under its own colors. Camouflaging the sponsor's existence is usually critical for the success of an IP privateering operation.

Despite efforts to hide the existence of privateering, industry managers concede that it exists.¹²² Ruud Peters, CEO of Philips Intellectual Property & Standards, among others, confirms that it does.¹²³ "Privateering has probably been around for decades," said Peters.¹²⁴ "It lets the other guy do the work with no direct exposure to the company. Privateering takes place under a whole shade of arrangements."¹²⁵ The sponsor's needs to be insulated from liability arising from the privateering effort, as well as general discretion, correspond with the theorems for firm specialization and forward disintegration, or "outsourcing."¹²⁶

121. North, *supra* note 119, at 45 ("The continuous interaction between institutions and organizations in the economic setting of scarcity and hence competition is the key to institutional change.").

122. Several insiders, however, have spoken about privateering "off the record" only.

123. Author telephone interview with Ruud Peters on Oct. 28, 2010.

124. *Id.*

125. *Id.*

126. See, e.g., Gary Akehurst, *What Do We Really Know About Services?* 2 SERVICE BUS. 1 (2008); Tim Holcomb & Michael Hitt, *Toward a Model of Strategic Outsourcing*, 25 J. OPERATIONS MGMT. 464 (2007); Volker Mahnke, *The Process of Vertical Disintegration: An Evolutionary Perspective on Outsourcing*, 5 J. MGMT. & GOVERNANCE 353 (2001).

While investor privateering likely occurs over a slightly wider range of industries than corporate privateering, which tends to be focused on a specific competitive threat, some industries will attract IP privateering more than others. All forms of privateering are probably more prevalent in technology industries where products and technologies are reasonably interchangeable. Interchangeability suggests that a greater amount of IPRs are likely to overlap, which simplifies finding a suitable IPR for the privateer. Privateering is probably least likely to occur in the pharmaceutical industry because of the lower level of interchangeability, although one could expect to find it in the medical device industry. Privateering is a species of aggressive NPE litigation, so industries experiencing heavy NPE litigation probably encounter the most IP privateering. The vast majority of NPE litigation has arisen in the consumer electronics, software, and medical devices industries with very low levels of NPE litigation in the pharmaceutical industry. These industries are already rife with IP competition, so apart from the other qualities that make them suitable for NPE litigations, the managers in these industries have long since developed IPR strategies to their cache of competitive tools.

IP privateering per se does not run afoul of any U.S. statutory, common, or equitable laws. Certain specific IP privateering scenarios, as discussed in a related Article, may give rise to particular kinds of liability.¹²⁷ Whether the practice should give rise to some sort of cause of action or should be declared against public policy is another question whose answer somewhat depends on how one views IPRs and competition. Some may view IP privateering as just another competitive tool while still others may find that the practice provides further evidence of an IP system gone astray. As noted, this Article focuses primarily on U.S. law. The extent to which various privateering scenarios may be facilitated and/or circumscribed by non-U.S. law has not been investigated. However, a working hypothesis would be that certain privateering scenarios could likely be made to work in most jurisdictions.

2.2.1 NPEs, Privateers, and Markets

IP privateering aligns with theories suggesting that IPRs generally provide greater benefits to large firms.¹²⁸ For the most part,

127. See Ewing, *supra* note 8.

128. Reitzig, *supra* note 33, at 1.

only large firms and certain investors appear to participate in IP privateering. If one views NPEs, as “small firms,” then they challenge established theory which holds that technology markets benefit large firms and that IPRs exist primarily to support markets for technology.¹²⁹ This view becomes especially pronounced for aggressive NPEs that exploit information asymmetries in technology markets to gain IPR-based competitive advantages. Privateering provides a means for large companies that make products to target the revenues of other product-manufacturing companies while avoiding retaliation and reputational damage e.g., to profit in the wake of aggressive NPE operations.

Technology markets have been viewed as increasing the strategic space for firms, emphasizing a firm’s abilities for monitoring and seizing external technologies¹³⁰ to gain competitive advantage.¹³¹ Large firms should be particularly able to capitalize on their own capabilities and assets to seize such opportunities where the innovations are other than radical.¹³² Privateering, a new application of existing NPE techniques, accords with this analysis. The marketplace has allowed companies that do not develop technology or products to exploit their freedom to litigate. NPEs that do not have competing demands for management attention and are invulnerable to countersuit have advantages in patent litigation over practicing companies. These characteristics enable NPEs to more credibly threaten to exercise the rights conferred by a patent. Privateering provides a means by which large companies can indirectly benefit from these same advantages.

NPEs, especially the aggressive ones, that seek to generate returns on IPR-protected technology through either licensing and/or litigation upset theories that large firms benefit the most from IPRs.¹³³ NPEs typically realize their legally-based competitive advantages by “seizing” the production of large R&D-intensive manufacturers,

129. *Id.*

130. Ashish Arora, Andrea Fosfuri & Alfonso Gambardella, *Markets for Technology and Their Implications for Corporate Strategy* 419–51 (2001), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=204848.

131. See MARCO IANSITI, *TECHNOLOGY INTEGRATION: MAKING CRITICAL CHOICES IN A DYNAMIC WORLD* (1997).

132. See CONSTANTINOS C MARKIDES & PAUL A. GEROSKI, *FAST SECOND: HOW SMART COMPANIES BYPASS RADICAL INNOVATION TO ENTER NEW MARKETS* 5–6 (2004).

133. Reitzig, *supra* note 33, at 2.

thereby posing a threat to the latter.¹³⁴ Not surprisingly, NPEs challenge the established theoretical understanding of the functioning of technology markets¹³⁵—except when the NPEs, in the form of privateers, act on behalf of a corporate entity, and then the activity can be viewed in a nearly opposite light.

NPEs typically attack their targets by employing three different strategies: by threatening legal injunctions, pressing for damage awards, and creating long-term switching costs.¹³⁶ Contingent on the strategy, the type of patent an NPE deploys should differ. For example, a patent's technological sophistication¹³⁷ should matter if the NPE seeks to win large awards in an infringement litigation, or if the NPE wants to frustrate its target's attempt to invent around the NPE's patents.

For privateers, patent quality might not matter as much and switching costs do not need to be long term, if the goal is to create short-term pressure on the target by legal means.¹³⁸ Lerner's¹³⁹ study of the litigation of financial innovations, notably by NPEs, finds that aggressive NPE patents are highly cited, suggesting that the quality of NPEs' ammunition is relatively high. Not surprisingly, NPEs are predicted to continue to receive more venture capital, especially as their professionalism increases.¹⁴⁰

2.2.2 *Commercial Objectives of Indirect IPR Exploitation Sponsorship*

IP Privateers are a species of NPEs, just as classical privateers were a species of pirates. The privateer's own goals are easily understood—cash obtained through a litigation damage award or settlement in the manner of an aggressive NPE. For a privateer, the job of asserting an IPR against a target does not differ much whether the privateer is acting on his account or acting on behalf of a

134. See Markus Reitzig, et al., *On Sharks, Trolls, and Their Patent Prey—Unrealistic Damage Awards and Firms' Strategies of Being Infringed*, 36 RES. POL'Y 134 (2007); Joachim Henkel & Markus Reitzig, *Big Picture—Patent Sharks*, HARVARD BUS. REV. 86, 129–33 (2008).

135. See GRANSTRAND, *supra* note 30 for a discussion of corporate views on and strategies related to NPEs prior to the acceleration of NPE litigation from mid-2000s onward.

136. Henkel and Reitzig, *supra* note 134.

137. Technical sophistication generally offers some advantages in invalidation efforts.

138. Reitzig, *supra* note 33, at 4.

139. Henkel and Reitzig, *supra* note 134.

140. Reitzig, *supra* note 33, at 17.

sponsor.¹⁴¹ The sponsor's objective, like any commercial actor, is also monetary—albeit not immediately from the litigation, but rather from the changed competitive landscape wrought by the litigation. In essence, the sponsor's rewards are consequential rather than direct.

Through interactions between privateers who can exploit IP assets in accordance with their sponsor's plans, IP privateering has evolved “alternative patterns of behavior consistent with their newly perceived evaluation of costs and benefits.”¹⁴² A departure point for IP privateering is the recognition that one does not necessarily need to own an IP asset in order to employ it beneficially. Stated differently, and in accord with North's analysis, corporate IP managers and investors have compared the potential gains from re-contracting within the existing institutional framework to the potential gains from devoting resources to altering that framework.¹⁴³ The emergence of IP privateering represents a change in the competitive paradigms followed by firms informs this analysis. This is particularly true in the early adoption period when knowledge of privateering remains relatively low and countermeasures are unavailable or ineffective.

To understand IP privateering, one may need to recalibrate the sensitivity of the instrument that one uses to gauge commercial affairs. IP privateering begins to make sense when one recalibrates the currency unit from the millions at stake in a typical NPE litigation to the billions at stake among the world's major commercial actors. For a company with an annual turnover of several billion, the prospect of a court judgment involving a few million is more of an irritant than a major concern, a financial risk only and not a commercial threat or business risk. But while a given litigation's immediate costs may be inconsequential at the billion-level filter, the consequences of such litigations may implicate serious sums by any reckoning.

Assume, for example, that two large companies are competing fiercely for a large supply contract with a huge customer, with success uncertain for either company. Assume further that one company is perceived to be stronger in IP rights than its competitor, and assume that one of the customer's ultimate IP objectives is avoiding the

141. Nonetheless, one minor difference is often apparent. The privateer acts with greater restraint when acting on behalf of a sponsor who wants only a proscribed list of targets attacked.

142. Reitzig, *supra* note 33, at 17.

143. *Id.*

threat of an injunction for anything received from the supplier and integrated into the customer's products. In this scenario, either competitor could sponsor a privateer. Neither company would want to sue the other directly, since this could well irritate the prospective customer, causing more harm than good. Many large customers are justifiably horrified at the prospect of their suppliers suing each other, as one potential result could be an injunction knocking one or both them out of the ability to supply the customer with components. The company perceived as weak on IPRs could sponsor a privateer to knock down the other company's higher reputation. Conversely, the company perceived to be strong in IPRs could sponsor a privateer to underline its IPR strengths to the customer. The litigation here is used not to drive the other company out of business or even to cause it to redesign its products but instead to make obvious the competitor's IP vulnerabilities to the potential customer.

As another example, assume that an incumbent's market position is being etched away by an upstart competitor employing a replacement technology. Assume that their technologies are sufficiently different that neither company's patent portfolio has much relevance to the other company's products. This pattern would also be ideal for privateering. After all, neither competitor holds any IP rights that it could effectively use against the other since their respect portfolios focus on different technological paradigms. Employing patents against the other company in this example essentially requires obtaining patents from a third party anyway. Of course, the incumbent would likely prefer not to sue the upstart openly with a purchased IPR since this might signal to the market that the incumbent had exhausted other commercial solutions. The incumbent could use privateering as a method for smoothing out the replacement curves for the new technology, and if the company holding the replacement technology was small, then the larger incumbent might be able to employ various techniques for extending its own technology while it transitioned to the replacement technology. This scenario assumes that the incumbent company's resources greatly outstrip the upstart competitor, but if the upstart was sufficiently well funded, it could also sponsor privateering against the incumbent as a means for administering a *coup de la mort* to the old technology and possibly the incumbent as well.

Assume, for the sake of another example, that a group of companies have each assembled huge stockpiles of patents under a

defensive patenting strategy.¹⁴⁴ Each company views its patent armamentarium as an instrument of mutually assured destruction, e.g., if one company sues another for patent infringement, then retaliation is guaranteed. But what happens when one of the companies is sued for infringement by an entity that does not announce itself as being affiliated with one of the other companies in the group? Does the company sued retaliate, knowing that it might be viewed by its peers as “the one who started the war?” And who does it sue? Or does the company facing suit take its lumps in litigation, finding that its vast patent portfolio is essentially useless against the NPE that has sued it?¹⁴⁵ In terms of covering its tracks, what if the sponsoring company is also sued or listed among the announced licensees of the privateering plaintiff?¹⁴⁶

Some companies dominate their markets so completely that employing the company’s IPRs portfolio risks problems with the competition authorities.¹⁴⁷ Thus, the company’s IPRs cannot operate as fully as they would if the company held a smaller market position. When the market dominant company finds itself in a situation where another company would typically employ its own IPRs against a competitive threat, the market dominant company may have little choice but to sponsor a privateer to clear away the competitive threat. Of course, sponsorship of the privateer needs to be done in a manner that will not provoke the competition authorities.

A prospective sponsor may need to find the actual IPRs ultimately deployed by its privateer(s). The sponsor may want to undertake such a search well prior to making arrangements with the privateer. As discussed below, the United States presently enjoys a

144. DAVID C. MOWERY & NATHAN ROSENBERG, *PATHS OF INNOVATION: TECHNOLOGICAL CHANGE IN 20TH-CENTURY AMERICA* 17 (1998) (commenting that the Supreme Court’s 1908 decision in *Cont’l Paper Bag v. E. Paper Bag Co.*, 210 U.S. 405, 429 (1908), confirming that a patent owner need not practice a patent to sue for infringement of it, encouraged firms to patent defensively while also licensing out technology and patents).

145. A patent grant does not confer a positive right to practice an invention but only the right to exclude others from making, using, or selling the patented inventions, as claimed. *See* 35 U.S.C. § 287 (2006). *But see* Fed. Trade Comm’n, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy* 33 (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf> (“Defensive patenting is primarily motivated by a desire to ensure freedom to operate and includes the use of patents as bargaining chips in cross-licensing negotiations.”).

146. The result of this covert action is that the sponsor ‘simply moves funds from one pocket to the other minus a small transaction fee, i.e., the sponsor’s licensing costs to the privateer.

147. IBM is possibly one example in the U.S. and even more so in Europe.

patent oversupply and a variety of sophisticated tools are nowadays available that greatly simplify the task of finding useful third-party patents. If the sponsor needs to help the privateer acquire the IPRs to be asserted, then the sponsor should consider whether the newly acquired patents will transfer to an entity controlled by the privateer or whether they should stay with the third party who presently owns them but under the control of the privateer. One can imagine environmental factors (stealth considerations) that would suggest keeping the newly acquired patents in the hands of a third party.

For some corporate sponsors, privateering may even be cheaper than buying and asserting patents directly. If the party owning the patents is agreeable, the costs of privateering could be lower because the sponsor need only spend enough money to motivate the patents' owner to sue the competitor. Hamstringing, distracting and embarrassing the competition is often the sponsor's goal, rather than collecting a large damages award. Because privateering is stealthy, the litigation could continue for a long time before the target realized, if ever, who sponsored the litigation. Thus, while one company is distracted, disrupted and embarrassed by the litigation, the other party has no corresponding problems and can focus on its business.

2.3 Methodology

The methodology here has focused on exploratory research, employing various techniques for probing the possible range of IP privateering activity. Once a greater data set of privateering cases becomes available, then much more sophisticated empirical analyses can be conducted. While pockets of information exist about particular privateering instances, no one seems to have previously noticed the commonalities among these cases or sought to explain them within a larger strategic paradigm. One hopes that as knowledge of the privateering strategy circulates that others will contribute new privateering instances that have not been previously known,¹⁴⁸ and once a richer set of data has been developed, then a more elaborate economic analysis can be performed.

As Granstrand has observed, law and economics often follow differing methodologies while attempting to find answers to common

148. Many of the managers and practitioners contacted for this research declined to participate on the grounds of confidentiality. As more information about the strategy becomes available, managers and practitioners are likely to become less concerned, albeit not unconcerned, with confidentiality.

problems.¹⁴⁹ Economics tends to focus on the aggregate while law tends to focus on specific instances. Thus, one discipline tends to start high and work downward while the other discipline starts small and works up. The IP field lends itself to hybrid approaches. Among other things, IP rights are legal rights that have significance only so long as they can be enforced in court while the motivations for using these rights are almost entirely economic. Thus, the hybrid nature of the IP field arises from its fundamental elements.

Given the exploratory nature of this research, it seems premature to develop new legal or economic theories. Turning to American legal realism, I would expect the legal system not to take the lead in shaping new laws related to IP privateering, but to rely upon the considered wisdom of others, at least as an initial strategy for dealing with privateering cases. Consequently, it is essential that more data related to privateering become available for subsequent rigorous economic analysis and thoughtful consideration. The asymmetries possible in privateering between the sponsor and the target appear to be a good first subject for analysis once additional data becomes available. As has been noted at various points in this Article, much of privateering aligns with existing economic theory related to the benefits of IP assets to large firms but in a way that may ultimately shed new light on aspects of open innovation at least with respect to IPRs.

Methodologies such as questionnaires and structured interviews are of questionable utility for this research because many IP managers are not yet aware of the strategy, and those IP managers who are aware of the strategy generally have an interest, and possibly a legal obligation, in not spreading information about it. First, an IP manager's knowledge would tend to have arisen from a privateering operation that his firm conducted and one still possibly not known by the target, hence the manager has everything to lose and nothing to gain by discussing the strategy. Second, most IP managers, especially those whose firms employ the strategy themselves, would prefer that no one else knows about it. One would not likely expect the IP manager for a major corporation to appear in a public forum, for example, and provide detailed instructions to other companies' IP managers on how to go about privateering. In a similar vein, it seems unlikely that a questionnaire or structured interview would have unearthed the funding sources behind Intellectual Ventures, which

149. See GRANSTRAND, *supra* note 4.

came to light in a recent court case, and has been included in Appendix 1. Consequently, the methodology of examining existing court litigations for nuggets of information, may in some situations serve as a robust data source.

Comparative case analysis has not been formally conducted because no cases have yet been found where the sponsor was revealed and faced counterclaims by the target.¹⁵⁰ Thus, in each of the known privateering cases the sponsor has achieved a consequential benefit, albeit to varying degrees. If privateering were to become more common as a strategy, then not only would there be more cases, there would also likely be greater diversity among cases, which lends itself to a comparative analysis. Similarly, if the raw investor data becomes available, then a great deal of analysis can be performed on investor-side IP privateering.

2.3.1 *Tracing the Evolution of Indirect IPR Exploitation*

IP privateering likely arose from a combination of several independent corporate practices in an organic manner somewhat resembling the evolution of a new virus from distinct parents.¹⁵¹ Geneticists use the term “F₁ Hybrid” for the first filial generation of a new plant or animal that results from a cross mating of different parental types. Because of the sponsors’ needs for secrecy, one could assume that knowledge of privateering has remained within a fairly closed population comprised of sponsors and their agents and possibly targets and their agents.¹⁵² Thus, if one knew the F₁ Hybrid for IP privateering, then one could track the spread of this strategy among a relatively small population of commercial actors in much the same way that geneticists and epidemiologists track the spread of a new disease.¹⁵³ One could imagine that knowledge of privateering among commercial actors has largely spread by word of mouth, with most recipients either having an express or implicit obligation of confidentiality. This approach would assume, of course, that

150. Somewhat excluding the *IMS* case, which was conducted for a relatively small amount of money by Intel.

151. Many of these likely causes are discussed Section 3.1, *infra*.

152. And among targets, only those targets who discovered that litigation against them had been sponsored. It is also possible that lawyers representing a target may come to know about privateering but under an “attorneys eyes only” discovery protective order that prevents the attorney from sharing the information freely with his client.

153. See, e.g., Joseph W. Foxell, Jr., *The Severe Acute Respiratory Syndrome Epidemic: Everything You Wanted to Know About SARS but Were Afraid to Ask*, 25 AM. FOREIGN POL’Y INT’L 247 (2003).

privateering did not arise concurrently among various independent actors.¹⁵⁴

Some commonalities have been observed among the IP privateering cases discussed herein. Many of the known privateering cases have involved executives who have worked together or have come from organizations that have privateered against competitors. As one might expect from a strategy largely held in secret, these commonalities relate to particular persons. The *IMS* case discussed below was conducted by Intel during Peter Detkin's tenure there. The *SCO* case strategy was arguably formulated by Microsoft during a time when Nathan Myhrvold and Ed Jung worked for the company as executives. Myhrvold, Jung, and Detkin were all co-founders of Intellectual Ventures. One could imagine that a fuller understanding of intersecting career paths might lead to the uncovering of further connections between corporations that have engaged in privateering. Micron, Microsoft, and IV share some of the same private practice counsel, and Micron's knowledge of privateering may have come from one of these shared attorneys. Similarly, Melissa Finocchio, the head of litigation at IV, is the former head of litigation at Micron. Thus, Micron is linked into this privateering group.

In any event, it does seem possible to track relationships among IP actors using a similar methodology to epidemiology when the number of cases is relatively low and appears to have constraints that would generally impede rapid growth of the strategy. For IP privateering, the factor that provides its greatest impediment to rapid growth has been the long-standing need for its sponsors to retain knowledge of the strategy in confidence. But these commonalities do not mean that the privateering strategy cannot grow significantly larger; one could hypothesize that like an epidemic, the number of cases could reach a tipping point where the strategy spreads rapidly among the population of IP actors. The environment favorable to the production of the IP privateering is known, regardless of whether the strategy arose from a single actor or among multiple independent actors. The factors contributing to the rise of privateering are: increasing IPR competition among companies, corporations' histories of achieving competitive goals indirectly via third parties, the conventional application of stealth in corporate IPR matters, the growth of the IPR markets, and the growth of various indirect IPR uses.

154. See Malcolm Gladwell, *In the Air, Who says big ideas are rare?*, NEW YORKER, May 12, 2008, http://www.newyorker.com/reporting/2008/05/12/080512fa_fact_gladwell.

2.3.2 *Electronic Detection of Indirect IPR Exploitation*

With sufficiently large computing resources, one might be able to detect many of the indirect IPR cases among U.S. IPR litigations. First, one would sort all the litigations by their cause of action and remove all the non-IP law cases. For the U.S., this would also mean examining state court cases related to trade secrets and common law trademark cases. These would seem to be unlikely cases for indirect IPR exploitation, but it is possible for just about any IP cause of action to serve the sponsor's purposes.¹⁵⁵

In the late 2000s, the share of all high-tech patent suits brought by NPEs had risen to 20% of the total number of infringement litigations.¹⁵⁶ For some product categories, the proportion of suits brought by aggressive NPEs as compared to all suits has been much higher.¹⁵⁷ Indirect IPR cases, including IP privateering cases, are a species of NPE litigations, so it is against this background that one would begin separating out the privateering cases from the litigations that were simply brought by unaffiliated NPEs to collect large sums of money and nothing more.

The pre-litigation behavior of patent plaintiffs has been examined to test the extent to which privateering could be detected electronically using various databases. This examination used U.S. patent plaintiffs having the LLC corporate form as a proxy for all potential privateering plaintiffs. The LLC is a nearly perfect corporate form for privateering, as most jurisdictions offer maximum privacy for businesses of this form. In this study, it has been assumed that a change in parent ownership recorded at the U.S. Patent and Trademark Office (USPTO) would likely represent a change of control, to some degree, over the asserted patents and possibly signal the presence of a sponsor.

From January 2008 until September 2010, some 448 companies with the LLC form filed one or more patent lawsuits against one or more defendants. Collectively, these plaintiffs sued nearly ten times more defendants. Some of these litigations were inapplicable for various reasons (e.g., false marking lawsuits seem unlikely to be

155. *SCO* was a copyright case.

156. Chien, *supra* note 19, at 1604.

157. *Panel on Developing Business Models: View From the Industry: Written adaptation of oral remarks delivered at the Federal Trade Commission Hearings on the Evolving IP Marketplace* (2005) (statement of Mallun Yen) (“[V]irtually all of the litigation activity has been with nonpracticing entities with no appreciable business of making or selling products or services.”).

privateering cases). This left a pool of some 431 plaintiffs. Of these, 169 plaintiffs (or 39.2%) had not recorded a new assignment in the 12 months prior to litigation, while 262 (or 60.8%) had recorded an assignment transaction in the twelve months prior to litigation.

Of course, one can assume that only a fraction of the 262 patent plaintiffs showing ownership changes represented indirect IPR cases, and still fewer of these indirect IPR cases represented privateers. More common reasons for a pre-litigation change in assignment data would relate to factors such as litigation hygiene (e.g., making sure that the patent is owned by the party filing the lawsuit, which solves problems such as the one suffered by Lans in his litigation¹⁵⁸) and/or creating new legal structures to limit any potential litigation fallout (e.g., in the event that sanctions are obtained against the plaintiffs) and/or new structures to accommodate investors who are not privateers (e.g., investors who just want to make money from a litigation). The 262 plaintiffs also include companies owned by professional NPE organizations, such as Acacia's subsidiaries, which accounted for 35 different plaintiffs.

But the ranks of the 262 plaintiffs contain ample room for indirect IPR applications, including privateers. In about 5% of the cases, the patents came directly, or nearly directly, from an operating company. The Round Rock litigations provide an example of this sort of privateering. These cases represent the least stealthy flavor of privateering, as previously discussed.

Sifting the remaining cases into pure NPE assertions versus stealthy privateers would comprise a major undertaking. The corporate records for each of these 262 plaintiffs could be further examined to determine precisely who were their managers and owners. This would entail some expense as many state corporation offices do not provide this information free of charge.¹⁵⁹ Additionally, as previously noted, in many states it is possible for the manager of an LLC to be another company. Thus, one might have to track down a significantly greater number of companies before finding the name of a real person. This person's name could then be checked against various employment and professional records to locate corporate

158. Lans, *infra* note 209.

159. Delaware, for example, charges \$20 per record for this information, see *Assessing Corporate Information*, STATE OF DELAWARE, <http://corp.delaware.gov/directweb.shtml> (last visited Oct. 23, 2011).

affiliations.¹⁶⁰ In some states the names of a real person need never appear in an LLC's records. One would also want to examine the litigation files for each of the cases to see what information was revealed in discovery that was not subject to a discovery protective order. One might even want to interview defense counsel in these cases to see what information they could share regarding the litigants' motivations. Examination of the motions filed in the *Picture Frame Media* case, for example, while known as a privateering case by IV, revealed previously unknown details regarding how many rights IV sometimes retains for itself when it sells a group of patents to a third party.¹⁶¹ Reviewing and assembling this information would be a monumental task, but its results would likely be very illuminating about the new era of highly capitalized and aggressive NPE firms, at least some of which are privateering for third parties.¹⁶²

In the end, and with an ample budget for expenses,¹⁶³ one would likely have a much better picture about which of the 262 cases involved indirect IPR usage by either plaintiffs or defendants, and from this group privateering cases could emerge. This approach would peel away the least stealthy privateering cases, but there would still be some privateering cases that would be extremely difficult to uncover, such as privateering cases that followed the pattern of the *Lans* case. Although the *Lans* case was likely not a privateering case, in *Lans* the IPR remained with its original owner, the case was litigated by contingency fee lawyers who had offered their services to *Lans*, and expenses were provided by a group of anonymous investors whose precise motivations were unknown to *Lans*. In such a scenario, one would have to find commonalities between the members of the investment group, which might be possible if one could uncover their names. This would be extremely difficult in the case of many LLCs given that there are few requirements to record the names of their owners in public forums. A litigation target could, of course, use various litigation discovery requests to uncover much of this information for a specific litigation. The extent to which this

160. Of course, in some states, it is possible to have an attorney make these filings, which has been the case with the *Webvention* cases discussed below.

161. The complete sales agreement was subject to a discovery protective order, but the motion itself described the sales agreement and provides one of the few publicly available descriptions of an IV patent sales agreement. IV is anecdotally known for using a highly restrictive confidentiality agreement.

162. Appendix 1 provides a list of some, but not all, of the investors in Intellectual Ventures.

163. A budget of \$50,000 for non-personnel expenses would likely be sufficient.

information could become public (or even shared with a client) would depend upon the operative discovery protective order issued by the judge in the case.

Chapter 3 – IP Privateering Varieties and Limitations on Their Employment

This Section explores the extent to which privateering could be employed and provides a typology for this strategy along with examples of its application. While each of these types could be practiced with varying degrees of success, some of them may be hypothetical for the moment. This Section begins with a discussion of the roots of privateering in contemporary corporate culture.

3.1 The Likely Roots of IP Privateering

The environment favorable to the production of the IP privateering is known, regardless of whether the strategy arose from a single actor or among multiple independent actors. The factors contributing to the rise of privateering are: increasing IPR competition among companies, corporations' histories of achieving competitive goals using third parties, the conventional application of stealth in corporate IPR matters, the growth of the IPR markets, and indirect uses of IPRs. The privateering strategy can be expected to become more common in the short term since these factors still predominate and since techniques for impeding the practice remain in their infancy.

The set of opportunities available to a company, and thus the kind of organizations that will arise, are constrained by the institutional framework,¹⁶⁴ which here comprises the complex IP ecosystem. The growth of IP markets has incrementally changed this institutional framework for companies in an analogous manner to the ways that a growing market enables business opportunities.¹⁶⁵ The opportunities provided by growing IP markets have incentivized managers and investors to develop new models that further facilitate the exploitation of IP assets.¹⁶⁶ IP privateering stands among these new models. Thus, managers and investors, acting entrepreneurially, have become a source of change.

164. North, *supra* note 121.

165. FRANK TIETZE, TECHNOLOGY MARKET INTERMEDIARIES AND INNOVATION (2011).

166. *Id.*

Companies have increasingly engaged in ever more complicated and competitive strategies. Over the years, these strategies have included sponsoring purportedly independent actors in activities ranging from sponsored research (e.g., the Tobacco Institute)¹⁶⁷ to public advocacy on the corporation's behalf.¹⁶⁸ The phrase "regulatory capture" is nearly 100 years old.¹⁶⁹ In short, companies, especially large ones, are accustomed to achieving their aims indirectly using third parties. Companies and governments have even worked together to develop believable narratives, often related to health and safety matters, as a competitive tool for impeding lower cost imports.¹⁷⁰ Much of the work of the WTO involves separating legitimate health and safety concerns from essentially fabricated ones.¹⁷¹

Companies employ stealth, especially in IPR matters,¹⁷² although one can never know the full extent of corporate stealth tactics. Corporations, for example, routinely hide the details of their IPR licensing activities and maintain large collections of trade secrets.¹⁷³ In IPR litigation, corporate patentees often use secrecy to increase

167. Tobacco Institute, Inc., the Council for Tobacco Research-U.S.A, Inc., and the Center for Indoor Air Research, Inc. were all closed as part of the *Master Settlement Agreement* between the National Association of Attorneys General and the major tobacco companies, 1998, 32, *available at* http://www.naag.org/backpages/naag/tobacco/msa/msa-pdf/MSA%20with%20Sig%20Pages%20and%20Exhibits.pdf/file_view.

168. See, e.g., Jill Richardson, *A List of Corporate Lobbying*, ORGANIC CONSUMERS ASSOCIATION, (2009), http://www.organicconsumers.org/articles/article_18394.cfm.

169. See WOODROW WILSON, *THE NEW FREEDOM: A CALL FOR THE EMANCIPATION OF THE GENEROUS ENERGIES OF A PEOPLE* (1913), *available at* http://en.wikisource.org/wiki/The_New_Freedom:_A_Call_for_the_Emanicipation_of_the_Generous_Energies_of_a_People ("Nevertheless, it is an intolerable thing that the government of the republic should have got so far out of the hands of the people; should have been captured by interests which are special and not general.").

170. See LORI WALLACH, PATRICK WOODALL & RALPH NADER, *WHOSE TRADE ORGANIZATION?: A COMPREHENSIVE GUIDE TO THE WORLD TRADE ORGANIZATION*, (2004) (The Authors see the WTO as reducing national health and safety regulations and focus less on the trade barriers.).

171. *Id.*; see also *Technical Barriers to Trade*, WORLD TRADE ORGANIZATION, <http://tbims.wto.org/> (last visited Oct. 23, 2011).

172. Ewing, *supra* note 73, at 69 (Patent transactions in the marketplace, in contrast, are often kept secret.).

173. *Id.* ("CFOs nervously roll IP licensing expenses into the costs of goods produced to avoid any public slip. Miniature versions of actual sales documents are publicly recorded to thwart greater disclosure. Creating a limited liability company to hold IP assets provides still greater uncertainty.").

“hold-up,” a term that refers to inflation in the patentee’s bargaining power due to uninformed choices made by the accused infringer.¹⁷⁴

The *IMS* case provides a representative example of corporate stealth in operation.¹⁷⁵ In June 1998, TechSearch LLC, an NPE linked to the Niro Scavone law firm, sued Intel for patent infringement.¹⁷⁶ TechSearch had purchased the patent in suit from International Meta Systems Inc. (IMS), a small bankrupt company that had lost a competitive battle with Intel over a chip set that reportedly benefited Intel by some \$8 billion per year.¹⁷⁷

Using a shell company called Maelen Limited, Intel tried to buy the IMS patent by asking the bankruptcy court for an avoidance action against TechSearch that would return the patent to IMS.¹⁷⁸ An avoidance action allows a bankrupt estate to recover an asset if it can show that the purchaser paid less than a reasonably equivalent value.¹⁷⁹ Maelen even offered to pay the trustee’s administrative costs and fund the cost of litigating the avoidance action against TechSearch. Maelen further proposed that if the estate recovered the patent, it would be auctioned and Maelen would make a minimum bid of \$250,000 for the patent.¹⁸⁰

These steps were all taken without informing the court about Intel’s relationship with Maelen.¹⁸¹ Before the court acted, however, IMS learned that Maelen was a Cayman Island shell corporation beneficially owned by the Bank of America for Intel. Thus, Maelen was formed by Intel to keep its identity secret from TechSearch, the bankruptcy court and the creditors, and to maneuver the bankruptcy court into taking action that would undermine TechSearch’s ability to prosecute the patent infringement case against Intel. Maelen argued before the bankruptcy court that the patent was worth considerably more than TechSearch paid for it, while Intel in the infringement case

174. Chien, *supra* note 19, at 351.

175. Dean Takahashi, *Intel Takes Bold Steps To Outmaneuver Foe*, WALL ST. J., Apr. 16, 1999, available at <http://www.cascadesventures.com/press/intel.html>.

176. Techsearch LLC v. Intel Corp., No. 1:98-cv-03923 (N.D. Ill. 1998); see also Techsearch LLC v. Intel Corp. (C.D. Cal. 1998), No. 3:98-cv-03484-WHA (case later appealed on other grounds as Techsearch LLC v. Intel Corp., 286 F.3d 1360 (Fed. Cir. 2002)).

177. *Id.*; Takahashi, *supra* note 175.

178. In re Int’l Meta Sys., Inc., No. 1:98-bk-10782 (W.D. Tex. 2002).

179. See 35 U.S.C. § 547.

180. See Dean Takahashi, *Intel Legal Ploy Angers Judge*, ZDNET, Apr. 16, 1999, <http://www.zdnet.com/news/intel-legal-ploy-angers-judge/102090>.

181. *Id.*

had argued that the patent was invalid.¹⁸² The bankruptcy judge denied Maelen's motion and condemned Intel's actions. While Maelen provides an example where stealth failed for a large operating company, one could reasonably conclude that stealth has prevailed in other transactions. There is no reason to believe that the *IMS* case was the only time that an operating company used a shell company to camouflage its competitive objectives.¹⁸³

In the pro-IP era, companies have increasingly applied their IPRs as competitive tools for promotion of their business interests. Many companies have found that while the direct use of IPRs against competitors, e.g., via lawsuits, are sometimes costly and counterproductive, less overt uses of their IPRs are significantly more productive. IBM, for example, reckons that the annual value of its IP portfolio is three times that of its licensing revenue from the portfolio because of the leveraging of those IP assets in business deals.¹⁸⁴ The myriad of new strategic and tactical possibilities sparked by changes in the IP marketplace and aggressive NPEs has also undermined certain long-held beliefs and practices in the patent system. Among other things, large patent portfolios have been effectively defused as weapons, defensively or offensively, in lawsuits brought by aggressive NPEs. Once one begins to think about less traditional ways of employing IPRs, it doesn't take long before one begins exploring increasingly indirect strategies tailored for particular scenarios.

The patent marketplace represents yet another factor contributing to the rise of IP privateering. The increasing ease with which patents can be bought and sold has provoked some concern and fear.¹⁸⁵ As described earlier, companies have found a number of

182. *Id.*

183. For example, Intellectual Ventures has at least 1,500 shell companies. See Tom Ewing, *A Study of The Intellectual Ventures Portfolio In the United States: Patents & Applications*, 2nd Edition, Version 2.4 (May 2011) (Sample Report), at 7 (downloadable from <http://www.avancept.com/Publications.html>).

184. IBM launched an aggressive and successful licensing campaign that brought in over \$1 billion in revenue annually by 2003. See MARSHALL PHELPS & DAVID KLINE, *BURNING THE SHIPS: INTELLECTUAL PROPERTY AND THE TRANSFORMATION OF MICROSOFT* 24–25 (2009); see also Chetan Sharma, *What Is Your Patent Portfolio Quotient (PPQ)?* 3, n.2 (2007), available at <http://www.chetansharma.com/What%20is%20your%20Patent%20Portfolio%20Quotient.pdf>.

185. See, e.g., *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 396 (2006) (Kennedy, J., concurring) ("In cases now arising, trial courts should bear in mind that in many instances the nature of the patent being enforced and the economic function of the patent holder present considerations quite unlike earlier cases. An industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees. For these firms, an injunction, and the potentially

ways to monetize patent portfolios initially developed for defensive purposes. American Express provides an example of the IP ecosystem in transition. The company developed a defensive program in response to business patent lawsuits filed after the *State Street* decision in 1998.¹⁸⁶ After initially protecting its IP assets defensively, the company ultimately opted to realize value from its portfolio directly.¹⁸⁷ These activities proved so lucrative that patent enforcement grew into a full line of business with its own profit and loss statement.¹⁸⁸ Similarly, the Xerox Corporation formed the Xerox IP Operations business line in 1998 to develop an active patent licensing program based on the company's patent assets.¹⁸⁹ Likewise, Lucent, prior to the company's acquisition by Alcatel, licensed patents to recoup the company's R&D investments.¹⁹⁰

The development of indirect IPR applications by firms has also likely served as a contributing factor to the development of privateering. Operating companies have learned that they can purchase patents in the IP marketplace to fulfill various strategic needs. When an operating company is sued by another operating company, it may defend itself by buying patents from the marketplace that it can then use in a countersuit.¹⁹¹ One of the conventional reasons for having a defensive portfolio is to provide the portfolio's owner with a means for retaliation if it is sued. However, if the defendant holds no patents relevant to the plaintiff's business, the defendant may be able to find something useful in the patent marketplace. Several companies have successfully used this tactic to

serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent.”).

186. *Evolving IP Marketplace*, *supra* note 62, at 38 (statement of Tracey R. Thomas, Chief IP Strategist and License Negotiator, American Express Co.); *See e.g.*, *State St. Bank & Trust Co. v. Signature Fin. Grp.*, 149 F.3d 1368, 1369 (Fed. Cir. 1998).

187. *Id.*

188. *Id.*

189. KEVIN G. RIVETTE & DAVID KLINE, REMBRANDTS IN THE ATTIC: UNLOCKING THE HIDDEN VALUE OF PATENTS, 59–60 (1999).

190. *See* Rubenstein, *supra* note 44. Other companies have formed ventures to enforce their patents. Sisvel, for example, is a company that licenses patents of the consumer electronics company Philips, among others. *See About Us: History*, SISVEL, <http://www.sisvel.com/english/aboutus/history>. U.S. Ethernet Innovations was formed to assert the patents of the 3Com Corporation. U.S. ETHERNET INNOVATIONS, <http://www.usethernetinnovations.com> (last visited Oct. 23, 2011). U.S. Ethernet sued 23 companies in 2009 and 2010, including Hewlett Packard (HP), Sony, and Toshiba, and was later acquired by HP. *Corporate Information: 3Com @ a Glance*, 3COM, http://www.3com.com/corpinfo/en_US/index.html (last visited Oct. 23, 2011).

191. Chien, *supra* note 19, at 344.

mitigate lawsuits brought against them. Intellectual Venture's Intellectual Ventures Video Preferences 3 LLC¹⁹² shell sold U.S. Patent 5,410,344 to Verizon. The '344 patent was immediately put to work by Verizon in the form of a counterclaim against TiVo in an infringement lawsuit that was originally initiated by TiVo.¹⁹³ Vlingo represents another customer in what Intellectual Ventures calls its "IP for Defense"¹⁹⁴ program. Nuance Communications sued Vlingo for infringement. At the time of the lawsuit, Vlingo's portfolio contained mostly pending applications.¹⁹⁵ Thus, Vlingo owned no patents rights that could be used in a countersuit. Vlingo bought seven patents from Intellectual Ventures and used five of them to sue Nuance.¹⁹⁶

In *Hewlett-Packard v. Acer, Inc.*, Hewlett Packard filed an infringement suit against Acer in March 2007.¹⁹⁷ Acer, a Taiwanese company, subsequently bought several patents from the Industrial Technology Research Institute,¹⁹⁸ a Taiwanese research

192. 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* Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "patent number" field for U.S. Patent No. "5410344") (last visited Oct. 23, 2011).

193. 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 Feb. 24, 2010, and Verizon asserts 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 Commc'n, Inc.*, No. 2:09-cv-257-DF (E.D. Tex. 2009); *see also* USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field for "Services Corp") (results show no patents assigned to "Services Corp") (last visited Oct. 23, 2011).

194. *See Value-Added Solutions (VAS) Overview*, INTELLECTUAL VENTURES, http://www.intellectualventures.com/Libraries/General/VAS_Overview_Data_Sheet.sflb.ashx (last visited Nov. 7, 2011.).

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

196. Intellectual Ventures Mobilcomm 1 LLC sold US Patent 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* USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (enter "5680388" in the "patent field") (last visited Oct. 23, 2011).

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

198. *See* USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "patent number" field for U.S. No. Patents "5977626," "6188132,"

organization,¹⁹⁹ and then asserted the patents in a countersuit against HP.²⁰⁰ The lawsuit was settled by mid-2008.²⁰¹ In *Matsushita v. Samsung*, Samsung defended itself in a patent infringement case by buying patents and then using them in a countersuit against Matsushita.²⁰² Samsung bought US Patent 5,481,693 from SonicBlue, Inc.²⁰³ several months before SonicBlue filed for Chapter 11 bankruptcy protection.²⁰⁴ Over the course of the litigation, Samsung also filed counterclaims related to patents that it had previously obtained from a German government agency.²⁰⁵

In summary, IP privateering did not arise spontaneously but developed as a natural evolution from a combination of various long-term trends and conventional practices. The initial privateering case has not been identified but its identity would be helpful in tracing later privateering cases since secrecy has likely kept the knowledge of privateering to a relatively small set of managers and intermediaries.

3.2 IP Privateering Typology: Characteristics and Technique

The forms of privateering may be organized into a typology based upon a number of primary traits. The table below provides some key characteristics for IP privateering and also provides the range of possibilities for these characteristics. These characteristics are discussed in detail below this summary table.

“6788257,” and “6280021”) (last visited Oct. 23, 2011) (results show execution dates to Acer in September and July of 2007).

199. Industrial Technology Research Institute (ITRI), *What is IDTRI*, <http://www.itri.org.tw/eng/about/article.asp?RootNodeId=010&NodeId=0101> (last visited Oct. 23, 2011).

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

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

202. Brief of Plaintiff at 5, *Matsushita v. Samsung*, No. 02-336, 2005 U.S. Dist. Ct. Motions LEXIS 32374 (D.N.J. 2005).

203. See USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in “patent number” field for U.S. No. Patent “5481693,”) (last visited Oct. 23, 2011) (results show transfer to Samsung from SonicBlue on Nov. 14, 2002).

204. 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>.

205. See USPTO Assignments, <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.) (last visited Oct. 23, 2011).

No.	Privateering Variables	Variable Possibilities
1.	Sponsor	Operating Company, Investor, Hybrid
2.	Discretion Level	High, Moderate, Low
3.	Indirect Monetization Focus	Monetization via: (a) Change in Valuation/Stock Price (b) Change in Legal Infrastructure (c) Change in Technology Adoption Rate (d) Change in Business Innovation Adoption Rate (e) Change in Business Relationships (f) Licensing of a Larger IPR collection not involved in the privateering operation
4.	Privateer's Knowledge of Sponsor	Known to Privateer, Unknown to Privateer
5.	Sponsor's Control Level Over Privateer	Controlled, Uncontrolled
6.	Privateer Corporate Structure	Sole owner, Investor, Debtor
7.	Profit Sharing Structure	None, Flat, Percentage, Debt Repayment

3.2.1 Variable: the Sponsor Types

Privateering requires a “sponsor.” For IP privateering, the sponsors may be operating companies and/or investors. Hybrid arrangements are possible, especially where needed financing levels exceed the amounts that a given operating company is willing to provide and/or when the operating company’s needs for discretion are extremely high.

3.2.2 Variable: Discretion Levels

“Discretion” is the essence of IP privateering, although different sponsors may have differing needs for discretion. The sponsor’s needs for discretion with respect to the public may range from extremely high to moderately low. In a few situations, the sponsor may even “hint” at its involvement as a signal for altering the behavior of other competitors. The sponsor’s needs for discretion could be expressed as a real number, but is shown here in three integer levels: high, moderate, and low.

In a less secretive case, for example, the sponsor can sell some of its own IP rights to a third party who then uses those IP assets against the sponsor’s competitors. The lawsuit will be brought under the name of the third party, and the sponsor may retain no legal title to

the IP rights. Of course, the sponsor could possibly retain some interest in the litigation by contract.²⁰⁶ In the case of patents, the sponsor might even provide the new owner with helpful items such as patent claim charts related to prospective targets.

In a more secretive case with respect to the public,²⁰⁷ the sponsor might conduct its own search for the perfect third-party patent to use against a competitor and then provide the seed money for the litigation, possibly without even buying the patent. The sponsor could help purchase the patent from its current owner and provide it to a trusted third party. In an even simpler case, the sponsor merely motivates the IPR's present owner to commence litigation against various targets. This last approach is not only the stealthiest, but also the cheapest. The sponsor could likely motivate the patent owner by payment of a fee or bounty, especially since the patent owner should collect additional funds from the target either as a damages award or litigation settlement.

3.2.3 Variable: Indirect Monetization Goals

"Indirect monetization" comprises another essential characteristic of IP privateering. In an indirect monetization, the privateer's litigation will indirectly benefit the sponsor in some way monetarily. Applicable indirect monetization goals comprise: diminishment (temporary or otherwise) of a target company's valuation; change (positive or negative) in the stock price of a public company target; change (positive or negative) in the adoption rate for a new technology; change in the business relationships between two or more parties, as a driver for larger licensing arrangements; and/or a change in the legal infrastructure. An intended indirect benefit of the *IMS* case discussed above was a reduction in litigation and potential settlement costs in a case related to an \$8 billion competitive battle in exchange for a \$250,000 purchase. The examples provided below offer further details regarding indirect monetization.

3.2.4 Variable: the Privateer's Operational Knowledge

The privateer's "knowledge" regarding the identity of the sponsor provides another characteristic. The levels of discretion listed above pertain to the general public. A separate characteristic is how much the privateer itself knows about the sponsor and its

206. For many privateering operations, the sponsor can achieve its aims without receiving any financial return directly from the litigation.

207. And the target.

motives. The privateer does not necessarily need to know the identity of the sponsor, and the sponsor has an extra layer of security when even the privateer does not know who has sponsored the privateer or why.

Patent litigants do not necessarily know who has financed their litigation. Assume that a group of contingency fee lawyers approach a patent owner and offer their services to someone who is not undertaking his own licensing or assertion campaign. Many patent owners would likely jump at this opportunity. Of course, there are still high costs for bringing a case, even with contingency fee cases.²⁰⁸ Assume further that the lawyers who approach the patent owner also explain that they will absorb the litigation costs, but do not explain how.

In 1997 Swedish inventor Håkan Lans sued nine major electronics companies alleging infringement of a soon-to-expire computer-related patent, US 4,303,986.²⁰⁹ The litigation went spectacularly awry and Lans was ultimately held personally responsible for the attorneys' fees for two of the electronics companies.²¹⁰

In subsequent malpractice litigation, Lans claimed that the idea for litigating the patents did not come from him, but that he had been approached by third parties about the possibility of exploiting his patent.²¹¹ He further claimed that the lawsuit was financed by a group

208. Litigation costs in corporate patent cases can run into the millions, but NPEs typically strive to keep litigation costs low. Among other things, settlements and damage awards comprise their only revenue sources, but even for these companies, the costs can still amount to several hundred thousand dollars. *See, e.g., Contingency Fee Patent Litigation*, GOLDSTEIN & VOWELL LLP ("Patent cases often cost hundreds of thousands of dollars in out of pocket case expenses and court costs"), available at <http://www.gviplaw.com/Practice-Areas/Contingency-Fee-Patent-Litigation.aspx> (last visited Oct. 23, 2011).

209. *See Lans v. Gateway 2000, Inc.*, No. 97-2523 (D.D.C. 1997) (summary judgment appeal heard as *Lans v. Digital Equip. Corp.*, 252 F.3d 1320, (Fed. Cir. 2001)).

210. Much of privateering is based on escaping liability due to legal formalisms. Lans' case highlights this point. Lans' company Uniboard and not Lans was found to own the patent, which was enough for the case to not satisfy the formal requirements for standing to sue—even though Lans' company shared the same corporate identification number as Lans' Swedish social security identification, and only existed as a Swedish company in the first place to satisfy Swedish government regulations related to self-employment. By the time Lans explained this to the court, he had essentially run out of time. *See id.* at 1326.

211. *See Lans v. Adduci, Mastriani & Schaumberg, LLP.*, No. 1:02-cv-02165-RBW (D.D.C. 2002). Note: I served on a panel established by Vinnova, the Swedish innovation agency, to investigate the *Lans* case on behalf of the Swedish government since Lans was a Swedish citizen who was believed to have been mistreated by the U.S. legal system. Privateering, per se, was not explored in the investigation, but there were frequent

known as “the ‘986 Partners,” and that he did not otherwise know their identities.²¹² This malpractice litigation is still ongoing and privateering has not been specifically raised as an issue in the case. Nevertheless, the take-away for IP privateering is that one can theoretically arrange matters such that even the plaintiff does not know that another party has sponsored a litigation and arranged for payment of its expenses.

To add another layer of stealth, the sponsor could create a special purpose entity (SPE) in the form of a limited liability company (LLC) that itself funds the litigation. The sponsor could even attract other investors such that the LLC would not be a wholly owned subsidiary of the sponsor and thus avoid even more public reporting requirements, at least in some jurisdictions.²¹³ There are likely various SPEs that sponsors can employ to further facilitate their needs in a privateering operation.

3.2.5 *Variable: the Sponsor’s Control Over the Privateer*

The sponsor’s “level of control” over the privateer comprises another factor in privateering. In some instances, the sponsor can locate a patent whose qualities are so finely attuned to its goals that the needs for controlling the privateer may be greatly diminished. Such situations obviously increase the sponsor’s level of obscurity. Likewise, there are instances when the sponsor trusts the management of the privateer sufficiently that lower levels of control can be applied. In all other cases, the sponsor may want or need some level of control over the privateer.

3.2.6 *Variable: the Privateer’s Corporate Structure*

The privateer’s “corporate ownership structure” comprises yet another characteristic and relates to the corporate form of the SPE used by the sponsor and the privateer to hold the IPRs. The sponsor may control the privateer by virtue of being an investor in the privateering SPE and/or the sponsor may control the privateer by virtue of being the privateer’s creditor.

The privateer may be the sole owner of the SPE that attacks a given target on behalf of the sponsor. Sole ownership here can mean something beyond legal ownership; it can also mean that the sponsor

accusations that something in the case was amiss. The Vinnova panel made no formal recommendations to the prime minister.

212. *Id.*

213. Ownership structures are discussed further in Ewing, *supra* note 8.

has no potential means for controlling the privateer beyond mutual self-interest. Such relationships are built on trust and/or the sponsor already holding all the rights (e.g., a license²¹⁴) that it would ever need should the privateer engage in a different behavior than that preferred and anticipated by the sponsor.

In other embodiments, the sponsor maintains some mechanism for controlling the privateer. It has been observed that in many instances, the IPRs used for privateering are legally owned by one LLC that is in turn owned/controlled/managed by another LLC.²¹⁵ In such instances, the sponsor could let the privateer serve a managerial role in the company that owned the IPR, while retaining for itself a managerial role in the company that owned a controlling interest in the IPR holding company.

A privateer need not necessarily be an NPE. But an operating company that acted as a privateer would put itself at risk of a countersuit by the target. Of course, where the plaintiff and the defendant operate in different industries or are otherwise dissimilar, then the privateer could be an operating company.

3.2.7 Variable: Profit Sharing Structure

The sponsor and the privateer may establish a “profit sharing structure” related to the privateer’s activities. For example, the sponsor and the privateer may have arrangements for sharing licensing royalties and litigation damages and settlements. In some instances, the sponsor will receive none of the privateer’s rewards while in other cases, the sponsor may receive a percentage of the rewards. In still other cases, the sponsor’s rewards will take the form of a debt repayment from the privateer.

3.3 Privateering Examples

This Section provides further examples of IP privateering in operation and further illustrates the forms of indirect monetization possible through privateering. Although this Section does not detail every logical combination from the table above, the Section aims to provide enough examples to give the reader a feel for the power of privateering.

The example of IP privateering in the case of two companies competing for a large supply contract has already been provided.

214. A broad nonexclusive license that covered the sponsor’s customers and subsidiaries would be sufficient in many cases.

215. Ownership structures are discussed further in Ewing, *supra* note 8.

One twist on the competing suppliers example above comprises a new potential supplier using privateering as a way to nudge into an existing supply chain relationship by pointing out IP vulnerabilities of existing suppliers. The example of an incumbent who employs privateering as a means for smoothing out the technology replacement curve has also been provided. A further example of using privateering as a means for smoothing out a technology's transition to a new business model is provided below. Finally, the example of a company sponsoring a privateering action to circumvent anticompetitive laws has also previously been provided. This form of privateering might be employed more often in jurisdictions with strong anticompetitive laws and regulations, such as in Europe rather than the US, which could be perceived as having relatively weaker anticompetitive laws.²¹⁶ A somewhat related use of privateering discussed below involves changing IP laws to make them more favorable to the sponsor's competitive situation.

3.3.1 Operating Company Objective: Change in Technology Adoption Rate

This privateering scenario applies both to efforts to change an adoption rate related to a new technology as well as the adoption rate related to a new business model. The examples provided here relate specifically to a change in business models, but this approach could also be effective in terms of changing the adoption rate for a new technology.

The open source, or free software, business model had come to be perceived as a serious competitive threat to commercial software companies like Microsoft by the late 1990s.²¹⁷ To protect its \$32 billion in annual revenues,²¹⁸ Microsoft needed to develop a competitive solution to the threat posed by open source software.

216. See, e.g., Alexis Jacquemin, *Abuse of a Dominant Position and Exclusionary Practices: A European View*, in REVITALIZING ANTITRUST IN ITS SECOND CENTURY: ESSAYS ON LEGAL, ECONOMIC, AND POLITICAL POLICY 264–65 (Harry First, Eleanor Fox & Robert Pitofsky eds., 1991)

217. See, e.g., Andrew Leonard, *Linux At The Bat: Red Hat's Marc Ewing Steps Up To The Plate Against Microsoft In The Billion-Dollar Free-Software Ballgame*, SALON.COM (Oct. 4, 1999), http://www.salon.com/technology/view/1999/10/04/marc_ewing/ (quoting Red Hat software's co-founder Marc Ewing as saying that in 1998 Red Hat's Linux product was not a competitive threat to Microsoft's NT product but that by 1999 it was a competitive threat).

218. Microsoft 2003 Form 10K Annual Report to the Securities and Exchange Commission, at 11, available at <http://www.sec.gov/Archives/edgar/data/789019/000119312503045632/d10k.htm>).

Some eight years later, Microsoft had developed a slate of business solutions for coping with open source software²¹⁹ while nearly doubling its annual revenues to \$62 billion.²²⁰ As a proxy for business anxiety, Microsoft's 2003 annual report mentions "open source" 19 times while Microsoft's 2010 annual report mentions "open source" just 10 times.²²¹

Microsoft's Annual Report for 2003 described the competitive threat from Linux,²²² an open source operating system, as: Personal computer OEMs who preinstall third party operating systems may also license these firms' operating systems or Open Source software, especially offerings based on Linux. Variants of Unix run on a wide variety of computer platforms and have gained increasing acceptance as desktop operating systems, in part due to the increasing performance of standard hardware components at decreasing prices. The Linux open source operating system, which is also derived from Unix and is available without payment under a General Public License, has gained increasing acceptance as its feature set increasingly resembles the distinct and innovative features of Windows and as competitive pressures on personal computer OEMs to reduce costs continue to increase.²²³

Against this competitive backdrop, some commentators have suggested that Linux and various open source cooperatives were subjected to something akin to privateering. One example often cited is Microsoft's support of the SCO Group Inc. in its copyright battles

219. See, e.g., Simon Edwards, Microsoft Director of Corporate Affairs in Australia, in a letter to the Australian Government on Feb. 7, 2011, stated, "You may be aware that a substantial body of open source code development already occurs in the Microsoft software platform." The letter goes on to offer Microsoft's support in complying with an Australian government directive related to the use of open source software in government projects (available at http://blogs.msdn.com/cfs-file.ashx/_key/communityserver-components-postattachments/00-10-12-46-66/Letter-to-the-Special-Minister-of-State-re-the-Federal-Government_26002300_39_3B00_s-Open-Source-Policy.pdf); and see *Open Source Is Not a Business Model: How Vendors Generate Revenue from Open Source Software*, THE 451 GROUP, (2008), available at http://www.the451group.com/caos/caos_detail.php?icid=694.

220. Microsoft 2010 Form 10K Annual Report to the Securities and Exchange Commission, at 36, available at <http://www.sec.gov/Archives/edgar/data/789019/000119312510171791/d10k.htm>).

221. Compare Microsoft 2003 Form 10K, *supra* note 231 with Microsoft 2010 Form 10K, *supra* note 233. The PDF forms of the reports are easily searchable.

222. See *The Story of Linux: Commemorating 20 Years of the Linux Operating System*, LINUX FOUNDATION, available at <http://www.linuxfoundation.org/> (last visited Oct. 23, 2011).

223. Microsoft 2003 10K, *supra* note 218, at 7.

against IBM and Novell, relating to portions of Linux.²²⁴ In early 2003, Microsoft began paying some \$16.6 million to SCO for a Unix license, apparently becoming SCO's largest licensee.²²⁵ The funds appear to have been delivered shortly after the litigation against IBM began. Microsoft also referred SCO to BayStar Capital and the Royal Bank of Canada, which made arrangements for a more than \$50 million investment in SCO.²²⁶ "It was evident that Microsoft had an agenda," Lawrence Goldfarb, managing partner of BayStar, later told the *New York Times*.²²⁷ SCO apparently spent most of the cash on the litigations and eventually declared bankruptcy in September 2007. SCO did not prevail in these litigations.²²⁸ Of course, the success of a privateering operation is the extent to which the sponsor (not the privateer) achieves its objectives.

The SCO litigation obviously did not eliminate open source as a competitive threat to Microsoft but likely did provide consequential benefits to Microsoft. The question would be the degree to which the SCO litigation played a role in giving Microsoft additional time to develop a fuller competitive response to open source software and whether it helped the company better develop a narrative pointing out deficiencies in the open source business model.²²⁹ One could imagine the issues raised by the SCO litigation playing a part in long-term contracts negotiated by commercial vendors with computer manufacturers, businesses, and government agencies such as school districts. Among other things, an open source product would be unlikely to be in a position to provide meaningful indemnities in the

224. See *SCO Grp. v. Int'l Bus. Mach. Inc.*, No. 2:03-cv-00294-TC (D. Utah 2003) and *SCO Grp. v. Novell Inc.*, no 2:04-cv-00139-TS (D. Utah 2004).

225. John Foley, *Microsoft And SCO Group: What's So Secret?*, INFO. WK., Mar. 8, 2004, <http://www.informationweek.com/news/18311295>.

226. Steve Lohr, *Technology; Investor's Pullout Stirs Doubts About SCO Group*, N.Y. TIMES, Apr. 22, 2004, <http://www.nytimes.com/2004/04/22/business/technology-investor-s-pullout-stirs-doubts-about-sco-group.html>.

227. *Id.*

228. See *supra* note 224; see also *SCO v. Novell*, SCO available at <http://www.sco.com/scoip/lawsuits/novell/> (last visited Oct. 23, 2011) and *SCO v. IBM*, SCO, available at <http://www.sco.com/scoip/lawsuits/ibm/> (last visited Oct. 23, 2011)); U.S. Pacer shows both cases terminated in 2010 and 2007, respectively.

229. See, e.g., 451 GROUP, *supra* note 219, at 58 (commenting as early as 2008 that "Some open source purists will no doubt be dismayed that so much software distributed using open source licenses finds its way into commercially licensed products. More pragmatic observers will no doubt be encouraged by the widespread adoption of open source development and distribution principles. Either way, what our findings reinforce is that open source is a business tactic, not a business model.").

event of litigation like *SCO*. By comparison, Microsoft could point out that it indemnified its products and stood ready to support its customers in the event of difficulties, including legal ones, and would not leave them to fend for themselves.

As noted above, over the *SCO* time period, Microsoft's revenues doubled from some \$30 billion to over \$60 billion. Victories against the open source movement probably do not explain the whole of this revenue growth, but they likely account for a not insignificant piece of it. Similarly, *SCO* provided only a portion of the company's strategy for dealing with open source, and while more precise calculations would need to be done, it seems quite likely that *SCO* may have benefitted Microsoft by several billions.

Privateering may be employed to promote a new business model as well as to preserve an old one. RPX's business model involves buying actual or potential "trolling" patents and licensing them to its clients. The company aims to help its clients avoid the problems of IP infringement litigation for a fraction of the costs that the member companies would spend in licensing or litigating the IPRs themselves. The company has grown rapidly, with annual revenues now exceeding \$65 million, and held its initial public stock offering in May 2011.²³⁰ RPX clients typically pay a fixed membership fee (e.g., \$50 million) and are then free from IP litigation for any of the patents owned or acquired. RPX has signed up approximately seventy five technology companies as clients.

RPX was founded by John Amster and others in September 2008. Just prior to founding the company, Mr. Amster was IV's general manager of strategic acquisitions and vice president of licensing. RPX seems to practice the earliest business model advanced by IV, whether any real ties exist between the two companies is unclear. Some commentators originally suggested that IV itself would operate as a "patent defense fund," taking potential "trolling" patents off the market and offering its investors freedom from certain IP infringement suits.²³¹ Thus far, RPX has spent nearly \$250 million acquiring nearly 2,000 patents and controls them via several funds, such as RPX-LV Acquisition LLC and RPX-NW Acquisition LLC. RPX apparently also plans to operate a version of a catch-and-release program that will return the patents that it

230. Lynn Cowan, *Renren, RPX Corp. Lead U.S. IPO Slate While Boingo Falters*, WALL ST. J., May 4, 2011, <http://online.wsj.com/article/BT-CO-20110504-714117.html>.

231. On a subtler level, this is what IV has done.

acquires to other potentially litigious owners while reserving licenses for its members.²³²

Kaspersky Labs, a Russian computer company, was sued for patent infringement by IPAT, LLC along with more than twenty other companies in September 2008.²³³ During the course of the lawsuit, at least eleven of the defendants became RPX clients, in part, because RPX had licensed the patents in suit from IPAT. In Dec. 2009, Kaspersky received a message from RPX introducing itself as a “solution” to Kaspersky’s NPE litigation problems.²³⁴ Kaspersky also received several emails from RPX along similar lines, and requesting a three-year membership in RPX for \$160,000.²³⁵ The company continued receiving increasingly urgent emails from RPX, including one that implied that the IPAT litigation could only be terminated through RPX.²³⁶ Kaspersky eventually contacted the FBI and requested that they investigate RPX for alleged criminal conduct, including mail and wire fraud, as well as RICO violations.²³⁷

The FBI does not appear to have acted on Kaspersky’s request, and the extent to which RPX “collaborates” with NPEs, if at all, is not presently known. However, one could imagine that a sponsor of a new business model could actively encourage the very behaviors that the business was intended to curtail as a means for promoting the new business. Depending on the business model involved, the relationship between the sponsor and the privateer(s) could potentially even be a permanent one.

3.3.2 *Investor Objective: Outsourced Licensing*

Intellectual Ventures (IV),²³⁸ which holds at least the world’s fifth largest patent portfolio,²³⁹ has received some \$2 billion in licensing

232. Such a step not only increases the company’s revenue, but also solves a “free rider” problem in which nonmembers benefit from RPX’s patent acquisitions.

233. *Info. Prot. & Authentication of Tex., LLC v. Symantec Corp.*, No. 2:08-cv-00484-DF (E.D. Tex. 2008).

234. *See Patent Aggregator RPX Accused of Extortion, Racketeering & Wire Fraud*, GAMETIME IP (May 31, 2011), <http://gametimeip.com/2011/05/31/patent-aggregator-rpx-accused-of-extortion-racketeering-wire-fraud> (Kasperky’s letter to the FBI, reproduced on the GameTime IP blog.).

235. *Id.*

236. *Id.*

237. *Id.*

238. One could possibly speculate how IV itself is a privateering operation conducted by its corporate sponsors, but this possibility will not be further explored in this paper.

fees for its portfolio.²⁴⁰ Some portion of these licensing fees was possibly generated by privateering using small groups of formerly owned IPRs. IV has sold small portions of its portfolio, typically to third-party NPEs. Many of the patents sold by IV have ended up in litigations brought by their new acquirers. Patents formerly owned by apparent IV shells Viviana LLC,²⁴¹ Gisel Assets KG LLC,²⁴² Kwon Holdings Group LLC,²⁴³ S.F. IP Properties,²⁴⁴ Ferrara Ethereal LLC,²⁴⁵ and Mission Abstract Data LLC²⁴⁶ have been employed in patent infringement litigations respectively brought by Picture Frame Innovations LLC,²⁴⁷ Patent Harbor LLC,²⁴⁸ Oasis Research LLC,²⁴⁹ InMotion Imagery Technologies, LLC,²⁵⁰ Webvention LLC,²⁵¹ and Mission Abstract Data LLC.²⁵² These litigations have been brought

239. IV's funders include many practicing companies such as Microsoft, Intel, Sony, Apple, eBay, and Google. See, e.g., Ewing, *supra* note 183, at 7 and Nicholas Varchaver, *Who's Afraid of Nathan Myhrvold?*, FORTUNE, July 10, 2006, at 110, 112.

240. Joff Wild, *IV Revenues Hit \$2 Billion As Recent Deals Show Firm's Links With Other Major Market Players*, IAM blog, March 11, 2011, <http://www.iam-magazine.com/blog/Detail.aspx?g=03a44df3-787b-405e-9d5e-69136e93a5b3>.

241. See USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field using "Viviana") (last visited Oct. 23, 2011).

242. See USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field using "Gisel Assets") (last visited Oct. 23, 2011).

243. See USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field using "Kwon Holdings") (last visited Oct. 23, 2011).

244. See USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field using "S.F. IP Properties.").

245. See USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field using "Ferrara Ethereal") (last visited Oct. 23, 2011).

246. See USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field using "Mission Abstract" and subsequent assignment from Intellectual Ventures Audio Data LLC) (last visited Oct. 23, 2011). 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.

247. Picture Frame Innovations, LLC v. Eastman Kodak Co., No. 1:2009-cv-04888 (N.D. Ill. 2009).

248. See, e.g., Patent Harbor, LLC v. LG Elec., Inc., No. 6:2010-cv-00436 (E.D. Tex. 2010).

249. Oasis Research, LLC v. Adrive, LLC, No. 4:2010-cv-00435 (E.D. Tex. 2010).

250. See, e.g., InMotion Imagery Tech. v. JVC Am., Corp., No. 2:2010-cv-00474 (E.D. Tex. 2010).

251. See, e.g., Webvention LLC v. Adidas Am. Inc., No. 2:2010-cv-00410 (E.D. Tex. 2010).

252. See, e.g., Mission Abstract Data LLC v. Beasley Broad., No. 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

against companies such as Kodak, Hewlett Packard, Samsung, and CBS Radio. Don Merino, senior vice president of licensing at IV, said the sales were a logical step for IV and generally denied that the sales related to privateering.²⁵³ “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.²⁵⁴

Selling expiring assets makes perfect business sense, of course. Nevertheless, one could imagine that some of the defendants may have been led to view the litigations over one patent as a hint that they should consider taking a license to an even larger group of patents having a similar technical focus held by a third party. The patents being litigated are representative of a much larger portion of IV’s huge portfolio.²⁵⁵ In addition, IV also purportedly offers licenses to its portfolio on a true-up basis to its investors. The sales and subsequent litigations may also serve as a prod to certain investors to pay their true-up license fees, which would provide yet another monetization rationale for the privateering effort.

3.3.3 Operating Company Objective: Outsourced Licensing

Micron Technology recently sold about one quarter of its highly regarded patent portfolio to Round Rock Research, LLC.²⁵⁶ John Desmarais, a distinguished patent litigator, runs Round Rock.²⁵⁷ Micron has been circumspect about its relationship to Round Rock. The sale of 4,000-plus patents could be an event worth noting in quarterly or annual financial reports. However, Micron has yet to mention this sale, which has led to suspicion that the Round Rock patents are still tethered to Micron.²⁵⁸ By comparison, Micron sold

of 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.

253. Stuart Weinberg, *Intellectual Ventures Patent Divestitures Continue*, DOW JONES NEWSWIRES, Feb. 24, 2010, available at LexisNexis.

254. *Id.*

255. See, Ewing *supra* note 8.

256. Zaretzki, *supra* note 72, at 62; see also Carlyn Kolker, *Billion-Dollar Lawyer Desmarais Quits Firm to Troll for Patents*, BUS. WK. (June 1, 2010), <http://www.businessweek.com/news/2010-06-01/billion-dollar-lawyer-desmarais-quits-firm-to-troll-for-patents.html>.

257. *Id.*

258. See, e.g., Micron Technology, Annual Report (Form 10-K) 8 (Oct. 26, 2010) (Micron’s only allusion to profits from IPR sales has been: “In recent years, we have recovered some of our investment in technology through sales or license of intellectual

many of these same patent assets a few years ago to a shell company known as Keystone Technology Solutions LLC.²⁵⁹ Keystone shared the same address as Micron Technology.²⁶⁰ Just prior to the Round Rock sale, many of the Keystone patents quietly migrated back to Micron and then to Round Rock. Desmarais recently conceded that Round Rock was a privateer, adding, "I've been called worse."²⁶¹

Round Rock filed an infringement lawsuit against the HTC Corporation in October 2010 and completed several large licenses.²⁶² Round Rock's Rule 7.1 disclosure in the HTC litigation states that it has no parent corporation and that no publicly held corporation owns 10% or more of its stock.²⁶³ So, the precise relationship between Micron and Round Rock remains a mystery,²⁶⁴ although both Round Rock and Micron concluded large scale licensing arrangements with Samsung (\$280 million for Micron²⁶⁵) at roughly the same time. Unsubstantiated reports suggest that Round Rock has been financed by Gemas Capital, Inc., which itself has a relationship with IPValue, a company heavily funded by General Atlantic and Goldman Sachs.²⁶⁶ Thus, Micron's sale to Round Rock likely provided Micron not only with some monetary benefit in its own right, but also initiated a

property rights to joint venture partners and other third parties."), available at <http://www.sec.gov/Archives/edgar/data/723125/000072312510000174/q4fy2010.htm>.

259. See USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignee" field under "Keystone Technology") (last visited Oct. 23, 2011).

260. *Id.* Compare Keystone Technology Solutions' listed address with Micron Technologies' contact address on its website: <http://www.micron.com/contact.html>.

261. Comment made during the Developing NPE Market panel, IP Business Congress 2011, a conference held by Intellectual Asset Management (Jun. 20, 2011). A few minutes after making this comment, Desmarais declined to provide any details about the ownership of Oasis Research to NPR reporter Laura Sydell. *This American Life: When Patents Attack!*, Chicago Public Radio (Jul. 22, 2011), available at <http://www.thisamericanlife.org/radio-archives/episode/441/when-patents-attack>, 28:15.

262. Round Rock Research LLC. v. HTC Corp., No. 1:2010-cv-00840 (D. Del. 2010) (records indicate the parties settled the dispute on April 12, 2011).

263. *Id.*

264. By contrast, General Electric has made little secret of its relationship with CIF Licensing LLC, a wholly owned subsidiary that has brought 11 patent litigations against a far greater number of defendants. See e.g., *CIF Licensing d/b/a GE Licensing v. Agere Systems, Inc.*, No. 07-170-JJF (D. Del. 2010) and Phil Milford, *GE Licensing Wins \$7.6 Million Patent Award From LSI*, BLOOMBERG (Feb. 17, 2009), <http://www.bloomberg.com/apps/news?pid=conewsstory&sid=a48zmrkP.LxI>.

265. See Micron Technology, *supra* note 258.

266. See Joff Wild, *Rumour Has It That Round Rock's Micron Purchase Is Reaping Big Rewards—UPDATE*, IAM BLOG (Nov. 15, 2010), <http://www.iam-magazine.com/blog/detail.aspx?g=347b94b1-44b2-449d-8d7d-536f8c6470d5>.

privateering effort of some sort that has assisted in the monetization of the larger retained portions of Micron's portfolio.

3.3.4 *Hybrid Sponsorship Objective: Outsourced Licensing and Reduced Adoption Rate*

Heavy competition in the highly lucrative advanced mobile devices and smart phone market would seemingly make this area ripe for privateering.²⁶⁷ In short, it would not be surprising for companies in this area to use IP rights to further their competitive goals, but given the intensity of the competition, it would also not be surprising for companies to somewhat distance themselves from those IPR assertions. Lawsuits involving the market's smaller players could drain their meager resources, distract management and serve to make the defendant appear as a less than suitable supplier/partner to large telephone operators.

For example, MobileMedia Ideas LLC (MMI) is one of the companies on the list of 262 litigants discussed below whose IP rights were acquired just prior to litigation. MMI, which was formed in January 2010,²⁶⁸ sued Apple, HTC and Research In Motion in March 2010 for patent infringement related to smart phones.²⁶⁹ MMI's Rule 7.1 disclosure in the Apple lawsuit states that more than 10% of its stock is owned by MPEG-LA LLC, Nokia Corp and Sony Corp.²⁷⁰ MMI holds some 141 patents and applications, all of which were owned by either Nokia or Sony at the beginning of 2010.²⁷¹ MMI likely represents a less stealthy form of privateering but one that is nevertheless distanced from the original IPR owners. As another example, the ICom GmbH & Co. KG litigations in Europe also possibly represent another privateering effort. ICom, which

267. The \$4.5 billion acquisition of the former Nortel patent portfolio by Rockstar BidCo LLC, a consortium that included Apple, Microsoft, EMC, Sony, Ericsson and RIM, indicates the significance of IPRs in this field. Joff Wild, *Inside the Nortel patent auction - this is exactly what happened*, IAM BLOG (July 22, 2011), <http://www.iam-magazine.com/blog/Detail.aspx?g=fd52dac-7a09-4364-b526-d29147118b41>.

268. *Entity Details for MobileMedia Ideas LLC, Div. of Corps.*, DEL. DEP'T OF STATE, <http://www.corp.delaware.gov/> (follow "Entity Search" under "Services," then enter "mobilemedia" for "Entity Name" or "4761144" for "File Number," then click "Search" button, then follow "MOBILEMEDIA IDEAS LLC") (listing MMI's incorporation date as Jan. 4, 2010) (last visited Oct. 23, 2011).

269. See, e.g., *MobileMedia Ideas LLC v. HTC Corp.*, No. 2:2010-cv-00112 (E.D. Tex. 2010).

270. *Id.*

271. See USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignor" field for "Nokia" or "Sony") (last visited Oct. 23, 2011).

recently won a patent infringement case against Nokia,²⁷² is purportedly owned by German patent attorney Bernard Frohwitter²⁷³ but the financing behind ICom is less certain, as ICom has reportedly been linked to Robert Bosch GmbH.²⁷⁴

3.3.5 *Operating Company Objective: Change in the Law and/or Building Influence*

As an extreme example of privateering, assume that a large company would like to change some aspect of IP law in a particular jurisdiction, but has trouble finding enough other companies that concur with the proposed change to make a persuasive case to the legislature. As part of its public relations campaign, the large company could privateer against other companies using IP rights whose litigation would raise the same or similar issues as the aspect of IP law that the large company wants to change. As long as the other companies do not realize who has motivated these litigations, the large company should succeed in gathering allies for making the case to the legislature. The large company's privateering expenses may be substantially lower than the company's lobbying expenses, while yielding greater results.

Assume for example that you are an account executive for a specialized advertising, public relations, and lobbying firm. One of the firm's clients LargeCo has been sued many times for patent infringement in recent years. Assume further that it is widely rumored that the company has a research group that takes some of the better ideas produced by small companies and turns them into polished, highly saleable products without payment of licensing royalties. Many of LargeCo's recent settlements have involved lawsuits brought by the remnants of small companies that LargeCo has commercially defeated. LargeCo's general counsel tells you that the company has determined that if the United States had a compulsory licensing law written in exactly the same way as Chapter 6

272. Tarmo Virki, *Nokia Loses German Patent Case Against ICom*, REUTERS, Feb. 11, 2011, <http://www.reuters.com/article/2011/02/18/nokia-germany-idUSLDE71H0GW20110218>.

273. Joff Wild, *The IAM IP Personalities of 2010*, IAM BLOG (Dec. 23, 2010), <http://www.iam-magazine.com/blog/Detail.aspx?g=3c305628-e292-4253-9659-a8c5e9e3814b>.

274. Philippa Maister, *German Court Sees First Signs of European Patent Trolls*, IP L. & BUS., Oct. 02, 2008, <http://www.law.com/jsp/article.jsp?id=1202424954133>.

of the new Chinese IP law²⁷⁵ that the company's damages from these lawsuits would be halved, from \$400 million on average down to \$200 million. LargeCo's initial attempts to push a compulsory licensing law for unworked inventions met with strong resistance from groups of companies in two different sectors, as well as from some independent inventor associations. The general counsel wants to develop a plan to create momentum for adding something akin to Chapter 6 of the Chinese Patent law to the U.S. Patent Law.

One could imagine that LargeCo would be willing to spend several million in privateering expenses to help this effort. By comparison, Intellectual Ventures, excluding contributions made by its principals, has spent nearly \$4 million on lobbyists alone since 2005 in its efforts to bend proposed U.S. patent law changes to its liking, and IV is far from the biggest player in the patent reform effort.²⁷⁶ IV reportedly spent nearly \$800,000 for a single lobbyist alone.²⁷⁷ Of course, larger technology companies have spent far greater sums on lobbying efforts, although because of their size, it is not always quite so easy to tell how much was spent on what.²⁷⁸ In any event, spending a few million dollars in a privateering effort to underline other lobbying efforts would seemingly amount to a fairly small amount of money for many large companies.

Privateering could certainly play a role in a plan to garner support for a change in the law. In this hypothetical, the patents found would be ones whose litigation would raise the same issues that would suggest a compulsory licensing solution along the lines of Chapter 6 of the Chinese Patent Law. So long as the target companies did not understand who sponsored the litigations, then over time they would likely begin to agree with the sponsoring company's point in changing the law. Unlike lobbying expenses which cannot be recouped, the privateering sponsor might also receive some remuneration for his privateering efforts to change the law.

275. Patent Law of the People's Republic of China, as amended Dec. 27, 2008, available at http://www.sipo.gov.cn/sipo_English/laws/lawsregulations/201101/t20110119_566244.html.

276. For the years 2005–2010, see *Intellectual Ventures*, OPENSECRETS.ORG, available at <http://www.opensecrets.org/lobby/clientsum.php?year=2010&lname=Intellectual+Ventures+LLC&id=> (last visited Oct. 23, 2011).

277. See *Choate v. Intellectual Ventures*, No. 1:11-cv-00528-CKK, 11 (D.D.C. 2011).

278. See Arik Hesseldahl, *What Tech Companies Are Spending in Washington*, NEW ENTERPRISE, Dec. 23, 2010, available at <http://newenterprise.allthingsd.com/20101223/what-tech-companies-are-spending-in-washington/>.

In a similar vein, privateering could be used to build influence generally. An Intellectual Ventures related company called Mission Abstract Data LLC sued some 116 radio stations in March 2011.²⁷⁹ The patents are presently owned by a company called Digimedia Holdings LLC that was formed in Delaware in January 2011 a few weeks before IV sold the patents in suit. The business objectives behind the *Mission Abstract* case have not been made public; however, one could imagine a similarly situated actor using patent litigation as a tool for changing editorial policies and/or gaining influence. The radio stations might possibly find attractive a settlement offer that comprised simply “favorable coverage of topic X for 10 years” where X could be nearly any topic. If one brought enough infringement suits (using perhaps different patents and using different plaintiffs) against enough media outlets, one could ultimately find oneself with enormous control over the public dispensement of information about a given topic.²⁸⁰ If the settlements were confidential, then even other media outlets would not necessarily be aware of what had happened in the aggregate.²⁸¹

279. *Mission Abstract Data LLC v. Beasley Broad. Grp.*, No. 1:11-cv-00176-LPS (D. Del. 2011).

280. An effort to gain media influence might actually be occurring. The New York Times Company filed a declaratory judgment action against Webvention, LLC, which obtained its patents by merger with Intellectual Ventures’ Ferrara Ethereal LLC in Nov. 2009. See Assignment Records for “Ferrara Ethereal LLC,” available at <http://assignments.uspto.gov/assignments/?db=pat>. 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; see also Notice Of Dismissal Without Prejudice Against Webvention, *N.Y. Times Co. v. Webvention Holdings LLC*, No. 1:11-cv-00634-GMS (D. Del. 2011) (filed Aug. 17, 2011). 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. See *Patent Harbor, LLC v. Dreamworks Animation SKG, Inc.*, No. 6:11-cv-00229-LED (E.D. 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. However, five months after the case was filed DreamWorks Animation SKG, Inc., the lead defendant, was dismissed from the case essentially on the basis that it did not infringe in a motion jointly filed with the plaintiffs. It is perhaps not coincidental that Myhrvold is a board member of DreamWorks Animation SKG, Inc. See Form 8-K, DreamWorks Animation SKG, Inc., (Apr. 21, 2011), available at <http://www.sec.gov/Archives/edgar/data/1297401/000119312511110112/d8k.htm>).

281. This hypothetical might sound a bit farfetched, but patents have almost become an odd currency, like a Bitcoin minted by the USPTO, and there are seemingly few limitations on a well-crafted plan to employ IPRs creatively. After all, the Bureau of Alcohol Tobacco and Firearms used trademark infringement as means for impeding the Mongols motorcycle gang. See, e.g., *Bitcoin*, WIKIPEDIA, <http://en.wikipedia.org/wiki/Bitcoin> (last visited Oct. 23, 2011), and see, Andrew Orłowski, *Feds Seize Biker Gang’s*

3.3.6 Investor Objective: Growing an Existing Investment

Assume that an investment group has conducted diligence on a particular technology sector and decided to invest in two of five of the leading firms in this new area. The investors, with or without the knowledge of the two firms invested in, could privateer against the three firms in which they did not make investments.

The goal of this privateering effort would be to use risk capital to enhance share capital by adding a commercial impediment to the three companies that the investors have eschewed. The patent infringement action brought by the investors would be geared to bring as much management distraction as possible to the three companies, and the ultimate settlement and litigation expense would likely attrite away from the companies funds that could otherwise be employed in further development of competitive products and services. While the investors may recoup the funds expended in the privateering effort in the form of litigation settlements, the investors will also benefit in that the litigation should give aid and comfort to the companies that have received funding from the investors, and perhaps signal to other investors which companies are the healthy ones ready to receive further investment.

In this instance, the sponsor and the privateer could be one and the same, although it is more likely that the sponsor will not have the expertise on its own to know how to behave as an aggressive NPE. Of course, a third-party privateer does not need to know the motivations of the sponsors in bringing litigation. The sponsors could simply appear to the privateers as a group of investors who would like to profit from the growing market in patent enforcement.

The sponsors could take the action with the knowledge and possibly the approval of the companies that have received their investments. In general, however, one would imagine that this form of privateering would be known with certainty by no one beyond a few members of the company's board, who might actually be the sponsors.

3.3.7 Investor Objective: Change in Stock Price

Assume that an investor group wants to make a large investment in an SME that is a public company. The investor group makes arrangements with a privateer to sue the SME for patent

infringement. A company's stock price can drop by more than 10% in the immediate aftermath of adverse patent litigation news.²⁸² In this particular instance, the investors will probably want to make sure that the lawsuit receives a fair amount of publicity.

After the lawsuit is launched, and the stock price drops, then the investor group buys up the discounted shares. The investor group will know that the litigation constitutes little more than a financial risk to the company rather than a business risk, and the investor group may also know that the litigation constitutes no more of a threat to the company's product offering than it does to the product offering of any other company in the same business sector. The target SME will tend to want to settle the lawsuit quickly so that its competitive situation will return to baseline values, and the investors will concur with settlement once they have bought shares.

Assume that the investment amount is \$30 million. A 10% reduction in share price would amount to a \$3 million discount. If arrangements were made with the privateer so that all the investors had to do was acquire the patent, then using the Ocean Tomo figures, this privateering operation could be completed for a cash outlay as low as \$250,000. So, the non-annualized return on investment would be twelvefold over the costs for outfitting the privateer. If the privateering arrangement was structured such that the investors got their patent purchase costs back from the litigation proceeds, then the privateering operation would effectively cost the investors nothing since the litigation settlement expenses would be spread among all the SME's investors.

The investors would likely structure their relationship with the privateer such that the privateer had no knowledge of the investor's pending investment in the company. The investors could simply make arrangements with the privateer to sue the company on a given day that would give the investors sufficient time to make their arrangements for acquiring a certain number of the SME's shares for no more than the going market rate. It will be practically difficult for

282. Todd R. Weiss, *Vonage CEO Resigns; Company Moves To Cut Costs*, COMPUTERWORLD, (Apr. 12, 2007), http://www.computerworld.com/s/article/9016340/Vonage_CEO_resigns_Company_moves_to_cut_costs_ (reporting that Vonage's stock dropped 24% in light of a patent infringement litigation); Eric Mitchell, *Shaky Status of Patent Lawsuit Rocks Gemstar Stock*, BLOODHORSE, <http://www.bloodhorse.com/horse-racing/articles/9298/shaky-status-of-patent-lawsuit-rocks-gemstar-stock#ixzz1KfEa9IBJ> (report that Gemstar's stock dropped 15% in light of patent misuse claims); see also Jean O. Lanjouw and Mark Schankerman, *Enforcing Intellectual Property Rights*, (Oct. 2001) available at <http://sticerd.lse.ac.uk/dps/ei/ei30.pdf>.

most targets to find the relevant trading data that could reveal a privateering sponsor, although it is possible for the SEC in its review of trading data to consider sanctions against the investors. The investors would likely need to construct their privateering operation fairly carefully to avoid accusations of and liability for market manipulation.²⁸³

3.3.8 *Investor Objective: Short Selling*

An investor or investment group could routinely use privateers as a means for temporarily lowering the share price of public SMEs as a way of profiting from a decline in share price, e.g., making profits via short selling the stock.²⁸⁴ The investor first conducts research to determine the characteristics of public companies that are most vulnerable to at least a temporary decline in share price due to announcement of a patent infringement action. For any given public company this would also likely entail determining what kind of patent would have the maximum impact on the target company's share price. At some time in the past, any patent might have worked for a small company, but given the proliferation of NPE patent lawsuits in recent years, a patent litigation against an SME might need to resemble another *NTP v. RIM* case²⁸⁵ in order to have maximum effect. In short, the case would need to appear threatening to the target's competitive advantage, e.g., a business risk rather than a mere financial risk.

Of course, the investor can also make money via the privateering operation itself. So, the investor could make money from both the short selling of the target's stock and from the settlement of the patent litigation. The investor would not necessarily need a third party privateer and could serve both roles. However, the investor would probably be less vulnerable to potential liabilities if it could argue that the privateer was at arm's length from the investor's actions. The investor would need to carefully structure its actions to avoid potential liability for market manipulation.

283. See Ewing, *supra* note 8.

284. Lang Asset Management, *Understanding Short Selling—A Primer*, 2000, <http://langasset.com/ishort.htm> (last visited Oct. 23, 2011).

285. See, e.g., *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282 (Fed. Cir. 2005). The NTP case settled in 2006 for \$612.5 million just prior to the court awarding the plaintiff's an injunction against further infringement.

3.3.9 *Investor Objective: Change in Valuation*

It is well known that companies are often sued for patent infringement shortly before their initial public offering (IPO),²⁸⁶ and it is equally known that the companies will do almost anything to settle such lawsuits quickly.²⁸⁷ Similar fears have led to companies being concerned about infringement litigations during the diligence rounds associated with large investments. The privateering twist in this scenario is for the prospective investor itself to bring the litigation as a means for lowering the investment target's valuation price. This form of privateering would likely call for the highest levels of stealth on the part of the privateer and the sponsor, as public disclosure could be highly damaging for the sponsor.

The prospective investor could begin making privateering arrangements well prior to entering formal diligence of the investment target. Even at the pre-diligence stage, the investor would have likely conducted a detailed study of the investment target, knowledge which would be helpful in arranging a privateering operation against the target. It would be helpful, of course, for the investor group to use information gathered in diligence to better target the IPR launched at the target company. Providing diligence information to the privateer might run afoul of non-disclosure agreements in place between the prospective investor and the target and could possibly also give rise to various civil and equitable causes of action. Fortunately, the sponsor will not typically need this additional information in order to privateer. The more likely scenario will be for the investment group to take its pre-diligence of the target and use this to find vulnerabilities that can be exploited by a privateer. Thus, no confidential information from the company needs to be used, and the privateering effort can be engaged prior to any agreements being signed between the investor and the target. Timing issues likely weigh as heavily as legal ones, as it will likely take the investor sponsor a while to complete arrangements with a privateer.

286. See Tomio Geron, *IPO-Ready OpenTable Hit With Suspiciously Timed Lawsuit*, *Venture Capital Dispatch*, WALL ST. J., May 19, 2009, <http://blogs.wsj.com/venturecapital/2009/05/19/ipo-ready-opentable-hit-with-suspiciously-timed-lawsuit/>; Chris Gaither, *Google Settles Yahoo Patent Suit in Anticipation of IPO*, L.A. TIMES, Aug. 10, 2004, <http://articles.latimes.com/2004/aug/10/business/fi-google10>; and Carol Emert, *PayPal IPO Party Spoiled By Rival's Patent Lawsuit*, S.F. CHRONICLE, Feb. 7, 2002, http://articles.sfgate.com/2002-02-07/business/17533265_1_palo-alto-s-paypal-certco-trading-today.

287. *Id.*

At some point during the diligence, the privateer sues the target. The investment group then expresses its “serious concern” about the infringement litigation and “grave reservations” about going forward with the investment to the target’s management, and threatens to withdraw from making its investment. After some negotiations, the investment group agrees to proceed with the investment provided that the target reduces the investment share price. This technique works even better when the investment group will provide the new management to the target company.

Assume that an investment group diligences a target company for a prospective \$100-million investment in a company with total share capital of \$300 million. If the investment proceeds, the investment group will own 25% of the shares in the company, which in this example is assumed sufficient to allow the investor to pick the management team and possibly much of the board. The investment group’s pre-diligence of the target has led it to identify a set of patents that could be used for maximum effect against the target. The investment group sets up an SPE with a privateer who then sues the target for infringement. In setting up the SPE, the investment group makes sure to hold a majority position on the SPE’s board or the board of the company that owns the company that holds the IPR used in the privateering operation.

After the infringement litigation is filed, the investment group “officially” reviews the patent and expresses its concern about the investment to the target. The investment group could use different legal counsel to review the patent than it used in any phase of the privateering arrangement, so the counsel’s written opinion and any appearances before the target’s management team would have a genuine and sincere sense of concern. The sponsor could even locate outside counsel for the opinion who were known to be extremely risk averse. After some negotiations with the target’s management, the investment group then obtains a reduction in the amount of its purchase price (e.g., 10% or \$10 million in this example).

The investment group’s acquisition of the target’s shares will proceed at a much faster pace than the patent litigation. The investment group completes the acquisition of the target and places its new management team into the company. The investment group instructs the new management team (with or without knowledge about the privateer’s purpose) to seek settlement of the litigation with the privateer. Because the SPE is controlled by the investment group, the two parties will reach an appropriate settlement figure, an amount which essentially needs to accomplish no more than provide

the privateer's fee. Of course, a particularly greedy investment group could structure a large settlement, knowing that 75% of the settlement amount (using the hypothetical figures above) will essentially be paid by the other investors. Also, a greedy investment group could use the settlement as a way for recouping some of its investment capital.

If the investment target had a large amount of cash on hand, then the investor group could even proceed with the investment without obtaining any more than a small reduction in share price²⁸⁸ and use the settlement negotiations with the privateer (which is essentially a negotiation with itself) as a vehicle for obtaining cash for the investment in the target. The sponsor could even make sure that the management team's settlement with the privateer was especially advantageous for the privateer. Of course, raiding the company for cash might well cross the line in terms of what the investment group can do without creating significant legal liability for itself. Such liability, however, may be avoided with sufficient formalities such as using a series of slightly different legal entities of which it is only an investor, and perhaps not even the only investor.²⁸⁹

The sponsor's greatest risk in this scenario is for public disclosure of its activities. While the sponsor's actions might not be actionable under civil causes of action,²⁹⁰ the sponsor's future business endeavors with new third parties could be extremely impaired if companies came to believe that involvement with the sponsor was simply an invitation to a lawsuit whose goal was to lower company valuation, e.g., the phrase "investment target" would have a new meaning. For this reason, the sponsor will probably not want to use this technique too often, and the sponsor will probably want sufficient layers in place (e.g., multiple corporate identities) so that it will always have plausible deniability in the event of public disclosure.

3.3.10 *Investor Objective: Recouping Research Costs*

A wholly different approach by an investment group would be to use privateering as a way for generally recouping a portion of its own research costs. Large investment houses spend enormous amounts of time and effort researching companies while only investing in a few of

288. Or possibly no reduction at all.

289. See Ewing, *supra* note 8.

290. Although equitable remedies might possibly be available if the privateering is discovered.

them. IP privateering could be used as a tool for recouping some of an investor's sunk costs in researching investment opportunities.

In short, whenever the investment group researches a prospective investment, the group will learn information about the investment target even if no confidential information is received. If the investment proceeds, then the group does not privateer—but for those investments that do not proceed, then the investment group recoups its expenses by making arrangements for privateering operations against targets that would be particularly vulnerable.²⁹¹ This list of targets could include all companies reviewed by the investment group and not necessarily companies that it has conducted diligence on. Of course, for this scenario to work without the investment group incurring liabilities, it needs to be very careful about how it handles any confidential information received from potential investments.

3.4 Privateering Infrastructure

Although IP privateering has been around for years, according to some industry IP managers, no agency presently seems to offer privateering services as such. One suspects that such services may likely conform to the regular service offerings of existing IP intermediaries, however. Privateering could be engaged as easily as contacting a licensing organization and telling them that the company would like to invest in the litigation of a patent having X, Y and Z characteristics. The sponsor could even provide a list of targets for such a patent. The investment could take the form of a general investment in the licensing organization itself rather than an investment in a specific privateering operation. This would give the sponsor more protection against ultimate discovery than an investment in an organization focused on exploiting only one particular patent. Investment in a larger organization would provide further insulation against any potential legal liability as well. Once the investment has been made, the privateer could begin searching for an IPR that matched the sponsor's particular needs, and once the patent has been found, either purchase it and/or finance pertinent litigations. Of course, the facilitator's reputation would be built on its discretion.

291. As an alternative, the venture capital firm could package its analysis and sell the analysis directly to an NPE and retain no further interest.

Acacia Research, Inc., a public company, includes among its investors mainstream mutual funds like Fidelity, Oppenheimer Funds, and the Vanguard Group.²⁹² Acacia has recently adjusted its business model to include a turnkey licensing operation for businesses holding IP rights, although Acacia does not explicitly offer privateering services. Acacia's SEC filings mention that in some instances "costs paid by Acacia's operating subsidiaries to acquire patents are recoverable from future net revenues."²⁹³ Essentially free IP rights could theoretically allow some of Acacia's IP assertions to be privateered.

Agent-brokers like iPotential and ThinkFire help patent sellers find patent buyers.²⁹⁴ General Patent Corporation International provides technical and financial support services to NPEs and helps them evaluate the viability of their patent cases.²⁹⁵ Investment companies like Rembrandt IP and Altitude Capital provide the funds to acquire, license, and litigate patents.²⁹⁶ In addition to contingent fee law firms like Niro Scavone, many conventional law firms have accepted NPEs as clients.²⁹⁷

3.5 The Possible Oversupply of Marketable Patents That Simplifies Privateering

Some commentators have argued that an "IP bubble" may ultimately form in the IP market.²⁹⁸ Their arguments are often based on the assumption that accounting requirements for patent valuation may lead to an escalating overvaluation of IPRs, particularly patents,

292. See *Acadia Research Corporation (ACTG): Shareholders*, Morningstar, available at <http://investors.morningstar.com/ownership/shareholders-major.html?t=ACTG> (last visited Oct. 23, 2011).

293. Acacia 2010 Form 10K Annual Report to the Securities and Exchange Commission at F-8, available at <http://www.sec.gov/Archives/edgar/data/934549/000093454911000005/actg2010123110k.htm>.

294. Millien & Laurie, *supra* note 71, at 55.

295. Fawcett, *supra* note 81, at 10.

296. See Nathan Vardi, *Patent Payday*, FORBES (Feb. 12, 2008), http://www.forbes.com/2008/02/11/patents-legal-rembrandt-biz-cz_nv_0212patent.html; and Mike Masnick, *Patent Holder Sues McAfee, Gets \$25 Million... But May End Up Losing \$5 Million Due to Everyone It Has To Pay Off*, TECHDIRT (Nov. 4, 2009), <http://www.techdirt.com/blog.php?company=altitude+capital+partners&edition=>.

297. Fawcett & Chan, *supra* note 81, at 9.

298. See, e.g., Ove Granstrand, plenary session remarks at CIP Forum 2009, Gothenburg, Sweden, Sept. 7, 2009 (see slide 8); see also, Nathan Vardi, *Trolling for Suckers*, FORBES (Aug. 8, 2011), <http://www.forbes.com/forbes/2011/0808/features-nathan-myhrvold-intellectual-ventures-trolling-suckers.html>.

as a component of the valuation of public companies.²⁹⁹ While this is quite possibly true, one could also question whether there exists a patent oversupply in terms of the ever-escalating stockpile of issued patents. There are more active patents now than at any time in history and the number of active patents grows weekly.³⁰⁰ The patent oversupply problem, to the extent that it exists, could act as more than a hindrance to innovation.³⁰¹ It could possibly also act as a mechanism for allowing companies to compete against each other in ways that are less than productive for the economy as a whole.³⁰²

The patent oversupply, if it exists, has likely occurred because of the coincidence of several factors. One part of the oversupply has come from the accelerating IP competition discussed earlier that has led to an increase in patent filings. But the legal standards for patentability are fixed.³⁰³ Thus, increased application filings would not necessarily contribute to a corresponding increase in patent grants. Many applications could simply be found to not contain sufficient improvements over the prior art to merit a patent and be abandoned. But this is not what has happened.

One factor behind the patent oversupply to the extent that it exists comes from patent applicant behavior. Another factor of the patent oversupply comes from the bureaucratic response to increased patent filings during the pro-patent era. The bureaucratic factors impacting the oversupply possibly include inadequate funding to

299. *Id.*

300. Patents remain in force twenty years from their filing. This means that patent applications filed roughly prior to April 1991, if issued, could still be in force today. The number of U.S. utility patents having filing dates after April 1, 1991, amounts to some 2,742,389 patents. In its 221-year history, the USPTO has issued some 7,934,266 patents, which means that the USPTO has issued 34.6% of all the patents that it has ever issued in the past twenty years. The interested reader may repeat this calculation by visiting the USPTO Patent Database, available at <http://patft.uspto.gov/netahtml/PTO/search-adv.htm> and entering the search term “APD/4/1/1991->4/26/2011 and APT/1”. Patentees must periodically pay fees in order to keep patents in force. In 2008, the USPTO reported that there were 1,872,872 active U.S. patents, giving the United States the greatest number of active patents in the world. Japan was second with 1,270,367 active patents, and Korea was third with 624,419 active patents. See *World Intellectual Property Indicators 2010*, WORLD INTEL. PROP. ORG. 66–67, http://www.wipo.int/freepublications/en/intproperty/941/wipo_pub_941_2010.pdf.

301. See Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 (5364) *SCIENCE* 1, 698–701 (May 1998).

302. A more robust analysis of this question has not been attempted in this Article.

303. See, e.g., U.S. Patent Act, 35 U.S.C. §§ 102–103 (*amended by Leahy-Smith America Invents Act*, Pub. L. No. 112-29, 125 Stat. 284 (2011)). These conditions for patentability have been essentially the same for the last 200 years.

handle the growing number of application filings, a tradition of maintaining a customer-friendly approach, difficulties in managing huge data collections, and possibly an effective lowering of the standards for obviousness.

Since 1990 more than \$800 million in user fees has been diverted away from the USPTO and applied to general revenue even though the agency is funded entirely by user fees.³⁰⁴ Recent budget cuts have reduced the agency's budget by a further 10%.³⁰⁵ To have a heavy fraction of these fees diverted away from an agency whose fees have been calculated to provide it with sufficient funds to complete its mission likely ensures that the agency cannot complete its mission in the intended manner. This fee diversion began at precisely the same time that patent application filings accelerated.

As another possible contributor to the patent oversupply, patent offices tend to offer a "customer-friendly" approach.³⁰⁶ The patent office has possibly long been effectively captured³⁰⁷ by its customer base, and the USPTO is presently led by the former head of its largest customer.³⁰⁸ While patent offices need not be hostile to patent applicants, a major function of the office is to protect the public from the issuance of unwarranted and/or overly broad monopoly rights; hence the office's true customer is the general public. One could speculate that the patent office's procedures may generally lean more towards granting patent applications than towards disallowing them. A statistical analysis of possible patent office biases has likely become confounded in recent years by the fee diversion trend noted above

304. Intellectual Property Owners Association, *Background and Status on USPTO Funding*, IPO.ORG, <http://www.ipo.org/AM/Template.cfm?Section=Home&Template=/CM/ContentDisplay.cfm&ContentID=3360> (last visited Oct. 23, 2011).

305. Dennis Crouch, *Kappos And His \$100 Million (10%) Budget Cut*, PATENTLYO BLOG (Apr. 21, 2011), <http://www.patentlyo.com/patent/2011/04/kappos-and-his-100-million-10-budget-cut.html>.

306. See, e.g., Doug Weinstein, *The Fast Lane: How to Get Your Patent Quickly Through the U.S.P.T.O.*, DIGITIMES, (Nov. 2010), <http://www.finnegan.com/resources/articles/articlesdetail.aspx?news=d3d0a3dc-977b-41f0-8a51-38d183fdb03> (describing director David Kappos as having brought a customer-friendly approach to the USPTO); and James Rogan, *Message from the Under Secretary of Commerce for Intellectual Property and Director of the U.S. Patent and Trademark Office*, USPTO (Dec. 1, 2003), http://www.uspto.gov/about/stratplan/ar/2003/02_message_director.jsp ("Our customers deserve – and the reality of trade and investment today demands – that we provide the highest quality services in the shortest possible timeframe.").

307. See WILSON, *supra* note 169.

308. Weinstein, *supra* note 306.

because increasing numbers of patent applicants have apparently decided to abandon unexamined applications.³⁰⁹

Patent offices have also generally not employed highly sophisticated information management technologies that might help them better organize their huge technical data collections and better compare granted patents, pending applications, and prior art data collections.³¹⁰ The patent office also does not seemingly compare granted patents in terms of their technical subjects—in the sense that one might view with some alarm the issuance of thousands upon thousands of patents that all pertain to certain specific technologies. Of course manufacturers can make their products in a variety of ways such that not every patent in a given technology area needs to be used in every product, but analyzing the patent data to find which patents are needed has become an extraordinarily expensive task and one that almost no one does.³¹¹

Despite the rapidly accelerating growth in science and technology, the major patent offices' managers have not routinely and overtly reevaluated who constitutes the "average" artisan across given fields—even though the viewpoint of the average artisan serves as the touchstone for patentability, the "average man" of the patent world.³¹² For example, if a patent office effectively considers the

309. See Patrick Anderson, *Rising Patent Application Abandonments*, GAMETIME IP BLOG (Apr. 1, 2011), <http://gametimeip.com/2011/04/01/rising-patent-application-abandonments/> (discussing the spike in patent application abandonment rates during the past two years with a probable cause being the increasing delays in application reviews due to funding cuts).

310. No patent office seems to employ techniques as simple as ontologies for categorizing the applications that they review—even for prior art searching purposes—let alone for analyzing the rights that they have granted. See Mark Giereth et al., *Application of Semantic Technologies for Representing Patent Metadata*, in PROCEEDINGS OF THE FIRST INTERNATIONAL WORKSHOP ON APPLICATIONS OF SEMANTIC TECHNOLOGIES, (2006) and see Siddharth Taduri et al., *An Ontology to Integrate Multiple Information Domains in the Patent System*, STANFORD INFO. ENGINEERING GRP. (2011), <http://eil.stanford.edu/publications/sid/ISTASFinal.pdf>.

311. See *Tex. Instruments v. Hyundai Elecs. Indus.*, 49 F. Supp. 2d 893, 901 (E.D. Tex. 1999).

312. Patent offices have sometimes employed a self-referential approach whereby a prior art document alone provides the standard for what an average artisan would know without explicit consideration of what average artisans actually know. See *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 421 (2007) ("A person of ordinary skill is also a person of ordinary creativity, not an automaton"); compare with *Ex Parte Satoshi Hiyamizu & Toshio Fujii*, Appeal No. 650-06, (B.P.A.I. Feb. 8, 1988) (After rejecting the examiner's construction of the average artisan in the field, the board concluded: "It is to be noted, however, that citing references which merely indicate that isolated elements and/or features recited in the claims are known is not a sufficient basis for concluding that the

“average” microbiologist to be the average microbiologist of 1985, then many pending applications will issue as patents—or at least issue with broader claims—than they would if the office re-thought what constituted an average microbiologist in 2011 because of differences in obviousness or inventive step. This problem likely exacerbates “close” cases—those where obviousness/inventive step is an issue. In short, the standards for obviousness/inventive step may have become too easy for applicants in some technology classes to hurdle even though the wording of the laws and regulations has not changed.

The pro-patent era has left many operating companies with inventories of unused patents—unused in the sense that they are in no way being practiced or otherwise exploited by their owner.³¹³ A BTG International study found that up to two-thirds of all U.S. companies have unused patent assets.³¹⁴ According to another estimate, up to 20 percent of many companies’ patent portfolios could be sold with no negative impact on the respective company’s IP position.³¹⁵ Thus, there exist large numbers of unused patents that have the potential to be applied to litigation or aggressive licensing.³¹⁶

The growing patent marketplace provides a means for companies to dispose of surplus patents. Many companies feel a “growing temptation to release patents from portfolios to those who can make ‘better’ use of them,” without fear of public reprisal, counter-assertions, or repeated interactions with competitor targets.³¹⁷ As discussed above, a number of corporate originated patents have been sold to entities that have subsequently asserted them against other practicing companies.³¹⁸ The original operating company owner often

combination of claimed elements would have been obvious. That is to say, there should be something in the prior art or a convincing line of reasoning in the answer suggesting the desirability of combining the references in such a manner as to arrive at the claimed invention [Noting *In re Deminski*, 796 F.2d 436 (Fed. Cir. 1986)].”).

313. Julie L. Davis & Suzanne S. Harrison, *EDISON IN THE BOARDROOM: HOW LEADING COMPANIES REALIZE VALUE FROM THEIR INTELLECTUAL ASSETS* 145 (2001).

314. Phelps & Kline, *supra* note 184, at 138.

315. Dan McCurdy, *Out of Alignment-Getting IP and Business Strategies Back in Sync*, in *FROM ASSETS TO PROFITS: COMPETING FOR IP VALUE AND RETURN* 15 (Bruce Berman ed., 2009).

316. Chien, *supra* note 19, at 338.

317. See Kahin, *supra* note 113, at 11.

318. See Tom Ewing, *A Study of The Intellectual Ventures Portfolio in the United States: Patents & Applications* (2d ed., version 2.4 2011)A-71 app. tbl. 3, available at <http://www.avancept.com/Publications.html> (Some 950 IPR transactions by Intellectual Ventures have cumulatively amounted to 11,024 U.S. patents/applications. Of these 950

wants some form of plausible deniability regarding control over the new owning entity so as to avoid the potential wrath from the prospective licensees.

So, where does this leave privateering? What this means is that it is relatively easy for a would-be privateering sponsor to find a patent that satisfies particular characteristics. Having found a suitable set of patents, one can then assess how easy it will be to apply each of the patents in this set for a given privateering operation—and sponsors may undertake and complete all of these steps without ever having to contact the present owner of the candidate patents.

Chapter 4 – Discussion and Implications for Policy, Management, and Research

Is privateering good, bad, or just another competitive tool? The answer may be complicated because some forms of privateering impact, potentially, a large portion of the innovation system and in turn may raise questions about the overall functioning of the innovation system itself. The interplay between privateering and the innovation system will be discussed. While a few conclusions can probably be drawn about privateering, an overall assessment of its employment by market actors possibly depends on a more comprehensive analysis of the interplay of law, economics, and innovation of which privateering comprises merely a single factor in a complex system. IP privateering and other factors possibly suggest consideration of a more explicitly constructed framework for the U.S. innovation system.

4.1 IP Privateering as Anticompetitive and Market Manipulation Behavior

Privateering, per se, does not appear to give rise to civil or equitable liability under current law. This does not mean that a

transactions, some 169 transactions involve large companies [e.g., ABB, AT&T, France Telecom, Fujitsu, General Dynamics, LG Electronics, Microsoft, Mitsubishi, Nokia, and Philips] for a total of roughly 4,769 patents and 716 applications, or slightly less than half of Intellectual Venture's total IPR acquisitions. Many of these patents were likely filed originally for defensive purposes but can now be used offensively by Intellectual Ventures.). In a similar manner about 50 patents of Conexant, a publicly traded semiconductor company that makes integrated circuits for various electronic devices have ended up in the hands of a three-person NPE called WiAV, LLC that has sued Motorola, Kyocera, RIM, and Apple, among others. *See About Conexant*, CONEXANT, <http://www.conexant.com/company/about.html> (last visited Oct. 23, 2011.); and *WiAV Solutions L.L.C. v. Motorola, Inc.*, No. 3:09cv447, 2009 U.S. Dist. LEXIS 96994, at *4 (E.D. Va. 2009).

privateering target cannot bring a counterclaim against a sponsor once the sponsor's presence is revealed; it means instead that the target will need to identify and prove some specific tort that the sponsor has committed by privateering, and the available claims which will vary depending on the circumstances of particular cases. In most instances, the target will first need to prove that the privateer's case was seriously deficient before moving on to address the sponsor's potential liability.

Anticompetitive behavior and market manipulation comprise two privateering scenarios that should always give rise to sponsor liability where they can be shown. These are the two forms of IP privateering whose potential liability is independent of the strength of the privateer's case against the target.³¹⁹ In terms of the sponsor's liability under these two causes of action, it matters little whether the privateer's case against the target is frivolous or has exceptional merit.

Anticompetitive IP privateering should invoke a blanket prohibition. Individual cases will likely contain a number of variables with both litigants presenting nontrivial arguments that a given activity was/was not anticompetitive, as is the nature of the legal process. However, in those instances where a sponsor would not have been privileged to use his own IPRs against the target on anticompetitive grounds, then the sponsor should not be allowed to privateer against the target using third-party IPRs either. IP privateering adds to the IPRs at the disposal of the sponsor, thus making the sponsor even more anticompetitive than if its own IPRs had been used.

Moving anticompetitive privateering onto a list of prohibited activities does not solve a target's evidentiary difficulties. The ultimate beneficiary of a privateering operation may remain well hidden and shielded. Striking an appropriate discovery balance in litigation may prove difficult. Most patent litigations, even NPE patent litigations, will probably not involve a sponsor, let alone a sponsor who is engaging in actionable antitrust/anticompetitive activities.

One possible solution may lie in sensitizing judges to the possibility of privateering in IPR cases, which may render them more sympathetic to granting broader discovery motions in cases where they might rule otherwise. Another possible solution may come from

319. See Ewing, *supra* note 8.

the regulator, in particular, the Antitrust Division of the DOJ. The *in terrorem* effect of a possible DOJ investigation may provide sufficient motivation to deter companies from privateering in instances that they themselves know are anticompetitive but pursue nevertheless under an assumption that their activities will not be exposed and sanctioned.³²⁰

Market manipulation similarly represents another form of privateering that should give rise to a blanket prohibition. Again, while individual cases may vary, no actor should be able to engage in a behavior that would be sanctioned if performed openly. A privateering effort should not avoid legal liability simply on the basis of the difficulty of its discovery, e.g., if discovered, then sanctioned; if not discovered, then no sanction.

The target in a market manipulation case likely faces a daunting evidentiary task. In the anticompetitive scenario, when the target finally discovers the presence of “Company X,” then most targets will instantly understand what has happened because of the target’s *a priori* knowledge of Company X. But in the market manipulation case, the sponsor may be a party that is completely unknown to the target—and the target will likely not have access to trading data so as to know who traded in the target’s stock at a point near the filing of the litigation. Thus, greater discovery for the target may provide only a limited countermeasure for curtailing market manipulative privateering.

As with anticompetitive privateering, a possible solution may involve the regulator—in this instance, the SEC. The SEC has access to all the relevant trading data for public companies, so the SEC should be in a position to match stock transactions with key litigation dates and make appropriate investigations.³²¹ Again, the *in terrorem*

320. The DOJ antitrust division has experience dealing with patent matters. See e.g., Grant Gross, *DOJ Limits Microsoft’s Purchase Of Novell Patents*, PCWORLD (Apr. 21, 2011), available at http://www.pcworld.idg.com.au/article/383941/doj_limits_microsoft_purchase_novell_patents/; see Deborah A. Garza, *The Increasing Role of Antitrust Principles in Defining Patent Rights*, remarks before the Intellectual Property Owners Association, Antitrust and Competition Law, Standards Setting and Pharmaceutical Issues Committees Conference (Jun. 9, 2008) available at <http://www.justice.gov/atr/public/speeches/235975.htm>.

321. The SEC is already aware of trade irregularities involving patents. See SEC v. Wittenberg, No. C-01-1477-MMC, (N.D. Cal. 2001), available at <http://www.sec.gov/litigation/litreleases/lr16970.htm>; *Insider Trading Conviction Leads To Interim Suspension*, CALIFORNIA BAR JOURNAL (Feb. 2002), available at <http://archive.calbar.ca.gov/calbar/2cbj/02feb/page25-1.htm> (private practice patent attorney pled guilty to insider trading based on trades made using privileged knowledge of a pending merger); see, e.g., SEC v.

effect of an investigation, or potential investigation, may provide sufficient motivation to deter investors from using IP privateering as a means for manipulating markets.

4.2 Prohibitions Against IP Privateering Per Se

Should IP privateering per se be prohibited? To be clear, should IP privateering be prohibited or impeded even in those cases where the sponsor is not manipulating markets or acting in an anticompetitive manner and the privateer's case against the target has merit? The possible avenues for a legal prohibition seem reasonably clear; the economic desirability of a prohibition is somewhat less clear and somewhat depends on how a society constructs its innovation system.

4.2.1 Avenues for Enjoining IP Privateering

A U.S. judge cannot dismiss a case simply because he finds the plaintiff or the plaintiff's case distasteful or otherwise harmful to society.³²² The judge must have well-reasoned grounds for dismissing a case, and those grounds must be sufficiently compelling to survive a *de novo* review by an appeals court. There are a few legal causes of action that over time might eventually develop into a body of law sufficiently robust that they could be used as a tool for erecting a per se prohibition on IP privateering.

IP privateering only works when one can find an IP right that is sufficiently valid and sufficiently infringed to survive in litigation long enough for settlement to become plausible with no sanctions against the plaintiff. In short, these are essentially the same necessary conditions for just about any IP rights litigation. It would be difficult to set out coherent boundary conditions for when and under what circumstances infringement becomes acceptable and conversely at what point does stopping infringement become unacceptable.³²³ The

Marks, No. 02 CV 12325 (JLT) (D. Mass. 2004) (SEC complaint filed against corporate patent attorney for insider trading led to criminal conviction and sanctions), *available at* <http://www.sec.gov/litigation/litreleases/lr18956.htm> and <http://www.sec.gov/litigation/complaints/comp17871.htm>.

322. MODEL CODE OF JUDICIAL CONDUCT Canon 2 ("A judge shall perform the duties of judicial office impartially, competently, and diligently"), R. 2.2 ("A judge shall uphold and apply the law, and shall perform all duties of judicial office fairly and impartially.") (2007), *available at* http://www.americanbar.org/content/dam/aba/migrated/judicialethics/ABA_MCJC_approved.authcheckdam.pdf.

323. This daunting task will not be attempted here, although as noted above, the actors in the present system already tolerate a degree of infringement. *See* Mark A. Lemley, *Ignoring Patents*, 2008 MICH. ST. L. REV. 19, 21 (2008) ("[B]oth researchers and

boundary conditions would have to be articulated very carefully, or otherwise they might provide unintended tools for actors in cases that had nothing to do with privateering, further complicating an already complicated process.

IP privateering concerns the motive for bringing an IPR suit. Patent law has generally been free of considerations of motive on both the plaintiff and defendant sides of litigation with some exceptions.³²⁴ The case law could possibly expand over time to include the plaintiff's motives for bringing an infringement litigation into consideration for finding infringement and/or in determining damages. However, the rationale might seem somewhat peculiar, if not absurd, as it would essentially allow a party to infringe a patent when the patent's owner or financial backer did not have a proper state of mind in bringing the litigation. The additional discovery into the plaintiff's motivations and state of mind might prove incredibly burdensome for the majority of infringement cases where privateering will not be an issue. In short, taking into consideration the plaintiff's motives for bringing an otherwise legitimate infringement action appears to be a solution that would be considerably more harmful than the problem it purportedly cures. Thus, a focus on the plaintiff's motive seems unlikely to develop into a separate body of case law that ultimately proscribes the use of privateering.

IP privateering would be a more difficult strategy to employ if the patent oversupply problem was also not present. One could suppose that if there were fewer patents, then the remaining patents might have sufficient economic importance and value in their own right that their acquisition cost might outweigh the typical benefits

companies in component industries simply ignore patents. Virtually everyone does it. They do it at all stages of endeavor.”).

324. Motive considerations have thus far been fairly rare in patent law but there are exceptions. For example, on the plaintiff side, inequitable conduct requires the showing of an affirmative misrepresentation of a material fact by the plaintiff during patent prosecution. *See, e.g.,* *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1289, 1300 (Fed. Cir. 2011), *and see* *Molins Plc. v. Textron*, 48 F.3d 1172, 1178 (Fed. Cir. 1995). On the defendant side, contributory infringement requires a showing of the defendant's motive. *See, e.g.,* *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1306 (Fed. Cir. 2006) (“Inducement requires evidence of culpable conduct, directed to encouraging another's infringement, not merely that the inducer had knowledge of the direct infringer's activities.”); *see also* *Wordtech Sys. v. Integrated Networks Solutions, Inc.*, 609 F.3d 1308, 1315 (Fed. Cir. 2010) (corporate officers who knowingly aid and abet in their corporation's infringement may be held liable for inducement of infringement under 35 U.S.C. § 271(b)).

provided by privateering.³²⁵ It has not previously been the function of the courts to regulate the supply of patents, generally, and/or those available in the marketplace. Thus, the legal system on its own initiative is unlikely to regulate the patent supply.

As a solution to privateering, one could argue for a looser standard for granting Rule 11 sanctions in patent cases, but there is no reason why the litigation of patent rights should be less robust than the litigation of other rights. Rule 11 applies to all civil causes of action, and most patent cases will have little to do with privateering. One could presumably amend Rule 11 to specifically include a harassment element in IP cases. The parameters could basically run along similar lines of anti-SLAPP legislation.³²⁶ Such an approach, however, could easily cause more problems than it solves.

Case law progressions in two areas might eventually lead to a legal prohibition against IP privateering. Those cases in which a privateer was sanctioned for bringing a frivolous case against the target and where the target brought a subsequent counterclaim against the sponsor might eventually develop into a sizeable body of cases that could ultimately provide a platform for curtailing privateering as such. Similarly, the antitrust doctrine articulated under *Kobe*³²⁷ might possibly be extended over time to include a more blanket prohibition against privateering. This could occur if *Kobe* came to be seen as more than just a concerted effort to monopolize a technology sector through patent purchases and instead as an attempt by an operating company to behave anticompetitively in the market using patents, a usage that could come to be seen as including privateering. However, even if courts were so motivated to develop the case law in either of these areas, the progression would probably require many years before a court would render a finding against privateering per se.

The present legal system can already assist a privateering target who makes a successful Rule 11 challenge against a privateer. With knowledge about the possibility of privateering, this same target should be able to direct additional discovery that could lead to uncovering of a sponsor—the target just needs to know to ask the

325. This consideration may also apply to aggressive NPE litigation as well.

326. SLAPP played a role in countering accusations of tortious interference with prospective advantage in *iLeverage, Inc. v. Limelight Networks, Inc. et al.*, No. CGC-11-507095 (S.F. Super. Ct. June 15, 2011) (The Court ordered that plaintiff *iLeverage, Inc.* pay *Limelight Networks, Inc.* damages under California's Anti-Slapp law.).

327. See *Kobe, Inc. v. Dempsey Pump Co.*, 198 F.2d 416 (10th Cir. 1952).

appropriate questions and judges need to be sensitive to such possibilities. How sensitive should judges be to privateering matters? One could say that so long as the plaintiff holds all the necessary rights needed to bring a lawsuit that there is generally no reason for a court to grant broader discovery. Where the defendant has filed a Rule 11 motion for sanctions, however, the defendant could additionally argue that it had a need to know about related parties in order to formulate possible counterclaims. Judges should carefully apply flexibility where defendants seem to have reasonable grounds for such counterclaims.

The legal system seems unlikely to take action on its own to end privateering, especially not in a short-term time frame. Of course, courts would likely have little hesitation in punishing privateers and sponsors for cases that were found to be frivolous or where market manipulation or antitrust were shown in the absence of action by the legislator to change the law to prohibit privateering, *per se*. Thus, a solution may lie with the architect of the innovation system—the legislator.

4.2.2 IP Privateering from the Perspective of Various Economic Actors

One could suppose that a legislator might be inclined to amend the laws to prohibit IP privateering on a sufficient showing that the practice was harmful to the economy overall and especially to the innovation system. In conducting its investigation, the legislator might query various groups within the innovation system for their thoughts and perspectives regarding IP privateering. Presented below are some perspectives that various actors within the innovation system might have regarding IP privateering. Of course, further analysis and empirical validation of these viewpoints would be warranted prior to reaching any conclusions that might impact policy.

4.2.2.1 Inventor, SME, and NPE Points of View

Privateering likely provides mixed benefits for investors/SMEs. The relative handful of inventors, SMEs, and NPEs³²⁸ who hold IP rights deemed useful to a privateering sponsor may benefit handsomely from privateering. Inventors, SMEs, and NPEs, as discussed above, have sold their IPRs to investors for many years.³²⁹

328. Here, NPEs are somewhat more likely to include universities and research institutions, although aggressive NPEs willing to sell IPRs for a privateering operation could certainly be included.

329. See Epstein, *supra* note 62.

Privateering simply provides yet another rationale for such transactions.

When one looks at privateering from an inventor/SME point of view, one can possibly see that IP privateering might accelerate a logical split that has already been observed in the technology market. Those inventors/SMEs who attempt to make and sell products/services into the marketplace could well become the targets of privateering operations and suffer greatly from it. On the other hand, most inventor/SMEs will not have capital for privateering themselves.

Granstrand and Chesbrough have already commented on the growth of open innovation.³³⁰ There is a possibly emerging economy in which some actors focus on R&D and then transact the fruits of their labors to firms that specialize in integration and commercialization.³³¹ IP privateering possibly accelerates this trend in the sense that while it provides further discouragement to inventors and SMEs for manufacturing and selling products themselves, it does not discourage them from continuing to perform R&D and possibly even provides them with an additional avenue for selling the results of their R&D. Of course, further investigation is warranted.

4.2.2.2 Investor Point of View

Privateering potentially offers great benefits to the investor, especially the large investor. Privateering provides a tool for the large investor to shape the competitive landscape in a manner that better matches his investments, especially for those investing in relatively young technology markets. The approach allows the investor to employ his risk capital in a manner that may directly benefit his share capital.

Consider the benefits of privateering to an investment fund that has conducted diligence on an emerging technology sector and found potential investments. Assume further that these potential investments comprise relatively small companies that more-or-less compete against each other. The investment fund could invest in a few of the companies, for example, and then find a patent, or patents, to privateer against the remaining companies. Given all the difficult things that any young company must handle, the distraction of a patent litigation might be just enough to allow the two companies

330. See GRANSTRAND, *supra* note 30.

331. *Id.*

invested in (and not privateered against) to surge ahead of their competitors.

Of course, some investors, particularly small ones, may find privateering detrimental to their investments. The tradeoff from IP privateering for investors likely comprises the ability to quietly shape competitive environments on the one hand against the dangers of unchecked IP competition on the other hand. It would further seem that the greatest benefits to privateering may possibly lie in the early days when knowledge of privateering, especially in the investment community, is likely low. Further investigation into the perspectives of investors of various sizes seems warranted.

4.2.2.3 Large Operating Company Point of View

The benefits of privateering generally track with a company's size. For the most part, small companies are shut out of privateering sponsorship because they are less likely to have the extra capital to expend on a privateering effort. The high cost of patent litigation impedes the ability of a small company to bring patent litigation generally.³³² Also, the main benefit of privateering comes from changing a portion of the competitive landscape without having one's name associated with the change. The competing supplier scenario would seem to be one of the few situations where privateering might be advantageous to a small company.

Curiously, many large companies have been the ones to complain the loudest about NPE litigation, and the litigations that they have complained the most about are those brought by aggressive NPEs (some of whom may have been privateers).³³³ While privateering has existed for some years, companies have no incentive for being glib about privateering. The corporate world has no equivalent to *Queensberry Rules*³³⁴ and neither does the IP world. The only real approbations in the competitive world are legal and business ones—if an activity will grow shareholder value and not run afoul of any legal rules, then it is as “gentlemanly” as any other activity.³³⁵ Micron's involvement with Round Rock Research has already been discussed.

332. Even with the use of contingency fee attorneys, litigation will still have costs and will likely create distractions for managers.

333. Yen, *supra* note 157.

334. See *Queensberry Rules*, THE OXFORD DICTIONARY OF PHRASE AND FABLE, http://www.encyclopedia.com/topic/Queensberry_Rules.aspx#1-1O214:QueensberryRules-full (last visited Oct. 6, 2011).

335. An economic or innovation system viewpoint may differ sharply, of course.

Micron has not, thus far, publicly acknowledged the sale of 20% of its patent portfolio to Round Rock Research beyond a passing mention in its SEC filings.³³⁶ Micron's counsel has previously spoken publicly about the negative impact of aggressive NPEs.³³⁷ Some have accused the company of hypocrisy,³³⁸ but Micron is under no obligation to clearly outline its corporate strategy in public, absent regulations to the contrary. In the absence of an explanation, one can only guess at the company's overall strategy with respect to Round Rock. Similarly, as previously mentioned, the companies who complain the loudest about the patent backlog and "bad" patents³³⁹ are sometimes the same companies who have argued the hardest for lowering the benefits of the patent right.³⁴⁰ In the aggregate, it is difficult to know how companies really feel about IPRs, NPEs, and privateers, despite their public pronouncements when their behaviors run in the opposite direction. Corporate actors have little incentive for making proposals to an innovation system that could possibly put them at a disadvantage.

Large corporations are the ones that most likely created IP privateering, as previously discussed, and it should come as little surprise that they are the primary beneficiaries of this strategy. One might suspect, however, that large companies could be amenable to reforms in the overall innovation system that would alter the place of IPRs and diminish the role of stealth in IP operations. Further research is called for, of course, before new policies are suggested. Among the questions to be considered would be the extent to which the patent system is intended, implicitly or explicitly, to benefit large companies in comparison to small companies, research laboratories, and independent inventors.

336. See Micron Technology, *supra* note 258 ("[Micron] has recovered some of its investment in technology through sales of intellectual property rights to joint venture partners and other third parties.").

337. See, e.g., Joel Poppen, Director of Patent Litigation & Licensing, Micron Technology, Inc., Remarks before the Federal Trade Commission, *The Evolving IP Marketplace: The Operation of IP Markets: The IP Marketplace in the IT Industry* (May 4, 2009) 685–86.

338. Joff Wild, *The Questions that Micron Technology Will Not Answer*, IAM MAG. (June 8, 2010), <http://www.iam-magazine.com/Blog/Detail.aspx?g=4768d19e-571c-452b-ac56-a3ba9e22fe19>.

339. Chien, *supra* note 19, at 317–18.

340. *Id.* at 333.

4.2.3 *IP Privateering from an Innovation System Perspective*

In addition to querying the actors in the innovation system directly, the legislator might also wish to consider the innovation system from a systems perspective prior to changing the law with respect to privateering. Thus, questions about privateering could be framed around the innovation system, generally, and the purported goals of the patent system, specifically. From a societal or consumer point of view, the IPR system within an innovation system is often considered to do the following:

- Stimulate the rate of invention by providing an incentive for investment in R&D (also for reinvestment and for invent-around work);
- Stimulate the rate of commercialization (rate of innovation) through investment in general;
- Stimulate the rate of diffusion and technology transfer through disclosure, marketing and licensing; and
- Provide an artificial metric of invention.³⁴¹

Applying this framework, leads to several questions: Does privateering³⁴² have any real impact on investment in research and development or does it primarily act as a wealth redistribution mechanism among existing innovation system actors? Are privateering and NPE activity generally mechanisms for redistributing wealth among a certain category of economic actors or do these practices cause real economic harm, especially to the innovation system?³⁴³

4.2.3.1 IP Privateering, NPEs, and Venture Capital

Privateers are a specialized form of NPEs. The IP privateers, while smaller in number than the aggressive NPEs, may have succeeded in claiming a comparable number of prizes as the aggressive NPEs. Round Rock and IV alone account for nearly \$3 billion in IPR revenue, as previously noted.

341. See GRANSTRAND, *supra* note 30 (The corresponding drawbacks of an IPR system are that it risks monopolistic inefficiencies (including risk of hampered commercialization of new technologies); require administrative costs for setting up and running the system; carries a risk of R&D and investment distortion; and also runs a risk of over-investment in duplicative R&D and/or substitute inventions.).

342. And possibly all of NPE activity for that matter.

343. This question assumes wealth redistribution among persons within the same economic class has little impact on the overall economy.

NPEs tend not to say much about themselves, and they have no incentive for being chatty. Their preferred LLC corporate form conceals much information about themselves. Consequently, there is little publicly available information about who these actors really are in the aggregate. As others have noted, many conjectures about NPEs are either untested or, at best, motivated by individual cases.³⁴⁴ Considering the potential impact that NPEs and privateers may have on the functioning of technology markets and possibly the innovation system itself, putting some of these conjectures on solid empirical ground appears highly desirable.³⁴⁵

The identification of privateering came in part from trying to answer the question: “Who are the patent trolls, really?” Many NPEs are universities and research organizations. Still others are large businesses clearly out to maximize their licensing profits.³⁴⁶ But there are numbers of other smaller entities, typically having a limited liability corporate form, whose membership, organization, and motives are essentially unknown.

Because no one knows who owns the aggressive NPEs, it is likely impossible to determine what happens to the litigation and settlement funds they receive. Round Rock, for example, could well have been a

344. Gerard Magliocca, *Blackberries and Barnyards: Patent Trolls and the Perils of Innovation* (2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=921252.

345. Reitzig, *supra* note 33, at 2.

346. One thinks of an Acacia or an Intellectual Ventures. Acacia is a publicly traded company that, through its subsidiaries, enforces the patents of individual inventors, small companies, and even large companies, and seeks to monetize their patents. (Acacia Techs., LLC, *Acacia Technologies: Leader in Patent Licensing and Enforcement* 3, 3 <http://acaciatechnologies.com/docs/CorporateBrochure.pdf> (“[P]atent owners who engage with us are primarily inventors and small companies who have limited resources to deal with unauthorized users, but include some large companies looking to turn their patents into revenue.”)) Acacia typically splits its revenues, giving half to the inventor and retaining half for itself, (Letter from Paul Ryan, Chief Exec. Officer, Acacia Research, to Fed. Trade Comm’n (May 13, 2009), available at <http://www.ftc.gov/os/comments/iphearings/540872-00048.pdf>). Acacia both licenses and litigates as part of its enforcement campaigns. Acacia’s subsidiaries were involved in 308 lawsuits from 1993 to 2008 which produced more than \$400 million in revenue. See McCurdy, *supra* note 23, at 80; Acacia Techs., LLC Patent Licensing & Tech., available at <http://acaciatechnologies.com/index.htm>. Similarly, IV acquires, develops, and licenses patents for fees and equity investments, at times resorting to litigation. The company claims to have received from \$5 billion to \$8 billion in investment which it has used to purchase more than 35,000 patents/applications worldwide and claims to have already collected some \$2 billion in revenue. Investors include some large companies like Microsoft, Apple, and Sony, as well as large institutions and wealthy private individuals. See Ewing, *supra* note 183.

billion dollar purchase,³⁴⁷ but it has not yet been revealed precisely who provided the money or who controls the company, as noted previously.³⁴⁸ As a group, the modern NPEs and privateers seem likely to be parties with access to generous amounts of risk capital. Historically, the patent trolls may have been patent attorneys, individual inventors, or the managers of failed companies,³⁴⁹ but the level of investment in NPE activity possibly indicates that the NPE world includes many well-financed new entrants. The average patent sold at the Ocean Tomo auctions was nearly \$200,000,³⁵⁰ and as discussed earlier, the price of an Ocean Tomo patent is a good proxy for the price of an NPE patent. While \$200,000 is not an enormous sum, the amount essentially represents the requisite minimum entry ticket into an expensive, risky, and uncertain venture. Even if one can find adequate legal talent on a contingency basis, litigations still involve expenses, and expenses probably cost at least another \$200,000.³⁵¹

Aristotle called it *anagnorisis*, that moment where the protagonist in a drama suddenly works out what's been going on the whole time.³⁵² Whoever the contemporary patent trolls are, they have approximately a half million dollars in risk capital. One could hypothesize that the patent trolls must be entities who have access to levels of capital that exceed the amounts needed for conventional wealth preservation and can afford to commit capital in potentially risky ventures. Risk and venture capitalists are somewhat better known groups that essentially comprise the persons who provide

347. Based on comparables with other portfolios such as Nortel's auctioned portfolio, which sold at auction on July 1, 2011, for \$4.5 billion. Joff Wild, *Google The Big Loser As Nortel Patents Go For A Jaw-Dropping \$4.5 Billion*, IAM BLOG (JULY 1, 2011), <http://www.iam-magazine.com/Blog/Detail.aspx?g=fb20690c-a0f8-421d-8ea9-f4270a63fa40>.

348. Although as noted above, Atlantic Capital and Goldman Sachs appear to have played roles. See *supra* note 266.

349. See Costar, *supra* note 95; Allison, *supra* note 101; and Sandburg, *supra* note 100.

350. Ewing, *supra* note 73, at 67 (Intellectual Ventures bought 75.8% of the patents auctioned, and other NPEs bought 13% with only 11.2% being purchased by operating companies, and nearly a dozen patents purchased at Ocean Tomo patents have been used in patent litigations.).

351. See *supra* notes 209–212 and related text (note reference to the “986 Partners.”).

352. NORTHROP FRYE, *FABLES OF IDENTITY: STUDIES IN POETIC MYTHOLOGY*, 25 (1963) (Aristotle identified the famous scene in *Oedipus Rex*, where the young king realizes he's killed his father and had sex with his mother, as the most perfect example of this in action.).

much of the funding for the innovation system.³⁵³ For those in the innovation system who disapprove of IP privateering, it is appropriate to borrow a famous phrase from the Pogo cartoon strip, “We have met the enemy and he is us.”³⁵⁴

It would not make sense for venture capitalists to employ patents acquired with risk capital against the same companies in which they have invested their share capital. But it would make sense for them to employ risk capital patents against competitors of their share capital companies. In fact, this might be exceptionally profitable. In short, it is possible that the patent trolls, like the privateers, are directed by the actors whose superior wealth allows them a measure of control over the economy already, and for some of these actors (the privateers), the litigations they bring are not just for the purpose of making money from a litigation damages award but as a tool for making a whole lot of money someplace else.

If privateers, and some NPEs as well, are funded by participants in the existing innovation system, then one could ask what happens to the funds they receive from litigation settlements and awards? Further research into where the funds received from NPE and privateering activities end up might prove enlightening. It may well turn out that NPEs function more within the innovation system than outside it in the sense that much of the money they collect might possibly be returned to investment, albeit of a different form.³⁵⁵

Thus, privateering, and possibly much of NPE activity, may already be tied to the innovation system by virtue of similarities among its funders.³⁵⁶ While the legislator, or regulator, could attempt to enjoin these activities without further contemplation about the whole of the innovation system, the legislator could alternatively consider this possibility as providing an appropriate motivation for undertaking a more thorough examination of the innovation system itself.³⁵⁷

353. Matthew Bishop, *A Survey Of Private Equity, The New Kings Of Capitalism*, THE ECONOMIST, Nov. 25, 2004, http://www.economist.com/node/3398496/?story_id=3398496/.

354. Attributed to Walt Kelly, author of the *Pogo* comic strip. MARGARET MINER & HUGH RAWSON, THE OXFORD DICTIONARY OF AMERICAN QUOTATIONS 325–26 (Oxford Univ. Press 2d ed. 2005).

355. Absent a small measure of transaction costs.

356. The publication of IV's investor list, provided in Appendix 1, has essentially confirmed this hypothesis.

357. This, of course, does not mean constructing a planned economy but instead building a framework for an innovation system in which individual actors compete as they please. One could cite Milton Friedman about the dangers of a planned economy, but the

The ostensible leaders of the patent portion of the innovation system are Congress, the courts, and the USPTO. Accordingly, changes to the patent system's infrastructure typically occur by altering one of these three institutions.³⁵⁸ The literature on patent system design is rich³⁵⁹ and has addressed a series of issues pertaining to post invention inefficiencies, including cumulative innovation³⁶⁰ and conflict resolution issues.³⁶¹ The emerging patent ecosystem also highlights the influence of non-legal developments, including demonstration effects and business model innovations, on the patent system.³⁶² The complete ecosystem has sometimes suggested possibilities for changing the patent system by changing sponsor behavior directly, rather than through one of these three institutions. In any event, the patent ecosystem has no explicit links to any other portion of the innovation system. Rather than making an *ad hoc* change to correct privateering (or NPEs), it might be more desirable for any changes to be comprehensive, and the most beneficial adjustment would seemingly be one that created linkages between existing innovation system components.

4.2.3.2 Innovation System Policy Questions and Considerations

If privateering is considered with respect to the overall innovation system, then the following represent some of the questions that a legislator might wish to seek an understanding of in crafting appropriate legislation.

political sector may be more compelling: in the words of former President Ronald Reagan, "The nine most terrifying words in the English language are: 'I'm from the government and I'm here to help.'" *Ronald Reagan Quotes*, ABOUT.COM, <http://politicalhumor.about.com/cs/quotethis/a/reaganquotes.htm> (last visited Oct. 23, 2011).

358. See DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* (2009).

359. See generally ADAM B. JAFFE & JOSH LERNER, *INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT* (2004).

360. Jerry Green and Suzanne Scotchmer, *On The Division Of Profit In Sequential Innovation*, 26 RAND J. ECON., 20–33 (1995).

361. See Claude Crampes & Corinne Langinier, *Litigation And Settlement In Patent Infringement Cases*, 33 RAND J. ECON., 258–74 (2002) and Mark Schankerman & Suzanne Scotchmer, *Damages and Injunctions in the Protection of Intellectual Property*, 32 RAND J. ECON., 199–200 (2001).

362. Chien, *supra* note 19, at 304–06.

4.2.3.2.1 *Should a Reasonable Royalty Reflect the IP Owner's Background?*

Patents have been considered a means for facilitating technology transfer in technology markets.³⁶³ Most prior commentators start from the premise that genuinely creative and credible patent holders must be defended against deliberate infringers.³⁶⁴ NPEs and privateers do not make products, let alone products protected by their patents. The Supreme Court declared nearly 100 years ago that manufacture of a product was not necessary for damages to be awarded in a patent infringement case.³⁶⁵ One question to ask with respect to the use of patents in the innovation system relates to adequate compensation for patent owners whose patents are infringed when lost profit damages are unavailable,³⁶⁶ which is the case when the patent owner does not make or sell a product/service protected by the infringed patent. Of course, the law allows for a reasonable royalty in such situations, but one could investigate whether NPEs, such as universities and research labs, are deserving of a different royalty rate than an NPE who purchased a patent in the market. The present nondiscrimination between these types of actors may represent an appropriate allocation. On the other hand, it might be a useful exercise to consider whether patents should have something analogous to moral rights³⁶⁷ in copyright in the sense of recognizing a higher right when the patent is still owned by the party who created the invention.³⁶⁸ Such a change would not stop privateering or aggressive NPEs, but it might possibly act to stop some speculation in IPRs.

These questions would implicate privateers as well as general NPEs. Most privateers are not practicing their invention and in many

363. Joshua Gans & Steven Stern, *Is There A Market for Ideas?* (2009) available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1334882.

364. See Cesaroni *supra* note 32, at 14, but compare with James Bessen & Michael J. Meurer, *Patent Litigation With Endogenous Disputes*, AER PAPERS AND PROCEEDINGS, 77-81 (2006).

365. *Cont'l Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 429 (1908).

366. See 35 USC. § 284.

367. See, e.g., Mira T. Sundara Rajan, *Moral Rights and Copyright Harmonization: Prospects for an "International Moral Right"?*, 17th BILETA Annual Conference (Amsterdam, 2002), available at <http://www.bileta.ac.uk/Document%20Library/1/Moral%20Rights%20and%20Copyright%20Harmonisation%20-%20Prospects%20for%20an%20International%20Moral%20Right.pdf>.

368. Of course, many patentees sell their patents to third parties because of the difficulties and expense associated with patent enforcement.

cases the IPRs have been purchased. Among other questions, an investigation could consider the utility, if any, to the overall system for allowing a market incumbent to privateer against an upstart competitor. This may prolong market inefficiencies, but on the other hand may possibly bring systemic benefits as well.

4.2.3.2.2 *How Critical Is Ownership Transparency to the Innovation System?*

The patent component of the innovation system has long had requirements regarding the transparency of what has been patented. Complete patent specifications have been published and widely circulated since at least the great Patent Office fire of 1836.³⁶⁹ Prior to the great fire, patent documents were kept within the Patent Office and patent litigation somewhat involved a literal determination as to what had been patented when an inventor produced a patent certificate in court. This problem was solved by publishing issued patents which were made available to libraries and the general public. Companies, other inventors, and the general public were encouraged to study these documents to learn what had been patented so as to avoid infringement and to make still more inventions. The advent of the Internet has allowed patent documents to be made instantly available and free of charge from the world's major patent offices. In short, there is complete transparency as to what has been patented.

However, there is no corresponding transparency requirement regarding patent ownership. The NPE market and privateering raise interesting questions about transparency of ownership in IPRs. Hiding ownership was not an issue that came up very often in IP matters until Henry Yuen, CEO and chairman at Gemstar-TV Guide³⁷⁰ (and others) in the late 1990s began boasting that important chunks of the company's portfolio were hidden and could never be found until the company was ready to use them in an infringement lawsuit.³⁷¹ Such bold assertions may have proven to be an effective licensing technique. The USPTO allows patent owners to record their ownership in patents, and this step is highly recommended when

369. See U.S. PAT. & TRADEMARK OFF., *Great Patent Fire of 1836*, (2011), <http://www.uspto.gov/web/offices/ac/ahrpa/opa/kids/special/1836fire.htm>.

370. The company is now named Rovi, following its merger in 2009 with Macrovision. See About Us-Rovi, <http://www.rovicorp.com/company/242.htm> (last visited Oct. 23, 2011).

371. Ronald Grover et al., *Henry Yuen: TV Guy, Founder Of Gemstar-TV Guide Wants To Take Control Of Your Television*, BUS. WK., Mar. 12, 2001 at 56, 57.

a patent has been sold to prevent the previous owner from selling the patent again to a third party, but this step is not required. Similarly, as discussed above, only the party owning substantial rights to a patent may file a patent infringement lawsuit. But there is no prohibition against hiding the ownership of a patent behind another entity. Intellectual Ventures has done this more than 1,300 times, and Micron has more or less done this with the quarter of its patent portfolio sold to Round Rock Research.

One can debate the extent to which this lack of transparency impedes the robustness of the innovation system and the technology markets. A rights-based mindset might be inclined to argue that a company should carefully review all patents and seek licenses for all of them that appear problematic, regardless of who owns them, and that greater transparency only allows companies to dodge their obligations by using the ownership information to determine which patent owners are more likely to hurt them. On the other hand, and especially because there are so many active patents, the lack of transparency essentially allows “sneak attacks” that might be less likely to occur with greater transparency. This lack of transparency may possibly cause greater amounts to be spent in licensing and litigation costs due to the surprise element rather than technical merit and may also contribute to speculation in the IP markets. This particular lack of transparency merits further study and analysis.

4.2.3.2.3 Is It Desirable to Overtly Regulate the Patent Supply?

The patent oversupply problem facilitates IP privateering, just as it facilitates aggressive NPEs. The legislator could also consider whether there is an optimal number of patents at which the technology markets would optimally function. This optimal number, if it existed, would likely vary depending on the technology but could possibly be expressed in a formula. If such an optimal number could be shown to exist, then the legislator would next want to consider whether there is a reasonable mechanism for regulating the patent supply to achieve these optimal numbers.

At the moment, the patent supply is completely driven by patent applicant and patent owner behavior. Of course, patent applicant behavior is somewhat stimulated by investment levels, and in some cases investments in R&D come with a requirement, or strong incentive, that the resulting products of the R&D effort be patented. But once an application is filed with the Patent Office, the primary consideration for patentability at present relates to the conditions for patentability largely set out in Sections 102 and 103 of the Patent Act,

namely novelty and obviousness. The patent system does not overtly consider other factors, such as the quantity of patents already existing in a given technology area.³⁷²

A more tightly regulated patent supply could prevent the oversupply problem that seems to facilitate privateering and NPE activity. Of course, regulating the patent supply would not end IP privateering or aggressive NPE activity, but it might have a chilling effect on these activities and confine them to an acceptable norm. The desirability and/or perceived necessity of chilling these activities should also be considered, of course.

4.2.3.2.4 *Should the Innovation System be More Formally Designed?*

One could question the extent to which the innovation system has been overtly designed. If the U.S. innovation system has been designed, its design does not reside within a single, or even a small, set of laws, although it might theoretically reside among a mix of public policies and institutional norms. Throughout its history, the Patent Act has focused on the conditions for obtaining patents and enforcing them. Economic considerations have not overtly played a part in developing U.S. patent laws themselves, although economic testimony has been obtained at certain milestones related to the patent laws.³⁷³ Economic considerations have not been expressly included in the law and only rarely appear in the case law.³⁷⁴

U.S. patent laws tend to be copies of an earlier patent act with various additional case law considerations added. Some of the wording of the U.S. Patent Act has not substantially changed since the first U.S. Patent Act.³⁷⁵ In a similar manner, the first modern

372. Of course, the quantity of patents in a given area is implicitly considered in the sense of obviousness. One could presume that as the number of patents in a given area grows, then the ability to obtain a new patent in that area becomes increasingly difficult. This is sometimes stated in terms of claim scope, however, in the sense that a patentee may still receive a patent but the claim coverage may be commercially insignificant. This might make an interesting hypothesis to test.

373. F. M. Scherer, *The Political Economy Of Patent Policy Reform In The United States*, J. ON TELECOMM. & HIGH TECH. L., 2009, at 180–95 (In some instances, such as the Bayh-Dole and Hatch-Waxman Acts, the policy changes were the result of thorough and sound economic analysis while in other instances, such as the creation of the Court of Appeals for the Federal Circuit, the economic analysis was lacking.), available at <http://www.researchoninnovation.org/scherer/Scherer-PoliticalEconomy2009.pdf>.

374. For a rare exception case, see *Uniloc U.S.A., Inc. v. Microsoft Corp.*, Nos. 2010-1035, 2010-1055, 2011 WL 9738 (Fed. Cir. Jan. 4, 2011) (rejecting the 25% rule of thumb as a starting point in calculating patent royalties).

375. Many sections of the original 1790 Act can be found nearly word-for-word in the present U.S. Patent Law. For example, the present definition of “inventions patentable”

patent law, the Statute of Monopolies 1624 in the England³⁷⁶ itself represented far less the fruits of an affirmative attempt to create a thoughtful patent law than a political compromise to curb a prior abuse—in this case, the abuse being the power of the king to grant patents for any topic, with the reform being limiting the power of the king to grant patents only for inventions.³⁷⁷

There has not been a comprehensive standard-setting body that has established the outlines of an innovation system or a patent system where representatives of invention, manufacturing, law, economics, and other relevant parties gather to work out exactly how such a system should function. While there has certainly never been a “Congress of Vienna”³⁷⁸ for patent law, there has never been an ETSI-like standards setting body either.³⁷⁹ So while representatives have come together to discuss which technology developments should be included in a technology standard, which itself is represented by some number of patents, those same representatives have never come together to develop the protocol for an inventive system or even a

under Section 101 reads as “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title,” while in the original 1790 Act, the wording for patentable inventions was set forth as “[the patent applicant has] invented or discovered any useful art, manufacture, engine, machine, or device, or any improvement therein not before known or used” Other sections of the original patent act are similar to the wording of the present law. *Compare Patent Laws, United States Code Title 35—Patents* (2006) available at http://www.uspto.gov/web/offices/pac/mpep/consolidated_laws.pdf with *Patent Act of 1790—The First United States Patent Statute*, available at http://www.ipmall.info/hosted_resources/lipa/patents/Patent_Act_of_1790.pdf (last visited Oct. 23, 2011).

376. See Chris Dent, ‘Generally Inconvenient’: *The 1624 Statute of Monopolies as Political Compromise*, 33 MELB. U. L. REV. 415 (2009) (“The continued reference to the statute, almost 400 years after it was enacted, accords it an almost idealized status within patent law. Such a status does not acknowledge the political context of its passage through the Jacobean Parliament. This Article addresses key aspects of the early modern period—including economic depression, issues of succession, and the rivalry between the City of London and the outposts—to argue that the Statute of Monopolies is best seen as a compromise, a political deal done between the Crown, the House of Lords and the individuals and groups within the House of Commons.”).

377. *Id.*

378. The Congress of Vienna redrew the national borders in Europe following the fall of Napoleon.

379. The European Telecommunications Standards Institute (ETSI), <http://www.etsi.org/WebSite/homepage.aspx> (last visited Oct. 23, 2011). ETSI is an independent standardization organization in telecommunications with worldwide influence. ETSI has been successful in standardizing various systems, such as GSM.

patent ecosystem.³⁸⁰ The closest arrangements that one could point to on this topic are the Paris Convention,³⁸¹ the Patent Cooperation Treaty (PCT),³⁸² the European Patent Convention (EPC),³⁸³ and the TRIPS agreement.³⁸⁴ The Paris Convention and the PCT only pertain to harmonization of very small portions of the overall patent system, the pertinent topic being reciprocity in international patent protection.³⁸⁵ The TRIPS agreement can also be viewed similarly.³⁸⁶ The EPC probably represents the closest exemplar of a grand patent convention, but the EPC itself was limited to the conditions under which one should be granted a patent and did not address the larger context in which those patents would be exploited.³⁸⁷ The EPC did not address topics like valuation, litigation, and licensing. By analogy, the EPC addresses how one can manufacture a proper vehicle for road use. It does not address how the roads are built or where they go, how one should use the roads, what the benefits are from use of the roads, how the interests are balanced between the use of the public roads and other factors, such as safety, the rights of pedestrians, etc. The rise of privateering may suggest certain possible patent reforms. But for any such reforms to be enacted meaningfully, the role of invention in industrial progress must be carefully thought through.

4.3 A Review of Policy and Management Considerations

Certain abusive forms of IP privateering, such as anticompetitive and/or market manipulative IP privateering can likely be ended by the courts using present law. Privateering targets will still have difficulties obtaining sufficient information about the sponsors, however. There may be roles for the Antitrust Division of the DOJ and for the SEC in curtailing these forms of privateering. It seems

380. Or even to prepare a template for what such systems might look like in an optimum state.

381. PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY, (1883), available at http://www.wipo.int/treaties/en/ip/paris/trtdocs_wo020.html.

382. PATENT COOPERATION TREATY (1970), available at <http://www.wipo.int/pct/en/texts/articles/atoc.htm>.

383. EUROPEAN PATENT CONVENTION (EPC), (1973), available at <http://www.epo.org/law-practice/legal-texts/html/epc/1973/e/ma1.html>.

384. AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS (TRIPS), 1994, http://www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm.

385. See PATENT COOPERATION TREATY, *supra* note 382.

386. See TRIPS, *supra* note 384.

387. See EPC, *supra* note 383.

unlikely that the case law will evolve in a manner to create a blanket prohibition against privateering in other areas, however, at least in the short run. Curtailing privateering may compel action by the legislator. However, given the evolution of NPEs and privateers to apparently include some of the same, or similar, capital sources that fund other parts of the innovation system, it might be desirable to consider overtly the role of privateering in an innovation system. Moreover, it might be equally desirable to construct an explicit innovation system that has an effective buy-in from all representatives of the innovation system.

4.4 Suggestions for Further Research

This Article has explored the research questions set out above. While further work could be performed related to all of the research questions, the most compelling area for additional work relates to the robustness of the innovation system. In particular, various sub-questions associated with the innovation system have been raised that could be pursued in future research. Some of these questions will be recapitulated and summarized here.

Additional analytical techniques could be developed for solving some of the “intransparency” issues related to IPR ownership. An international survey that examined the varying degrees of legal intransparency allowed from jurisdiction to jurisdiction would seemingly be helpful. The results of the survey might provide helpful comparisons of the benefits of intransparency to the overall innovation system versus its costs. Among other things, the results of this survey could be used in shaping policy related to ownership transparency. Further research is also warranted in gauging the degree to which intransparency comprises a problem. As noted above, the public is not prohibited from studying any patent; they are all publicly available with nothing hidden, but their ultimate ownership can be essentially unknown and unknowable even after a rights assertion. It would be helpful to have a better understanding of the costs of this intransparency to commercial actors and the innovation system.

Further research into the nature of the patent supply seems warranted. The supply of patents available in the economy has, up until now, been controlled entirely by applicant filing behaviors. The apparently ready supply of IPRs in the marketplace seems likely to create something akin to inflation not all that different from increases in the money supply. A detailed study would be helpful in determining if additional safeguards should be added to the patent

portion of the innovation system when applicant filing behavior exceeds certain thresholds. As discussed above, the patent offices' general approach has often been to compromise with patent applicants and grant patents having a lower scope of claim coverage rather than denying patent grants completely. Further studies might be warranted to determine how a large collection of thin patents could be effectively managed systematically or whether a better solution would be to simply stop this situation from arising.

Further research into indirect IPR exploitation would also be helpful. Only a few studies seem to have touched upon this topic, and it has not generally been recognized as an independent IPR strategy. Of course, the indirect uses dovetail nicely with much of the open innovation research, although the indirect IPR strategies discussed here have not been performed for the purpose of allowing a company to produce new goods/services but have instead been performed for the purpose of impeding other competitors. The extent to which IPRs can act as mercenaries seems less explored ground than the extent to which they can serve as missionaries, so to speak, in the open innovation literature.

As discussed above, further exploration of the linkages between various components of the innovation system would seem warranted. This has been a well-studied area, but additional investigations may be helpful in exploring the extent to which the innovation system operates as a whole and the extent to which it comprises a loosely related set of otherwise unrelated policies. A loosely related set of policies may provide the optimal solution, although gaps could arise in such a system. This investigation suggests various international studies, as one might expect that the innovation systems of some countries may be more significantly tied together than similar systems in other countries.

Of course, further research into IP privateering seems warranted. Now that a topology for privateering has been established, advanced methods can be developed for locating additional instances of the strategy. It would be helpful if a rich database of these privateering cases could be established for the benefit of researchers. Additional research regarding investor privateering would also seem warranted. A closer examination of publicly available stock trading information could be performed. However, given that the publicly available information reports stock trades in the aggregate, it could be difficult to pinpoint abnormal stock movements related to privateering. As suggested previously, collaboration with the SEC in developing algorithms for detecting trades related to infringement actions might

be helpful. Such algorithms could certainly be developed if they were premised upon access to public stock trading data that identified specific traders.

Chapter 5 – Conclusions

Modern capitalist economies have been built on competition among market actors. Absent adverse legal or business consequences, companies are incentivized to compete using every tool and technique reasonably at their disposal. Companies have increasingly employed IPRs as competitive tools during the past 30 years of the pro-patent era, frequently with the goal of extracting value directly from their own IPRs whether from licensing revenue or litigation rewards. As IPR competition accelerated, companies and investors have been incentivized to explore new ways of using IPRs. Innovations in IPR exploitation led some companies and investors to develop a class of techniques, labeled here as IP privateering, for the exploitation of third-party IPRs as tools for achieving larger competitive goals.

A corporation or investor serving as the sponsor for an IP privateering engagement employs third-party IPRs as competitive tools. The privateer, a specialized form of NPE, asserts the IPRs against target companies selected by the sponsor. The sponsor's benefits do not typically arise directly from the third party's case against a target but arise consequentially from the changed competitive environment brought about by the third party's IPR assertion.

A topology has been provided for these indirect exploitation tools. The "sponsor" variable may comprise an operating company, an investor, or a hybrid that includes both an operating company and one or more investors. A "discretion level" variable relates to the sponsor's needs for discretion in a given privateering operation. An "indirect monetization focus" variable pertains to how the sponsor will indirectly benefit from the privateering effort. The sponsor's main benefit, or indirect monetization focus, comprises nudging the target into a less competitive position. The identified possibilities for indirect monetization focus include a change in the valuation/stock price of the target, a change in the legal infrastructure, a change in a technology adoption rate related to the target, a change in a business innovation adoption rate related to the target, a change in business relationships to the benefit of the sponsor and to the detriment of the target, and facilitating the licensing of a larger IPR collection not

involved in the privateering operation. The privateer's "knowledge" of the sponsor comprises another variable; the privateer itself does not necessarily know who the sponsor is in all cases. The "sponsor's control level over privateer" comprises another variable and relates to the degree to which the sponsor can control the privateer's actions. The "privateer corporate structure" comprises another variable. Finally, the "profit sharing structure" comprises a final identified variable. In many cases, the sponsor benefits from privateering whether or not it receives rewards from the privateering effort directly. Consequently, the possible profit-sharing structures include no profit-sharing at all, a flat-rate amount, a percentage, and/or a debt repayment. The third-party privateer's motivation comprises collecting a litigation settlement or damages award.

Privateering scenarios can be shaped to fit many competitive scenarios. Privateering may be used by operating companies to change the technology adoption rate between an upstart technology and an incumbent technology, to outsource the licensing of a larger collection of IPRs, to change some aspect of the legal infrastructure, and/or to generally build influence. Privateering may be used by investors to grow existing investments by privateering against competitors in a given technology area, to change the value of the stock price of a public company to temporarily discount shares and/or to facilitate short selling, to change a company's value during investment, and to recoup research costs. Outsourcing patent litigation, one branch of privateering, allows companies to shape their competitive environments and in some instances monetize their IP rights at extremely low cost. While industry experts and IP managers concede that privateering exists, the extent to which various privateering scenarios have occurred, are occurring, or will occur in the future, and which privateering scenarios are possible but presently only hypothetical remains somewhat unknown. They remain unknowable because the sponsor's goal in almost every privateering engagement is stealth and because there are few existing reasons under U.S. law why the complete ownership structure behind a given patent-holding entity must be publicly exposed. Privateering examples discussed above seem to have resulted in the collection of nearly \$3 billion thus far by their sponsors, and possibly an order of magnitude more in revenue losses avoided, although the total amount gained by sponsors remains unclear.

IP privateering is not limited to just operating companies; investor groups also likely privateer as well. In many instances, as discussed below, the potential returns and liabilities for these

investors compares even more favorably than for the operating companies. Hybrid privateering efforts by operating companies and investors also seem to have occurred, especially in instances where the investors are also major stockholders of the operating company that will indirectly benefit from the privateering litigation.

Although privateering per se gives rise to no legal or equitable cause of action, whether the practice should be encouraged is another matter. Since privateering is generally lawful, one cannot easily argue that the practice encourages disrespect for the law. Nevertheless, privateering raises questions about the social utility of IPRs, particularly patents. Even when existing legal causes of action may theoretically come to the aid of the privateering target, the target may still have daunting discovery issues related to finding the sponsor. In market manipulation cases, the target may be unlikely to have the relevant trading data or be able to match it with a party connected to the privateering effort. Consequently, there may be a role for the Antitrust Division of the DOJ and for the SEC to monitor particular forms of privateering behavior and to respond accordingly. Privateering, as a subset of NPE litigation, also raises questions about the impact, or non-impact, of NPEs on the overall economy and investment in research and development. In the absence of information to the contrary, it seems possible that much of the profit from privateering, as well as NPEs, returns to investment rather than being removed from investment. Privateering raises further questions about the oversupply of active and available patents in the so-called pro-patent era and the ease with which they can be acquired and asserted. The impact of privateering on the innovation system and the apparent presence of key innovation system actors in privateering suggests the possible consideration of a more overtly constructed innovation system explicitly designed by all of its major stakeholders, including independent inventors. However, conclusions are difficult to draw with the information presently available and additional investigation seems warranted.

Appendix 1 – Capital Sources for NPE & Privateering Activities

The following list provides the names of Investors in four of Intellectual Ventures' patent-related funds. Disclosure of this information was required by the court in *Xilinx v. Intellectual Ventures Investment Fund I, L.P. et al.*, on May 16, 2011. Some of the operating companies named on the list may have interests more along the lines of licensees than investors.

No.	Investor	Invention Investment Fund		Intellectual Ventures		Notes
		I	II	I	II	
Operating Company						
1.	Adobe Systems Incorporated		✓			
2.	Amazon.com NV Investment Holdings Inc., an affiliate of Amazon.com, Inc.	✓	✓			
3.	American Express Travel Related Services Company, Inc.	✓				
4.	Apple, Inc.	✓	✓		✓	
5.	Cisco Systems, Inc.		✓			
6.	eBay Inc.	✓	✓			
7.	Google Inc.	✓				
8.	Intel Corporation	✓	✓			
9.	Microsoft Corporation	✓	✓	✓	✓	
10.	Nokia Corporation	✓	✓	✓	✓	
11.	Nvidia International Holdings, Inc., an affiliate of Nvidia Corporation	✓	✓			
12.	SAP America, Inc.	✓	✓			
13.	Sony Corporation	✓	✓	✓	✓	
14.	Verizon Corporate Services Group Inc.		✓		✓	

No.	Investor	Invention Investment		Intellectual Ventures		Notes
		I	II	I	II	
15.	Xilinx, Inc.	✓	✓			
16.	Yahoo! Inc.	✓	✓			
Investment Fund						
17.	Allen SBH Investments LLC	✓		✓		Entity related to the Allen & Company LLC
18.	Charles River Ventures	✓	✓	✓	✓	
19.	Commonfund Capital Partners VII, L.P.	✓		✓		Verne Sedlacek is President & CEO
20.	Flag Capital		✓		✓	Diana H. Frazier and Peter Lawrence co-founded Flag
21.	JP Morgan Chase Bank, N.A., as trustee for White Plaza Group Trust	✓		✓		The beneficiaries of the White Plaza Group Trust are unclear
22.	Certain funds of McKinsey and Company, Inc.		✓		✓	
23.	Next Generation Partners V, L.P.	✓		✓		Appears related to Flag Capital
24.	Sequoia Holdings, LLC	✓		✓		Founded by David Beisner
25.	Sohn Partners		✓		✓	
Foundation / Universities / Non-Profits						
26.	Board of Regents of The University of Texas System		✓		✓	
27.	The Board of Trustees of the Leland Stanford Junior University		✓		✓	
28.	Brown University		✓		✓	
29.	Bush Foundation		✓		✓	Established by a former 3M chairman.
30.	Cornell University	✓	✓	✓	✓	
31.	Dore Capital, L.P., and affiliate of The Vanderbilt University	✓		✓		Dore appears to have a relationship with Apax Europe VI-A, L.P.

WINTER 2012]

MODERN IP PRIVATEERING

107

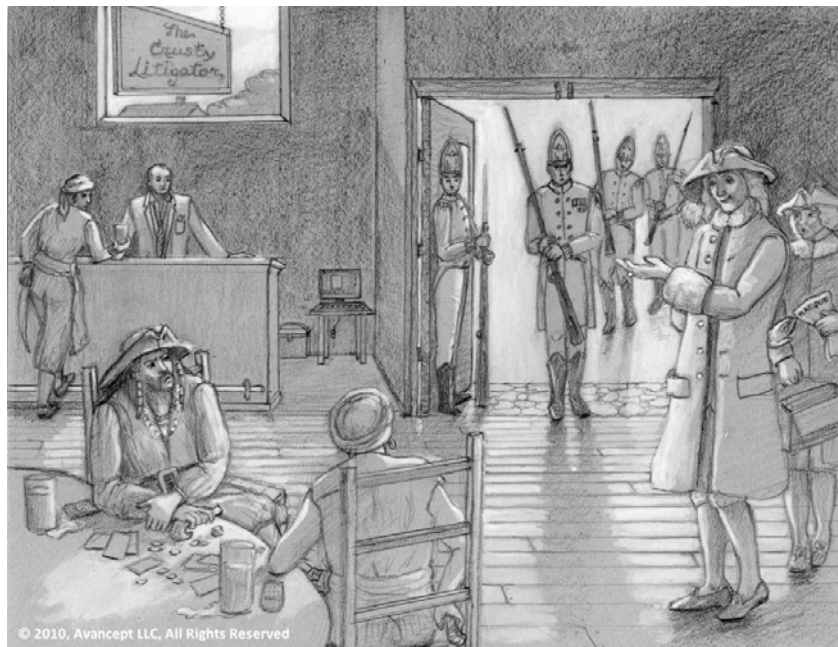
No.	Investor	Invention Investment		Intellectual Ventures		Notes
		I	II	I	II	
32.	The Flora Family Foundation		✓		✓	Founded by William and Flora Hewlett.
33.	Grinnell College		✓		✓	
34.	Howard Hughes Medical Institute	✓	✓	✓	✓	
35.	International Bank for Reconstruction and Development, as trustee		✓		✓	The IBRD is one of five banks comprising the World Bank
36.	Legacy Ventures		✓		✓	Russ Hall, Alan Marty, and Chris Eyre are the managing directors
37.	Mayo Clinic and Mayo Foundation Master Retirement Trust	✓	✓	✓	✓	
38.	Northwestern University	✓	✓	✓	✓	
39.	Reading Hospital		✓		✓	A non-profit hospital located in Reading, Penn.
40.	The Rockefeller Foundation	✓		✓		
41.	Skillman Foundation		✓		✓	A Detroit-based charity that includes a member of the Ford family in its board of directors.
42.	TIFF Private Equity Partners	✓	✓	✓	✓	TIFF: "The Investment Fund of Foundations," is an investment cooperative.
43.	Trustees of the University of Pennsylvania		✓		✓	

No.	Investor	Invention Investment		Intellectual Ventures		Notes
		I	II	I	II	
44.	University of Southern California		✓		✓	
45.	University of Minnesota		✓		✓	
46.	The William and Flora Hewlett Foundation		✓		✓	
Individuals						
47.	Dobkin, Eric	✓	✓	✓	✓	Appears to be Eric Dobkin, an advisory director to Goldman Sachs and Chairman Emeritus of Global Equity Capital Markets
48.	Fields, Richard	✓	✓	✓	✓	This may be Richard Fields, Chairman of Coastal Development, LLC
49.	Gould, Paul	✓		✓		This may be Paul Gould, a director of Allen & Co.
50.	Holiber, Adam		✓		✓	The may be Adam Holiber, president of Summit Equity
51.	Peretsman, Nancy	✓	✓	✓	✓	Appears to be Nancy Peretsman, a director of priceline.com and managing director at Allen & Company LLC

Paper III

Practical Considerations in the Indirect Deployment of Intellectual Property Rights By Corporations and Investors

Limitations on Letters of Marque and Reprisal for Latter Day Sea Dogs



by TOM EWING*

* Thomas Ewing, JD, MS, MA, Licentiate in Industrial Management & Economics (expected 2012). Mr. Ewing is a commercial lawyer and intellectual property counselor. *IAM Magazine* has thrice named him as one of the world's 250 best intellectual property strategists. I am grateful to Prof. Robin Feldman and Prof. Ove Granstrand for their assistance and helpful comments with this article.

I. Introduction	110
A. Overview of IP Privateering and Its Competitive Background	111
B. Purposes and Research Question	114
C. Scope, Limitations, and Methodology	116
D. Outline of the Article	118
II. The Target's Possible Counterclaims Against the Sponsor	119
A. The Target's Counterclaims Paired with Sponsor Backgrounds	121
B. Litigation Sanctions Against a Privateer	122
C. Corporate Formalism and Privateering Organizational Structure	126
D. Lack of Standing and Subject Matter Jurisdiction	131
E. Patent Misuse and Unclean Hands	135
F. Duty of Disclosure and Inequitable Conduct	137
G. Antitrust	138
H. Insider Trading and Market Manipulation	141
I. Tortious Interference and Conspiracy	145
III. Equipping the Privateer	150
A. Privateering Infrastructure	150
B. Finding Suitable IPRs For a Privateering Operation	151
C. The Ease of Locating Suitable IPRs for Privateering	153
IV. Conclusions	157

I. Introduction

Innovations in Intellectual Property Rights (IPR) exploitation motivated companies and investors to develop strategic techniques that facilitate the indirect application of IPRs as tools for achieving competitive goals. A companion article¹ details a further innovation in the indirect application of IPRs, one in which companies do not even need to own IPRs in order to consequentially benefit from their exploitation, which has been labeled “IP privateering.” This article explores certain practical considerations of the IP privateering strategy, such as a target’s possible counterclaims against the sponsor and how a sponsor may outfit a privateering operation.

1. Thomas Ewing, *Indirect Exploitation of Intellectual Property Rights By Corporations and Investors: IP Privateering & Modern Letters of Marque & Reprisal*, 4 HASTINGS SCI. & TECH. L. J. 1 (2011).

A. An Overview of IP Privateering & Its Competitive Background

Competitive pressures have stimulated increasing interest in IPRs and strategies related to their commercial exploitation during the past thirty years of the ongoing pro-patent era. IP managers have explored innovations in the use of IP assets as competitive tools in their own right. The majority of these strategies could be classified as “direct uses” in which a company exploits IPRs developed from the company’s own R&D activities. IP managers honed techniques for conventional IP asset exploitation tools, including but not limited to patent licensing and assertion programs. Over time, innovative IP managers developed techniques for the indirect application of IP assets. These indirect techniques have included buying third-party patents in the technology markets for assertion against competitors and acquiring third-party patents for use in a countersuit in an ongoing infringement litigation.

Increasing IPRs competition stimulated the development of robust IPR markets² and the increasing presence of intermediaries entering the market.³ The rich varieties of IPRs available in these markets enabled the further development of indirect IPR strategies. Over time, these intermediaries have become more and more specialized.⁴ While many intermediaries work towards the further development of a robust market for the efficient exchange of IP

2. See HENRY CHESBROUGH, OPEN INNOVATION. THE NEW IMPERATIVE FOR CREATING AND PROFITING FROM TECHNOLOGY (Harvard Business School Press, 2003); ALFONSO GAMBARDILLA ET AL., STUDY ON EVALUATING THE KNOWLEDGE ECONOMY: WHAT ARE PATENTS ACTUALLY WORTH? THE VALUE OF PATENTS FOR TODAY’S ECONOMY AND SOCIETY (2006).

3. Organisation for Economic Co-Operation and Development, European Patent Office, *Intellectual Property as an Economic Asset: Key Issues In Valuation And Exploitation* 8 (2005), available at <http://www.oecd.org/dataoecd/18/2/35519266.pdf> (“Many large firms have developed internal capabilities for patent management and licensing, but as in other markets a diverse set of intermediaries has also emerged to foster technology markets, more so in the United States than in Europe. Intermediaries include technology licensing offices at public research organisations, Internet-based portals and private firms that offer advice and actively link buyers and sellers of technology. Each type of intermediary has a different customer focus and different level of involvement in transactions, but all play important roles in facilitating partnerships, ensuring confidentiality of partners in a transaction (e.g. protecting privacy in negotiations to avoid competitors knowing about the parties’ interests), offering expertise (need to ensure that the deal corresponds to the parties’ needs) and providing an external perspective on the negotiation.”).

4. IRENE TROY & RAYMUND WERLE, UNCERTAINTY AND THE MARKET FOR PATENTS, (2008), available at: www.mpifg.de/pu/workpap/wp08-2.pdf.

assets,⁵ these same intermediaries can obviously serve indirect exploitation uses extremely well. Patent brokers can conduct negotiations for anonymous parties; patent valuation firms can assist in estimating settlement amounts, and patent acquisition firms, including auction houses, can assist in transitioning patents from one owner to a new, privateering owner. Patent law firms can support all of these functions as well as pioneering new roles not otherwise found in the marketplace.⁶

Over time, what might have once been a fairly simple arrangement within the innovation system has evolved into a complex IPR ecosystem.⁷ The evolving IPR ecosystem features many kinds of entities, distinct business models, patent profiles, and patent strategies.⁸ The most noticeable contemporary players in this ecosystem are the large companies holding enormous portfolios and the aggressive non-practicing entities (NPEs). The aggressive NPEs have emerged in recent years from beyond their early prototypes, in part due to the quality of IPRs available in the market. Billions of new capital has flowed into NPEs such as Intellectual Ventures (“IV”), Acacia, RPX, Round Rock Research, and many others.⁹ These actors play significant roles in shaping the innovation system and interact continuously with other participants such as individual inventors, small companies, research labs and universities.

Operating companies have sought to replicate the IPR strategies of the NPEs in a further refinement of indirect IP strategies. The innovations coalesced as “IP privateering,” the beneficial application of third-party IPRs for a sponsoring entity against a competitor to achieve a corporate goal of the sponsor. In an IP privateering engagement, a corporation or investor serving as the sponsor employs third-party IPRs as competitive tools. The privateer, a specialized

5. CHESBROUGH, *supra* note 2.

6. Specialized patent law firms have been around for more than one hundred years. See *Bristows at-a-glance*, BRISTOWS, http://www.bristows.com/about_us/key_facts (last visited Oct. 9, 2011).

7. See, e.g., Brian Kahin, *The Patent Ecosystem in IT: Business Practice and Arbitrage*, FEDERAL TRADE COMMISSION (Dec. 5, 2008) (submission based on remarks before the Federal Trade Commission), available at <http://www.ftc.gov/bc/workshops/ipmarketplace/dec5/docs/bkahin2.pdf>.

8. *Id.* at 4–5.

9. For a comprehensive list of four of Intellectual Venture’s seven investment funds see Ewing, *supra* note 1, at Appendix 1.

form of NPE,¹⁰ asserts the IPRs against target companies selected by the sponsor. The sponsor's benefits do not typically arise *directly* from the third party's case against a target but arise *consequentially* from the changed competitive environment brought about by the third party's IPR assertion. As discussed in a companion article,¹¹ the sponsor's benefits may include nudging the target into a less competitive position, facilitating the licensing of a larger collection of the sponsor's own IPRs, and causing a beneficial change to the target's share price and/or corporate valuation. The third-party privateer's motivation comprises collecting a litigation settlement or damages award.

IP privateering, as used herein, is defined as: the assertion of IPRs by an entity (the privateer), typically in the form of an NPE, against a target company for the direct benefit of the privateer and the consequential benefit of a sponsor, where the consequential benefits are significantly greater than the direct benefits. The strategy, in part, relies upon the intransparencies of ownership and motivation permitted in the IP system.

Privateering can be shaped to fit many competitive scenarios.¹² Privateering may be used by operating companies to change the technology adoption rate between an upstart technology and an incumbent technology, to outsource the licensing of a larger collection of IPRs, and to change some aspect of the legal infrastructure. Privateering may be used by investors to grow existing investments by privateering against competitors in a given technology area, to change the value of the stock price of a public company to temporarily discount its shares and/or to facilitate short selling, to change a company's value during investment, and to recoup investment research and analysis costs. Outsourcing patent litigation, one branch of privateering, allows companies to shape their competitive environments and in some instances monetize their IP rights at extremely low cost. Sponsoring corporations tend to set the objectives for a privateering operation, assist in assembling the necessary resources for carrying out the plan, and then step aside

10. This article uses the conventional NPE acronym rather than the patent assertion entity (PAE) acronym recently advanced by the Federal Trade Commission. See *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, FEDERAL TRADE COMMISSION (2011) at 8, <http://www.ftc.gov/os/2011/03/110307patentreport.pdf>.

11. Ewing, *supra* note 1.

12. See *id.*

from further hands-on management. Playing a more active role could show the corporate sponsor's hand, the very hand that needs to be obscured in order for the privateering effort to work properly.

IP privateering takes its name from an historic method of waging war so effective that it had to be abolished by treaty.¹³ "Privateering," as it was called, was effective and cheap—the privateer's actions cost the sponsoring government nothing. Privateering, like the creation of corporations, allowed governments to pursue policy objectives without any impact on the treasury. In short, classical privateering removed most obstacles to waging war, save for the opponent's ability to retaliate. IP privateering similarly has the opponent's ability to retaliate as its greatest obstacle, hence the importance of stealth to the sponsor.

Indirect exploitation of IPRs via intermediaries¹⁴ does not per se give rise to a specific legal cause of action against the sponsor in most scenarios. In fact, the sponsor's potential legal liability rarely exceeds that of the third-party privateer who carries out the sponsor's IPR assertion plan. If the privateer avoids liability, so does the sponsor in most instances. Potential sponsor legal liability may give rise to causes of action ranging from tortious interference in business relations to patent misuse, as well as possible market manipulation charges and antitrust problems. A sponsor's greatest potential liability likely rests on adverse business consequences, particularly from public exposure of the sponsor's involvement. Indeed, a sponsor's goals for a privateering operation are often defeated by public exposure. For example, IP privateering only thwarts the "mutually assured destruction" paradigm of defensive patenting so long as the operating company sponsor can hide its links to the privateer and/or plausibly deny control over the privateer. Privateering can often achieve the sponsor's aims well before a decision on the merits of the case brought by the privateer.

B. Purposes and Research Question

This article explores aspects of IP privateering, a strategy in which companies do not even need to own IPRs in order to

13. Int'l Comm. of the Red Cross, *Declaration Respecting Maritime Law*, ICRC (Apr. 16, 1856) available at <http://www.icrc.org/ihl.nsf/INTRO/105?OpenDocument>.

14. These intermediaries can perform more than a mere "outsourced" litigation function. The intermediary's bringing litigation against a target changes the relative competitive landscape between the target and the sponsor to the sponsor's advantage such that the sponsor often benefits whether or not the litigation succeeds.

consequentially benefit from their exploitation. This Article specifically aims to achieve the following purposes:

To explore the options available to targets to retaliate against privateering sponsors and to gauge the extent to which present law is adequate for enjoining privateering where it is discovered.

To evaluate the limits of the commercial uses for this strategy among both corporations and investors.

These research questions are clarified as follows.

1. *To what extent can targets of privateering attacks retaliate against the sponsors simply for privateering alone, as opposed to other causes of action?*

This first research question explores what actions differently situated targets could launch against a privateering sponsor once its presence is discovered. This investigation focuses primarily on legal counterclaims that the target could bring, and specifically focuses on legal counterclaims that the target could bring simply based upon the act of motivating a third party's litigation.

2. *What are the limits on deployment of this strategy by commercial actors?*

This second second research question intends to gauge the extent to which commercial actors may employ the IP privateering strategy. Among other things, an examination is conducted of the ease with which a sponsor may find IPRs in the open market suitable for a privateering operation.

A companion paper explores two foundational research questions.¹⁵ The first research question in that article concerns collecting instances of IP privateering and providing an organizational framework for applications of this strategy. The second research question concerns gauging the extent to which the existing innovation system is sufficiently robust to accommodate the indirect uses of IPRs, such as privateering, and to examine if the components of the innovation system should be more explicitly linked together into an integrated whole.

15. See Ewing, *supra* note 1.

C. Scope, Limitations, and Methodology

The impact of IP privateering can be interpreted in many ways depending on the purposes and scope of the study. This Article has the following scope of analysis and limitations of the results:

1. This study primarily focuses on the identification of an IP strategy that has not previously been identified although it may have been practiced privately for a number of years by various commercial actors. The study explores aspects of this strategy and further studies the potential limitations on its usage. The practitioners' needs for secrecy make collecting actual cases difficult, although many have been collected, and they amount to several billion dollars in economic activity. Nevertheless, the number of cases presently known is limited, rendering it difficult to undertake the types of statistical analyses that one would prefer to utilize.
2. The study is implemented primarily in the United States using US patents and considering the U.S. legal system. Therefore it does not provide a detailed investigation regarding other countries, apart from one possible instance of IP privateering in Germany. Thus, the boundaries and limitations on the strategy discussed in Parts II and III may be substantially different in other legal systems. As a result, the strategy may possibly be differently deployable in other legal settings, and possibly not available at all.

The methodology here has focused on exploratory research, employing various techniques for probing the possible range of IP privateering activity. Once a greater data set of privateering cases has become available, then much more sophisticated empirical analysis can be conducted.¹⁶

The range and potential forms of privateering, which comprise Parts II and III, probe the theoretical limits of what corporate and investor actors could achieve with the privateering strategy and the practical difficulties in equipping a privateer. Part II investigates the limits to which a risk—averse commercial actor may pursue the strategy while still minimizing any possible negative consequences.

16. Many of the managers and practitioners contacted for this research declined to participate on the grounds of confidentiality. As more information about the strategy becomes available, managers and practitioners are likely to become less concerned, albeit not unconcerned, with certain aspects of confidentiality.

Part III discusses practical aspects of finding IPRs to employ in a privateering operation.

This investigation applies existing case law as a methodological touchstone against which any commercial actor would be compelled to test privateering strategies or defenses against the privateering strategies of others. Since there is an absence of case law related to IP privateering, *per se*, I would assume that an entity considering a privateering operation would likely seek legal advice regarding the possibilities for and limitations of such a strategy—and the attorneys providing such advice would be compelled to analyze existing case law in order to predict the range of claims that a target could bring and how a court would react to them. The analysis here attempts to replicate what such advice would most likely resemble under the assumption that the collective mass of such advice would define the effective exploitation limits for the strategy, at least initially, until a body of privateering case law develops in its own right. In this sense, the methodology mirrors that of the early American legal realists, particularly Holmes' predictive theory of law.¹⁷ In essence, the assumption is that the boundaries of a commercial behavior not specifically and expressly subject itself to legal prohibition or regulation will likely be pursued by the reasonable commercial actor in terms of something akin to a cost/benefit analysis.

As Granstrand has observed, law and economics often follow differing methodologies while attempting to find answers to common problems.¹⁸ Economics tends to focus on the aggregate while law tends to focus on specific instances. Thus, one discipline tends to start high and work downward while the other discipline starts small and works up. The IP field lends itself to hybrid approaches. Among other things, IP rights are legal rights that have significance only so long as they can be enforced in court while the motivations for using these rights are almost entirely economic. Thus, the hybrid nature of the IP field arises from its fundamental elements.

Methodologies such as questionnaires and structured interviews have not seemed applicable for this research because many IP managers are not yet aware of the strategy and those IP managers who are aware of the strategy generally have an interest, and possibly

17. Oliver Wendell Holmes, *The Path of the Law*, 10 HARV. L. REV. 457 (1897).

18. OVE GRANSTRAND, CORPORATE INNOVATION SYSTEMS. A COMPARATIVE STUDY OF MULTI-TECHNOLOGY CORPORATIONS IN JAPAN, SWEDEN AND THE USA (2000), available at http://www.lem.sssup.it/Dynacom/files/D21_0.pdf.

a legal obligation, in not spreading information about it. First, an IP manager's knowledge would tend to have arisen from a privateering operation that his firm conducted and one still possibly not known by the target, hence the manager has everything to lose and nothing to gain by discussing the strategy. Second, most IP managers, even IP managers whose firms employ the strategy themselves, would prefer that no one else knows about it. One would not likely expect the IP manager for a major corporation to appear in a public forum, for example, and provide detailed instructions to other companies' IP managers on how to go about privateering. Consequently, the methodology of gleaning existing court litigations for nuggets of information, which time consuming, may in some situations serve as a robust data source.

Comparative case analysis has not been formally conducted because no cases have yet been found where the sponsor lost.¹⁹ Thus, of the known privateering cases, the sponsor has achieved a consequential benefit from all of them. If privateering were to become more common as a strategy, then not only will there be more cases, but there will likely be a great diversity among the cases that lends itself to a comparative analysis. Similarly, if the raw investor data becomes available, then a great deal of analysis can be performed on investor-side IP privateering.

D. Outline of the Article

Part I has provided background information about IP privateering, including the methodologies that have been employed to probe the limits of this strategy. Part II explains how present law may be used to curtail anticompetitive and market manipulative privateering but further observes that effective curtailment may require the intervention of the Securities and Exchange Commission (SEC) and/or the Antitrust Division of the U.S. Department of Justice (DOJ). Part II also examines those forms of privateering that are not clearly anticompetitive or market manipulative and concludes that these forms of privateering will likely continue in the short-to-medium term and may require the intervention of the legislator if their curtailment is desired. Part III discusses aspects of the infrastructure that supports privateering and concludes with a

19. Excluding the *IMS* case, which was conducted for a relatively small amount of money by Intel. See *In re Int'l Meta Sys., Inc.*, No. 1:98-bk-10782 (W.D. Tex. 2002) and Ewing, *supra* note 1, at 135–36.

discussion of how a present patent oversupply seems to facilitate privateering.

II. The Target's Possible Counterclaims Against the Sponsor

A patent defendant may often find its own litigation counsel not terribly interested in investigating whether the plaintiff may have a sponsor. After all, the issue at hand is whether the defendant infringes the asserted patent(s), and not how the plaintiff was enticed into filing the lawsuit. Finding a sponsor provides no defense to infringement.

Assume that you are the CEO of YoungCo, a young innovative company that has developed a replacement technology for the present industry standard for Widget Z. Your company has been sued for patent infringement by NPE LLC.²⁰ Your patent attorneys tell you that you are likely to win the case if it goes to a final judgment—some years from now. The chairman of the board has told you that several prospective investors have backed away since the lawsuit was filed. Your litigators have told you that NPE's representatives will not discuss settlement beyond 15% of the company's gross receipts, which you know would be an unsupportable sum even if the patent was valid and infringed. The CTO tells you that while he was at an annual industry gathering, he heard rumors that NPE LLC was actually funded by LargeCo, the largest manufacturer of conventional Widget Zs. Does one retaliate?

"There's not a lot of money in revenge,"²¹ essentially sums up the target's position—unless the target can discover the sponsor's identity, and then things may change. Knowing that a litigation has been sponsored may provide a helpful tool in settlement. The sponsor's greatest goal often involves discretion. For example, if Company A discovers that Company B has sponsored a privateer's lawsuit, then Company A can approach Company B for settlement terms and/or threaten retaliation. In many instances, retaliation may simply involve making the privateering operation public. Stealth is typically a critical element in IP privateering and the advantages of privateering may vanish if the sponsor's actions see the light of day.

20. Not all corporation records have been searched, but Delaware records show that there is no "NPE LLC" incorporated in Delaware, although there are firms with NPE in their names.

21. THE PRINCESS BRIDE, (Act III Communications, 1987).

Rule 7.1 of the Federal Rules of Civil Procedure requires litigants to disclose their parent corporation and any publicly held corporation owning 10% or more of their stock.²² The law imposes this rule on all litigants. The law's purpose is not to discover litigation sponsors, but to assist judges in disqualifying themselves due to conflicts of interest.²³ Rule 7.1 can easily be circumvented by the resourceful sponsor. Individual courts may impose additional disclosure rules, but none of the disclosure rules requires disclosure of a litigation's sponsor. Some jurisdictions use a local variation of Rule 7.1 known as a "Certification as to Interested Parties," or Local Rule 7.1-1, which states:²⁴

L.R. 7.1-1 Certification as to Interested Parties. 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.²⁵

These additional disclosure rules have proven more effective in revealing potential sponsors than Rule 7.1. For example, Intellectual Ventures involvement in several cases was not disclosed under Rule 7.1 but was later disclosed under Local Rule 7.1-1, including one case in which a major portion of its own investors was disclosed.²⁶ However, even this more inclusive local rule does not necessarily

22. Fed. R. Civ. P. 7.1.

23. See GLEN WEISSEBERGER, *FEDERAL CIVIL PROCEDURE LITIGATION MANUAL* (Matthew Bender, 2010).

24. For example, the Central District of California follows Local Rule 7.1-1. U.S. DIST. CT., CENTRAL DIST. OF CALIFORNIA, *LOCAL RULES*, available at <http://www.cacd.uscourts.gov/cacd/locrules.nsf/a224d2a6f8771599882567cc005e9d79/ddb6b1163100e00388256dc5005973ca?OpenDocument>.

25. *Id.*

26. See, e.g., *Certification of Interested Parties from Oasis Research LLC v. Adrive*, No. 4:10-cv-00435-MHS (E.D. Tex. 2010) (disclosing the financial involvement of "Intellectual Ventures Plateforce Computing, LLC.").

require disclosure of parties with whom the plaintiff is in contract, owes a debt, or the disclosure of parties that encouraged the filing of the litigation but have no actual stake in its outcome.²⁷ Such a requirement in normal civil litigation could require an onerous amount of disclosure.

Likewise, the records for public companies can be less than revealing, while being completely open. The onus on corporate record keeping is to account for how corporate funds have been spent.²⁸ This simply means that the expenses related to privateering must show up in the company's books somewhere. This does not mean that the company's books need a line item that reads "privateering against Competitor X." For a company with more than \$1 billion in annual turnover, camouflaging an expense of a few million (or less) should not be difficult. After a bit of explanation, the company's auditors will also likely not object to the company's books since the activity is legitimate and not obviously illegal. Thus, following the money is not typically possible in privateering cases.²⁹ Of course, privateering is not illegal per se, so there's little incentive for insider whistleblowing, although an insider threatening to reveal all to a competitor target could possibly make for troublesome blackmail.

The following sections provide an overview of the legal causes of action and options that a privateering target might be able to employ against a privateering sponsor once the target has learned that a litigation has been privateered. The target's opportunities for revenge against a sponsor should increase significantly once the target can obtain litigation sanctions against the privateer, but the basis for the sanctions will typically lie in the inapplicability of the IPR used for privateering and not initially in the privateering itself.

A. The Target's Counterclaims Paired with Sponsor Backgrounds

Most of the target's counterattacks depend on first obtaining litigation sanctions against the privateer. This will remove the privilege otherwise accorded plaintiffs in civil litigation. The target's avenues for obtaining sanctions against the privateer come from showing that the litigation is frivolous, that the plaintiff lacks standing

27. Central District of California follows Local Rule 7.1-1, *Supra* note 24.

28. BARRY ELLIOT & JAMIE ELLIOT, FINANCIAL ACCOUNTING AND REPORTING 134-156 (12th ed. 2010).

29. This would be remarkably enlightening if it were possible.

to sue, and possibly from inequitable conduct associated with patent prosecution. The target could theoretically bring an action under the *Kobe* antitrust cases³⁰ without obtaining sanctions against the privateer, although the target would need to make a convincing case against the sponsor for attempting to monopolize a given area. Similarly, the target could bring an action for market manipulation against an investor sponsor, but the practicalities of a target obtaining sufficiently detailed transaction information to bring suit would seem to be exceptionally difficult.³¹

Sponsor	Possible Cause of Action	Note
Operating Company & Investor	If Litigation Sanctions Awarded Against Privateer, then possible causes of action include: Tortious Interference, Antitrust, Patent Misuse, and Conspiracy	Target likely has to breach the formal corporate structure behind the privateering effort organized by the sponsor to succeed
Operating Company	Antitrust under <i>Kobe</i>	The Target will have a heavy burden in proving an attempt to monopolize
Investor	Market Manipulation, Insider Trading, and Conspiracy	Target likely has to breach the formal corporate structure behind the privateering effort organized by the sponsor to succeed

B. Litigation Sanctions Against a Privateer

Many, if not most, of the potential causes of action that a target might have against a privateering sponsor require some showing of wrongdoing on behalf of the intermediary privateer before the sponsor's potential liability can ever be reached. As a strategy against privateering, targets may file more motions for sanctions against privateers during litigation and press harder for courts to grant their sanction motions. The primary form of potential litigation

30. Discussed in Part II-G, *infra*.

31. On the other hand, an agency with investigation powers such as the SEC could relatively easily align its data regarding stock trades in public companies against litigation filings and investigate linkages between the two.

wrongdoing for most privateering cases would presumably lie in bringing an action that should never have been brought, e.g., a frivolous litigation.

Sanctions against a litigant may be appropriate when there has been inappropriate conduct related to a matter in litigation, such as litigation misconduct, vexatious or unjustified litigation, conduct that violates Federal Rules of Civil Procedure 11, or similar infractions.³² Absent misconduct in the litigation, sanctions may be imposed against the patent plaintiff only if both (1) the litigation is brought in subjective bad faith, and (2) the litigation is objectively baseless.³³ This standard presents a fairly low bar to hurdle for the reasonably conscientious privateer and sponsor.

The U.S. Supreme Court has held that the central purpose of Rule 11 is to deter baseless filings.³⁴ Attorney fees for the prevailing party in a litigation may be warranted for misconduct “if both (1) the litigation is brought in subjective bad faith, and (2) the litigation is objectively baseless.”³⁵ Even when monetary sanctions are awarded under Rule 11, courts have held that sanctions should not replace tort damages but instead focus on the discrete event of the offending filing.³⁶ The injured party in a patent case is to be placed, as near as may be, in the situation it would have occupied if the wrong had not been committed.³⁷ Apart from Rule 11, federal courts possess an inherent power to sanction bad faith litigation conduct.³⁸ In addition, attorney fees can be awarded to a prevailing party in a patent case under 35 U.S.C. § 285 whenever the case is proven to be exceptional.

The privateering target will have to overcome the presumption that the assertion of infringement of a duly granted patent is made in

32. See, e.g., *Cambridge Prods. Ltd. v. Penn Nutrients Inc.*, 962 F.2d 1048, 1050–51 (Fed. Cir. 1992); *Beckman Instruments, Inc., v. LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989).

33. *Professional Real Estate Investors v. Columbia Pictures Industries*, 508 U.S. 49, 60–61 (1993); see also *Forest Labs., Inc. v. Abbott Labs.*, 339 F.3d 1324, 1329–31 (Fed. Cir. 2003).

34. *Cooter & Gell v. Hartmarx Corp.*, 496 U.S. 384 (1990).

35. *Brooks Furniture Mfg., Inc. v. Dutailier Int’l, Inc.*, 393 F.3d 1378, 1381 (Fed. Cir. 2005).

36. *Business Guides, Inc. v. Chromatic Communications Enterprises, Inc.*, 498 U.S. 533, 552 (1991).

37. 35 U.S.C.A. § 285 (West 2011).

38. *Chambers v. NASCO*, 501 U.S. 32, 50 (1991) (district court not required to exhaust all other sanctioning avenues before exercising its inherent power); see also *North Am. Watch v. Princess Ermine Jewels*, 786 F.2d 1447, 1451 (9th Cir. 1986).

good faith.³⁹ Thus, the underlying improper conduct and the characterization of the case as exceptional must be established by clear and convincing evidence.⁴⁰ For example, a losing plaintiff in a patent case typically avoids sanctions by showing that it undertook reasonable pre-litigation steps such as obtaining infringement opinions, conducting an infringement investigation, making claim charts, and serving notice of infringement on the defendant.⁴¹ Even for an exceptional case, the decision to award attorney fees and the amount thereof are within the trial court's discretion.⁴²

As a further aid to the privateer, the enforcement of patent rights that are reasonably believed to be infringed does not entail a special penalty just because the patentee is unsuccessful, although the entirety of a patentee's conduct may be considered in determining whether to award sanctions.⁴³ In addition, a duly granted patent is a grant of the right to exclude all infringers.⁴⁴

The U.S. Supreme Court has advised appellate courts to apply "an abuse-of-discretion standard in reviewing a district court's Rule 11 determination."⁴⁵ Before awarding Rule 11 sanctions, a district court itself must conduct a two-prong inquiry to determine (1) whether the complaint or the relevant document is legally or factually "baseless" from an objective perspective, and (2) if the attorney has conducted "a reasonable and competent inquiry" before signing and filing it.⁴⁶

39. *Springs Willow Fashions, LP v. Novo Indus., LP*, 323 F.3d 989, 999 (Fed. Cir. 2003).

40. *Beckman Instruments v. LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989).

41. *See Brooks Furniture*, 393 F.3d at 1386.

42. *See S.C. Johnson & Son, Inc. v. Carter-Wallace, Inc.*, 781 F.2d 198, 201 (Fed. Cir. 1986) (even an exceptional case does not require in all circumstances the award of attorney fees).

43. *See generally National Presto Indus., Inc. v. West Bend Co.*, 76 F.3d 1185, 1197 (Fed. Cir. 1996) ("The trial judge's discretion in the award of attorney fees permits the judge to weigh intangible as well as tangible factors: the degree of culpability of the infringer, the closeness of the question, litigation behavior, and any other factors whereby fee shifting may serve as an instrument of justice.").

44. *The United States v. United States Steel Corp.*, 251 U.S. 417, 451 (1920) ("The law does not make mere size an offense.").

45. *Cooter & Gell v. Hartmarx Corp.*, 496 U.S. 384, 405 (1990).

46. *Christian v. Mattel, Inc.*, 286 F.3d 1118, 1127 (9th Cir. 2002) (quoting *Buster v. Greisen*, 104 F.3d 1186, 1190 (9th Cir. 1997)).

Under 35 U.S.C. § 285, a “court in exceptional cases may award reasonable attorney[s] fees to the prevailing party.”⁴⁷ Section 285 must be interpreted against the background of the Supreme Court’s decision in *Professional Real Estate Investors, Inc. v. Columbia Pictures Industries, Inc.*⁴⁸ There, the Court recognized that the right to bring and defend litigation implicated First Amendment rights and that bringing allegedly frivolous litigation could only be sanctioned if the lawsuit was “objectively baseless in the sense that no reasonable litigant could realistically expect success on the merits.”⁴⁹ Only if the challenged litigation is objectively meritless may a court examine the litigant’s subjective motivation.⁵⁰

Relying on *Professional Real Estate*, the Federal Circuit has held that absent misconduct during patent prosecution or litigation, sanctions may be imposed against a patent plaintiff “only if both (1) the litigation is brought in subjective bad faith, and (2) the litigation is objectively baseless.”⁵¹ The Federal Circuit has held that an infringement action “does not become unreasonable in terms of [§ 285] if the infringement can reasonably be disputed. Infringement is often difficult to determine, and a patentee’s ultimately incorrect view of how a court will find does not of itself establish bad faith.”⁵²

Under this rigorous standard, the plaintiff’s case must have no objective foundation, and the plaintiff must actually know this. Both the objective and subjective prongs of “must be established by clear and convincing evidence.”⁵³ The Federal Circuit recognized a “presumption that the assertion of infringement of a duly granted patent is made in good faith.”⁵⁴ To be objectively baseless, the infringement allegations must be such that no reasonable litigant

47. *Superior Fireplace Co. v. Majestic Prods. Co.*, 270 F.3d 1358, 1376 (Fed. Cir. 2001).

48. *Professional Real Estate Investors v. Columbia Pictures Industries*, 508 U.S. 49 (1993).

49. *Id.* at 60.

50. *Id.*

51. *Id.*; see also *Wedgetail Ltd. v. Huddleston Deluxe, Inc.*, 576 F.3d 1302, 1304–06 (Fed. Cir. 2009) (refusing to find patentee’s unsuccessful case exceptional under *Brooks Furniture*).

52. *Brooks Furniture Mfg., Inc. v. Dutailier Int’l, Inc.*, 393 F.3d 1378, 1384 (Fed. Cir. 2005).

53. See *Wedgetail*, 576 F.3d at 1304.

54. See *Brooks Furniture*, 393 F.3d at 1382, (citing *Springs Window Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 999 (Fed. Cir. 2003)).

could reasonably expect success on the merits.⁵⁵ Other potential counterclaims, such as antitrust, do not factor into this analysis.

As previously mentioned, sponsors and privateers have reasons for being stealthy. Avoiding sanctions in the event that they lose a case presents another reason for sponsor stealth. While not technically actionable, a court aware of privateering might view the plaintiff privateer and the sponsor in a less favorable light. The Federal Circuit, for example, prefaced one sanctions award by describing the plaintiff's triumphant conduct as follows:

As stated in its 1987 Annual Report, Refac's primary business is licensing and technology transfer, with a staff of patent law experts "prepared to litigate without financial risk to its clients." According to Refac's then president, Phillip Sperber, "It only makes sense to use the cost of litigation as a bargaining leverage to force a settlement on terms favorable to the party that can litigate the matter to death without worrying about the cash flow." Sperber, *Overlooked Negotiating Tools*, *Les Nouvelles*, June 1985, at 81.⁵⁶

These prior remarks likely harmed Refac's arguments against its own liability for sanctions. Consequently, discretion should remain an ever more useful tool for privateers and their sponsors.

C. Corporate Formalism and Privateering Organizational Structures

The privateering target that succeeds with a Rule 11 motion and/or locates an appropriate cause of action that could be used against a privateering sponsor may discover that the sponsor relied upon various corporate formalisms to create difficult obstacles to hurdle. The typical sponsor, as discussed below, has access to capital and legal resources and has likely prepared for most adverse contingencies.

Among other things, the sponsor's legal counsel has likely constructed a corporate structure that will minimize the legal claims that can be brought against the sponsor directly. Many known NPEs have fairly complicated ownership and management structures. For example, Searete LLC is a fairly well-known Intellectual Ventures

55. *Dominant Semiconductors Sdn. Bhd. v. OSRAM GmbH*, 524 F.3d 1254, 1260 (Fed. Cir. 2008).

56. *Refac Int'l, Ltd. v. Hitachi, Ltd.*, 921 F.2d 1247, 1248 (Fed.Cir.1990) (citing *Refac Int'l, Inc. v. IBM, et al.*, 710 F. Supp. 569, 571 (D.N.J.1989)).

shell company.⁵⁷ IV parks many of its “inventioneering” patent applications in Searete.⁵⁸ Searete is a Delaware company with a presence in Nevada.⁵⁹ Searete’s official manager in Nevada is “Nevada Licensing Manager, LLC,” which is a Nevada corporation.⁶⁰ Nevada Licensing Manager’s own manager is “Nevada Assets, LLC,” which is a Delaware Company.⁶¹ At some point, Nevada Assets, LLC presumably connects with Intellectual Ventures, LLC or one of IV’s many investment funds. In short, the ownership and management structures for NPEs can be complicated, and various state corporation laws complicate the process of finding out who the real directors and managers are for a given limited liability company.⁶²

Fig. 1 illustrates a possible ownership structure for a privateering operation. As shown in Fig. 1, a target has been sued for patent infringement by a privateering company. The privateering company is owned by an “owner 1” company and at least one other investor. The “owner 1” company is itself owned by an “owner 2” company and at least one other investor. The “owner 2” company is owned by the sponsor and at least one other investor. The investors themselves could presumably be “friends” of the sponsor (e.g., major investors). The structure set out in Fig. 1 may be fairly easy to understand, once

57. John Letzing, *Microsoft’s Big Brains Spill Into Patent Firm*, MARKETWATCH, (Feb. 4, 2009, 6:07 PM), <http://www.marketwatch.com/story/microsofts-big-brains-spill-over-patent>.

58. *Id.*

59. Delaware Corporations file 3776428 shows that Searete LLC was formed on Mar. 12, 2004. *Division of Corporations – Online Services*, DELAWARE DEPARTMENT OF STATE, <https://delecorp.delaware.gov> (search “3776428”) (last visited Oct. 9, 2011). Nevada Corporations records show that Searete LLC, Nevada Corporate ID NV20041267664 was registered in Nevada on Nov. 15, 2004. *Business Entity Search*, NEVADA SECRETARY OF STATE, <http://nvsos.gov/sosentitysearch/CorpSearch.aspx> (search “NV20041267664”) (last visited Oct. 9, 2011).

60. *Id.*; Nevada Corporation records show that Nevada Licensing Manager, Nevada Corporate ID NV20041268216 was created on Nov. 15, 2004. *Business Entity Search*, NEVADA SECRETARY OF STATE, <http://nvsos.gov/sosentitysearch/CorpSearch.aspx> (search “NV20041267664”) (last visited Oct. 9, 2011).

61. Delaware Corporations file 3881571 shows that Nevada Assets, LLC was also created on Nov. 15, 2004. *Division of Corporations – Online Services*, DELAWARE DEPARTMENT OF STATE, <https://delecorp.delaware.gov> (search “3881571”) (last visited Oct. 9, 2011).

62. 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.

the information is revealed.⁶³ However, all the target may know in some instances is the ownership of the privateer, and a court may be reluctant to grant additional discovery for finding the owners of Owner 1 without first having some showing of a cause of action against the owners of Owner 1 by the target, and similarly may be even more reluctant to grant discovery related to the owners of Owner 2, especially if the court can be persuaded by Owner 2's counsel, among others, that such inquiries amount to harassment.⁶⁴ Thus, explaining to a court that the sponsor is the party who has motivated the action of the privateer may be difficult to articulate given the corporate formalisms and number of other parties involved. The plaintiff-side parties would all presumably claim that their interest in the litigation was simply to seek redress for the financial loss engendered by the defendant's infringement. Creating this ownership structure would only require a few thousand dollars in legal costs and government fees.⁶⁵

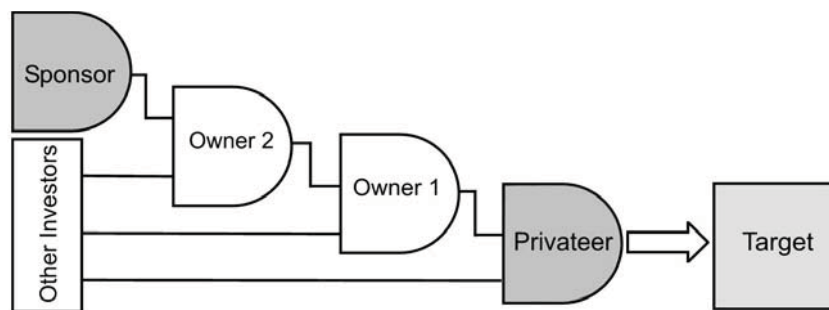


Figure One. Example Ownership Structure

Webvention, LLC, mentioned above, provides a real-life example of an ownership structure that is possibly even simpler than the one shown in Fig. 1 yet has baffled many observers.⁶⁶ Webvention

63. This analysis has been conducted from the target's point of view. The tax authorities would be better positioned to understand the ownership situation, but this information would not necessarily be available to the target.

64. The structure may be even more difficult to unravel if Owner 2 instead of having an ownership interest in Owner 1 is instead a secured creditor of Owner 1.

65. A Delaware Limited Liability Company can be established for as little as \$285. *Delaware Incorporation Services from The Delaware Company*, THE DELAWARE COMPANY, http://www.thedelawarecompany.com/quote_and_compare.asp (last visited Oct. 16, 2011).

66. Josh Rosenthal, *Is Nathan Myhrvold's Intellectual Ventures Behind The IOS In-App Purchase Patent Troll Job?*, EDIBLE APPLE BLOG (May 13, 2011), <http://www.>

obtained a group of patents from Ferrara Ethereal, LLC, a well-known Intellectual Ventures shell company in 2009. The Webvention patents were obtained by merger of Ferrara Ethereal, a Nevada corporation, into Webvention, a Texas company.⁶⁷ On the same day that Webvention, LLC was created in Texas, a Webvention Licensing LLC was also created.⁶⁸ The Texas filing papers also mention a Delaware company named Webvention Holding, LLC.⁶⁹ The corporate filing papers for Webvention were signed by an attorney on behalf of the companies' owners.⁷⁰ This same attorney has signed all the power of attorney documents filed with the USPTO. One filing paper mentioned that the attorney was working for Philip Vachon,⁷¹ who may possibly be the president of Liberate Technologies and the Interstate Baking Company.⁷²

However, the exact ownership for these Webvention companies remains uncertain, and even though Webvention has sued a number of different companies for infringement, no further information has been forthcoming publicly. Webvention's staff appears to be independent of Intellectual Ventures. Further analysis by some researchers has led to suspicions that Webvention may be more tightly tethered to IV than previously believed.⁷³ In any event, even a web of as few as three companies can be used to thwart public knowledge of ownership. The only public parties, excluding government agencies, who could pierce this information barrier are attorneys operating under a broad discovery order in litigation, and

edibleapple.com/is-nathan-myhrovlds-intellectual-ventures-behind-the-ios-in-app-purchase-patent-troll-job/#comments; J. Damus, *Is Intellectual Ventures Behind Apple IOS In-App Purchase Lawsuit Threats? We Think So.*, WIRELESS GOODNESS BLOG (May 15, 2011), <http://www.wirelessgoodness.com/2011/05/15/is-intellectual-ventures-behind-apple-ios-in-app-purchase-lawsuit-threats-we-think-so/>; Joff Wild, *Is Intellectual Ventures Making A Big Move To Snare Apple As A Licensee?*, IAM BLOG (May 16, 2011), <http://www.iam-magazine.com/blog/Detail.aspx?g=c28a272d-3afd-49f6-9d64-aaa2ff595e97>.

67. See *USPTO assignments on the Web*, U.S. PATENT OFFICE (July 25, 2011), <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignor Name" field for "Ferrara Ethereal," showing execution dates to Webvention on Nov. 16, 2009).

68. Corporate filing records available from the Texas Secretary of State's office.

69. Delaware Secretary of State records indicate that Webvention Holdings was created on July 22, 2009.

70. Corporate filing records, *supra* note 68.

71. *Id.*

72. See *Philip A. Vachon Appointed to IBC Board of Directors*, PR NEWswire (Mar. 6, 2007), <http://www.prnewswire.com/news-releases/philip-a-vachon-appointed-to-ibc-board-of-directors-51635777.html>.

73. See Rosenthal, *supra* note 66.

even these attorneys may have to conduct their inquiry under a discovery protective order that may prevent them from sharing this information even with their client. In short, a target might know after a litigation has been filed something about the ownership of the entity that has sued it, but the target is highly unlikely to have any guarantee about knowing who owns the entity prior to the litigation if the entity wishes to cloak its ownership.

A corporation is normally regarded as a legal entity separate and distinct from its stockholders, officers and directors. Under the alter ego doctrine, however, where a corporation is used by another entity to perpetrate fraud, circumvent a statute, or accomplish some other wrongful or inequitable purpose, a court may disregard the corporate entity and treat the corporation's acts as if they were done by the persons actually controlling the corporation.⁷⁴

The U.S. Supreme Court itself has said that a key predicate in disregarding corporate formalities is whether a new party to a case is not a distinct legal entity from the party already in the case. In the structure set out in Fig. 1 above, the sponsor is formally a distinct legal entity from the privateer.⁷⁵ Like the Supreme Court, California courts recognize that "[a]lter ego is an extreme remedy, sparingly used."⁷⁶ Thus, the target will almost certainly have to address the alter ego doctrine, also known as "piercing the corporate veil," in order to bring an action directly against the sponsor. Much of alter ego law comes from state law which for patent cases will be applied by federal courts operating within state borders.⁷⁷

In order to disregard corporate formalities, the target will need to show: (1) that there is such unity of interest and ownership that the separate personalities of the corporations no longer exist and (2) that, if the acts are treated as those of one corporation alone, an inequitable result will follow.⁷⁸ The issue is whether in a particular case and for the purposes of that case, "justice and equity can best be accomplished and fraud and unfairness defeated by a disregard of the

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

75. See *Neon v. Adams USA, Inc.*, 529 U.S. 460, 470–71 (2000).

76. *Sonora Diamond Corp. v. Superior Court*, 83 Cal. App. 4th 523, 539 (2000); accord *Dole Food Co. v. Patrickson*, 538 U.S. 468, 475 (2003).

77. See *Levander v. Prober*, 180 F.3d 1114, 1121 (9th Cir. 1999); *Katzir's Floor & Home Design, Inc. v. M-MLS.com*, 394 F.3d 1143, 1146–47 (9th Cir. 2004).

78. See *Automotriz del Golfo de Cal. v. Resnick*, 47 Cal. 2d 792, 795 (1957); *Sonora Diamond*, 83 Cal. App. 4th 523 at 537–39; *Associated Vendors, Inc. v. Oakland Meat Co.*, 210 Cal. App. 2d 825, 838–40 (1962).

distinct entity of the corporate form.”⁷⁹ The burden of proving alter-ego liability lies with the moving party⁸⁰ by a preponderance of the evidence.⁸¹

Targets seeking recompense (and revenge) may also have to contend with the general rule that there is only one final judgment in a litigation.⁸² In other words, if a target seeks sanctions against a privateer for bringing a case and not the sponsor, then the target may have difficulty later bringing an action against the sponsor if the sponsor can convincingly argue that the target could have brought the action against the sponsor during the first case.

While the occurrence and knowledge of privateering cases is relatively low, the typical target will be more likely not to retaliate against the sponsor by filing a counterclaim. The barriers provided by legal formalisms alone are likely sufficient to thwart the typical target’s counterattack until judges become more sensitive to the issues. One of the reasons for bringing a privateering case is to create management distraction—plotting revenge against a sponsor could possibly result in an enormous management distraction for the target and have inadvertently furthered the sponsor’s goals.

D. Lack of Standing and Subject Matter Jurisdiction

Sponsors who retain too many rights in the patents they provide their privateers may find their proxies’ cases dismissed for lack of standing. This particular issue is most likely to arise in those privateering cases where the sponsor has either outsourced a portion of its litigation/licensing efforts to a proxy and/or where the sponsor is distrustful of the privateer.

This standing and subject matter jurisdiction issue arose recently in *Picture Frame Innovations, LLC v. Eastman Kodak Co.*⁸³ Picture

79. Kohn v. Kohn, 95 Cal. App. 2d 708, 708 (1950).

80. Minifie v. Rowley, 202 P. 673, 676 (1921).

81. Wollersheim v. Church of Scientology Int’l, 69 Cal. App. 4th 1012, 1017 (1999).

82. See CAL. CIV. PROC. CODE § 577 (West 2011) (“A judgment is the final determination of the rights of the parties in an action or proceeding.”); see also Vallera v. Vallera, 148 P.2d 694 (1944) (“There can be but one final judgment in an action, and that is one which in effect ends the suit in the court in which it was instituted, and finally determines the rights of the parties.”).

83. Memorandum in Support of Defendant Eastman Kodak Co.’s Motion to Dismiss for Lack of Subject Matter Jurisdiction, Picture Frame Innovations, LLC v. Eastman Kodak Co., No. 1:09-CV-04888, 2010 WL 5342828 (N.D. Ill. Aug. 16, 2010) [hereinafter *Kodak’s Motion to Dismiss*].

Frame Innovations (PFI) had purchased a patent from Viviana Research LLC,⁸⁴ likely one of Intellectual Ventures shell companies.⁸⁵ The Niro, Scavone law firm represented PFI, thus ironically linking IV's vice chairman Peter Detkin with Ray Niro, the attorney for whom Detkin coined the well-known invective "patent troll."⁸⁶

Standing issues could arise in a privateering case having a similar factual background to the *PFI* case. The outcome would depend on precisely how the sponsor and privateer worded their purchase agreement for the asserted patent. Kodak brought a motion early in the *PFI* case seeking to have the case dismissed on the grounds that PFI did not obtain sufficient rights from Viviana in order to bring the lawsuit.⁸⁷ Kodak argued that "The question for this Court to decide is whether IV (through Viviana) can succeed in its attempt to 'outsource' enforcement of patents against certain enumerated targets, all the while retaining substantial rights for itself..."⁸⁸ Kodak enumerated five patent rights retained by Viviana and asked the court to compare the sales document by which Viviana acquired the patent against the sales document by which Viviana sold the patent to PFI, arguing that PFI only obtained a "hunting license" from Viviana which did not confer standing.⁸⁹ PFI opposed Kodak's motion,⁹⁰ and the case settled without the court having ruled on it.⁹¹ It is not presently known what role, if any, that the motion played in the parties' settlement discussions.

84. Patent assignment query of "Viviana" showing an execution date to PFI of June 8, 2009, UNITED STATES PATENT AND TRADEMARK OFFICE, <http://assignments.uspto.gov/assignments/?db=pat> (search in "Assignor Field" field for "Viviana"; then follow "PAT#" link).

85. See Tom Ewing, *A Study of The Intellectual Ventures Portfolio In the United States: Patents & Applications*, 2nd Edition, Version 2.4 (May 2011) (Sample Report), at 7 (downloadable from <http://www.avancept.com/Publications.html>).

86. Zusha Elinson, *Intellectual Venture Takes Indirect Route to Court*, Recorder, Sept. 1, 2009.

87. Kodak's Motion to Dismiss, *supra* note 83.

88. *Id.* at 5.

89. *Id.*

90. Picture Frame Innovations, LLC's Consolidated Opposition to Eastman Kodak Co.'s Motion to Dismiss Pursuant to Fed. Rule of Civil Procedure 12(b)(6), *Picture Frame Innovations, LLC v. Eastman Kodak Co.*, No. 1:09-CV-04888, 2009 WL 5778257 (N.D. Ill. Nov. 5, 2009).

91. The PFI case settled on undisclosed terms on Jan. 5, 2011. Agreed Order of Dismissal, *Picture Frame Innovation, LLC v. Eastman Kodak Co.*, No. 1:09-CV-04888, 2011 WL 1326089 (N.D. Ill. Jan. 5, 2011).

Standing issues may arise from two separate grounds—constitutional standing and prudential standing. Constitutional standing cannot be cured after a plaintiff has filed its lawsuit. Standing to sue is a constitutional prerequisite to maintaining an action in federal court. To establish standing in accordance with Article III of the U.S. Constitution, the plaintiff must show: (1) an injury in fact; (2) a causal connection between the defendant’s action and injury; and (3) that the injury can be redressed by the relief requested.⁹² To establish prudential standing, the plaintiff must show that: (1) the case rests on the plaintiff’s own legal rights and interests and not those of third parties; (2) the harm caused to the plaintiff does not involve an abstract question best left to the representative branches, and (3) the plaintiff’s complaint falls with the zone of interests to be protected or regulated by the statute or constitution guarantee in question.⁹³

A plaintiff has standing to sue for patent infringement only where it holds “all substantial rights” in the patent.⁹⁴ When a plaintiff lacking sufficient rights brings suit, that plaintiff lacks prudential standing to sue on his own, and the suit must be dismissed, or additional holders of rights under the patent must be joined as parties to the suit, e.g., as appropriate given the plaintiff’s status as either an exclusive or a nonexclusive licensee.⁹⁵ Where a plaintiff receives patent rights pursuant to an agreement, whether the agreement conveys standing on the transferee depends upon whether the parties intended the transferor to surrender all substantial rights in the patent.⁹⁶

The Federal Circuit has held that if a plaintiff lacks constitutional standing under Article III, the suit must be dismissed, and the jurisdictional defect cannot be cured by the addition of a party with

92. See *Hein v. Freedom Religion Found, Inc.*, 551 U.S. 587, 587 (2007); *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 570 (1992) (Article III standing must be present at the time the party brings suit); *Steel Co. v. Citizens for a Better Env’t*, 523 U.S. 83, 95 (1998) (arguing that standing cannot be conferred by agreement of the parties).

93. *Trump Hotels & Casino Resorts, Inc. v. Mirage Resorts, Inc.*, 140 F.3d 478, 484–485 (3d Cir. 1998).

94. *Alfred E. Mann Found. For Scientific Research’ v. Cochlear Corp.*, 604 F.3d 1354, 1360 (Fed. Cir. 2010) (“A patent is, ‘in effect, a bundle of rights, which may be divided and assigned, or retained in whole or in part.’” (citation omitted)).

95. *Id.*

96. See *Vaupel Textilmaschinen KG v. Meccanica Euro-Italia SpA*, 944 F.2d 870, 874 (Fed. Cir. 1991).

standing.⁹⁷ Only the party that owns or controls all substantial rights in a patent can enforce rights controlled by that patent.⁹⁸ The transfer of the exclusive right to make, use, and sell products or services under the patent is vitally important to an assignment.⁹⁹ In those instances where the plaintiff has Article III (constitutional) standing but lacks prudential standing, then a later assignment of the patent may cure this standing defect.¹⁰⁰

The mere transfer of rights solely for enforcement purposes is not enough to create standing, according to the Federal Circuit.¹⁰¹ In addition, the right to sue is illusory and carries no weight where that right has been undercut by transferor's retained right to license the litigation targets.¹⁰² Thus, sponsors and privateers need to be careful in how they craft agreements, especially in outsourced licensing scenarios.

Federal Rule of Civil Procedure 12(b)(1)¹⁰³ authorizes a court to dismiss a complaint if the court lacks subject matter jurisdiction over the plaintiff's claim, or the plaintiff lacks standing to bring its claim. Motions brought under Rule 12(b)(1) may present either a facial or factual challenge to the court's subject matter jurisdiction. In reviewing a factual challenge to the court's subject matter jurisdiction, the court is not confined to the allegations of the complaint, and no presumption of truthfulness attaches to the plaintiff's allegations.¹⁰⁴ The court may consider evidence outside the pleadings, including affidavits, depositions, and testimony, to resolve any factual issues

97. See *Schreiber Foods, Inc. v. Beatrice Cheese, Inc.*, 402 F.3d 1198, 1203 (Fed. Cir. 2005); *Paradise Creations, Inc. v. U V Sales, Inc.*, 315 F.3d 1304, 1309 (Fed. Cir. 2003); *Gaia Techs., Inc. v. Reconversion Techs., Inc.*, 93 F.3d 774, 779 (Fed. Cir. 1996) (arguing that a subsequent purchase of an interest in the patent in suit does not confer Article III standing).

98. *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1551 (Fed. Cir. 1995) (en banc). See generally *Intellectual Prop. Dev., Inc. v. TCI Cablevision of Cal., Inc.*, 248 F.3d 1333 (Fed. Cir. 2001).

99. *Alfred E. Mann Found'n v. Cochlear Corp.*, 604 F.3d 1354, 1360 (Fed. Cir. 2010) (citing *Propat Int'l Corp. v. RPost, Inc.*, 473 F.3d 1187, 1191 (Fed. Cir. 2007)).

100. *Ipventure, Inc. v. Prostar Computer, Inc.*, 505 F.3d 1324 (Fed. Cir. 2007).

101. See *Alfred E. Mann Found'n*, 604 F.3d at 1360; *AsymmetRx, Inc. v. Biocare Med., LLC*, 582 F.3d 1314, 1319 (Fed. Cir. 2009).

102. See *Speedplay, Inc. v. Bebop, Inc.*, 211 F.3d 1245, 1251 (Fed. Cir. 2000) (holding that a licensee's right to grant royalty-free sublicenses to defendants sued by the licensor rendered illusory the licensor's right to sue).

103. See FED. R. CIV. P. 12(b)(6).

104. See *Mortensen v. First Fed. Sav. and Loan*, 549 F.2d 884, 891 (3d Cir. 1977).

bearing on jurisdiction.¹⁰⁵ Pursuant to Rule 12(b)(3), subject matter jurisdiction may be challenged at any time during the course of a case and may be raised *sua sponte* by the court.¹⁰⁶ Once the court's subject matter jurisdiction over a complaint is challenged, the plaintiff "must bear the burden of persuasion" and establish that subject matter jurisdiction exists.¹⁰⁷ If the court has already rendered a judgment, Federal Rule 60(b)(3) provides relief from judgment where there has been fraud, misrepresentation, or other misconduct.¹⁰⁸

E. Patent Misuse and Unclean Hands

The patent misuse and unclean hands doctrines may not provide much assistance to the average privateering target. Patent misuse is an affirmative defense for patent infringement and/or mitigation of infringement damages that may be used in instances where the plaintiff patent owner has engaged in a fairly short list of bad acts.¹⁰⁹ These bad acts include:

- Improper expansion of the patent's term or scope;
- Inequitable conduct in the procurement or enforcement of the patent; and
- Violation of the antitrust laws.

The Federal Circuit has characterized patent misuse as the patentee's act of "impermissibly broaden[ing] the 'physical or temporal scope' of the patent grant with anticompetitive effect."¹¹⁰ The patent misuse doctrine is closely tied to the equitable defense of "unclean hands." Equitable defenses tend to be available as defenses for equitable remedies,¹¹¹ although the U.S. Supreme Court tied "unclean hands" to patent misuse nearly 100 years ago.¹¹²

105. *See Gotha v. United States*, 115 F.3d 176, 179 (3d Cir. 1997).

106. FED. R. CIV. P. 12(b)(6).

107. *Kehr Packages Inc. v. Fidelcor, Inc.*, 926 F.2d 1406, 1409 (3d Cir. 1991).

108. *Schreiber Foods, Inc. v. Beatrice Cheese, Inc.*, 305 F. Supp. 2d 939, 959–60 (E.D. Wis. 2004), *aff'd, rev'd on other grounds* 402 F.3d 1198, 1202–05 (Fed. Cir. 2005).

109. *See, e.g., B.B. Chem. Co. v. Ellis*, 314 U.S. 495, 499 (1942).

110. *Windsurfing Int'l, Inc. v. AMF, Inc.*, 782 F.2d 995, 1001 (Fed. Cir. 1986).

111. Equitable remedies tend to be remedies other than the payment of damages, such as remedies that involve an injunction or require specific performance of an action.

112. *See Motion Picture Patents Co. v. Univ. Film Mfg. Co.*, 243 U.S. 502 (1917) (holding unenforceable a restriction that a user of a patented film projector must use it to screen only such films as the patentee authorized); *see also Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942) (tie-in between patented salt dispenser machine and unpatented salt).

The patent misuse doctrine that arose in the case law has been further circumscribed by statute. The U.S. Supreme Court has recognized that Congress enacted Section 271(d) of the Patent Act not to broaden the doctrine of patent misuse, but to confine its boundaries.¹¹³ Patent misuse under 35 U.S.C. § 271(d) states:

No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following:

- (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent;
- (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent;
- (3) sought to enforce his patent rights against infringement or contributory infringement;
- (4) refused to license or use any rights to the patent; or
- (5) conditioned the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned.¹¹⁴

The wording of Sec. 271(d) does not implicate activities like privateering as an exception; hence, patent misuse is still theoretically possible under the “expansion” and “antitrust” prongs discussed above. If the inequitable conduct prong arose in a privateering case, it would more likely pertain to acts performed by the original owner of the patent and not the privateer or its sponsor, as inequitable conduct tends to occur during patent prosecution and privateering involves only issued patents.

The Federal Circuit, recognizing the narrow scope of the patent misuse doctrine, has 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

113. See *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 201 (1980).

114. Subsection (d) amended Nov. 19, 1988, Pub. L. No. 100-703, § 201, 102 Stat. 4676.

that may have anticompetitive effects.¹¹⁵ So, even if privateering is “morally wrong” or an “economic danger,” patent misuse is unlikely to provide the target with a specific legal avenue to demonstrate that it was been harmed.

When found, patent misuse renders a patent unenforceable, but the period of unenforceability ends if the patent owner can demonstrate “purge” of the misuse—that the misuse has been abandoned and the consequences of the misuse fully dissipated.¹¹⁶ Patent misuse also has been found in certain circumstances in which conduct did not rise to the level of an antitrust violation.¹¹⁷ It generally has been held, however, that the challenged misuse must relate to the patent-in-suit.¹¹⁸

The Federal Circuit has further stated that “[t]he key inquiry [for patent misuse] is whether, by imposing conditions that derive their force from the patent, the patentee has impermissibly broadened the scope of the patent grant with anticompetitive effect.”¹¹⁹ In a privateering case, the typical privateer will not have imposed any conditions on the target and will thus not have expanded the scope of the patent grant although arguably expanding the business uses of the patent grant.

F. Duty of Disclosure & Inequitable Conduct

New patent owners sometimes file broadening reissue applications for newly acquired patents.¹²⁰ In such instances, the new owner assumes the duty of disclosure to provide the USPTO with

115. *Princo Corp. v. Int’l. Trade Comm’n.*, 616 F.3d 1318, 1329 (Fed. Cir. 2010) (“Although the defense of patent misuse . . . evolved to protect against ‘wrongful’ use of patents, the catalog of practices labeled ‘patent misuse’ does not include a general notion of ‘wrongful’ use.”) (quoting *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1373 (Fed. Cir. 1998)).

116. *See, e.g., U.S. Gypsum Co. v. Nat’l. Gypsum Co.*, 352 U.S. 457, 465, 472–73 (1957).

117. *Va. Panel Corp. v. MAC Panel Co.*, 133 F.3d 860, 872 (Fed. Cir. 1997) (noting that violation of the antitrust laws requires more exacting proof than suffices to demonstrate patent misuse).

118. *See, e.g., Morton Salt*, 314 U.S. at 492–93; *Kolene Corp. v. Motor City Metal Treating, Inc.*, 440 F.2d 77, 84 (6th Cir. 1971) (“The misuse must be of the patent in suit.”).

119. *C.R. Bard, Inc. v. M3 Sys.*, 157 F.3d 1340, 1372 (Fed. Cir. 1998); *see also Monsanto Co. v. McFarling*, 363 F.3d 1336, 1341 (Fed. Cir. 2004).

120. *Permit Assignees to File Broadening Reissue*, USPTO, <http://www.uspto.gov/web/offices/com/strat21/action/lr1fp55.htm> (last modified Sept. 20, 2007); *see also* Tom Ewing, *A Study of The Intellectual Ventures Portfolio In the United States: Patents & Applications*, 2nd Edition, Version 2.3 (May 2011) (Sample Report), at 19 (*downloadable from* <http://www.avancept.com/Publications.html>).

pertinent information, especially information related to prior art.¹²¹ Likewise, during litigation, it is fairly common for patents to enter into reexamination, and in reexamination, the new owner will likewise assume the duty of disclosure.¹²² While this duty implicates more owners than just privateers and sponsors, it could theoretically provide a line of defense due to inequitable conduct in cases where the target learns that the sponsor itself has knowledge of pertinent prior art (e.g., is itself a large patent holder.)

Where the owner has not satisfied the duty of disclosure, then the patent may become unenforceable due to inequitable conduct.¹²³ The inequitable conduct analysis comprises two steps: (1) a determination of whether the conduct meets a threshold level of materiality and intent to mislead and (2) a weighing of the materiality and intent in light of all of the circumstances to determine whether the applicant's conduct is so culpable to render the patent unenforceable.¹²⁴

G. Antitrust

A patentee may exploit his patent but may not use it to acquire a monopoly not embraced in the patent grant.¹²⁵ The line dividing lawful patent conduct and antitrust violations and patent misuse has varied over the years with changes in statutes, judicial opinions, and concepts of what is equitably proper.¹²⁶ Much of recent patent and antitrust jurisprudence relates to patent misuse as well.^{127, 128}

121. All patent applicants have an affirmative duty to prosecute patents in the PTO with candor and good faith. *See* 37 C.F.R. § 1.56(a).

122. Information material to patentability in ex parte reexamination and inter partes reexamination proceedings, 37 C.F.R. § 1.555 (2011).

123. Inequitable conduct occurs when a patentee breaches his or her duty to the PTO of "candor, good faith, and honesty." *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1178 (Fed. Cir. 1995); *see also* *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1289 (Fed. Cir. 2010), *vacated* 374 Fed. App'x 35 (Fed. Cir. 2011) (en banc).

124. *See* *Purdue Pharma L.P. v. Boehringer Ingelheim GMBH*, 237 F.3d 1359, 1366 (Fed. Cir. 2001).

125. *Transparent-Wrap Mach. Corp. v. Stokes & Smith Co.*, 329 U.S. 637, 643 (1947).

126. *See, e.g.,* *Ill. Tool Works v. Indep. Ink, Inc.*, 547 U.S. 28, 28 (2006).

127. *Id.* at 40 ("Although the patent misuse doctrine and our antitrust jurisprudence became intertwined in *International Salt*, subsequent events initiated their entwining.").

128. *U.S. Philips Corp. v. Princo Corp.*, 173 Fed. Appx. 832 (Fed. Cir. 2006) (vacating trial court's grant of summary judgment to patentee of no patent misuse on the grounds that the district court erred in treating 35 U.S.C. § 271(d)(5) as a definition of patent misuse that precludes a finding of patent misuse unless the tied patents involved multiple products).

Antitrust jurisprudence typically relates to what one company can do with its own patents rather than its motivation of third parties to use their patents in ways that might be anticompetitive between the motivating party and a third party. IP privateering necessarily involves third-party IPRs, rather than one's own IPRs, with the possible exception of privateering as outsourced licensing. In any event, it would seem reasonably clear that one would be unlikely to motivate a third party to do something with one's patents that one could not do on its own without invoking antitrust issues.

If a patent owner initiates litigation seeking to enforce a patent that is known by the patentee to be invalid, such action can be an unlawful attempt to monopolize under Sec. Two of the Sherman Act.¹²⁹ This is, of course, true for all plaintiffs and hiding a patent under a privateering arrangement should not change the analysis, although it might make for an interesting factual situation where the sponsor knew of a patent's invalidity but the privateer did not know of the invalidity and vice versa.

Along similar lines, there is an exception to the general antitrust immunity conferred by the *Noerr-Pennington* doctrine that relates to sham litigation activities.¹³⁰ Under this sham exception activities "ostensibly directed toward influencing governmental action" do not qualify for *Noerr* immunity where they are "a mere sham to cover . . . an attempt to interfere directly with the business relationships of a competitor."¹³¹ The Supreme Court added that a litigation cannot be deprived of immunity as a sham unless it is "objectively baseless."¹³²

An assumption, however, in this analysis of IP privateering is that sponsors and privateers will act to avoid all potential liability from privateering and not act recklessly in the litigations that they bring. Similarly, the sponsor and privateer would seemingly avoid liability under present law in nearly all cases so long as the patent litigations that they brought had some objective basis.

Targets may seek to find a cause of action analogous to that of Article 101 of the European Commission which finds potential anticompetitive effects in:

129. 15 U.S.C.A. § 2 (West 2011).

130. *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 144 (1961).

131. *See Prof'l Real Estate Investors, Inc. v. Columbia Pictures Industries, Inc.*, 508 U.S. 49, 51 (1993) (quoting *Noerr*, 365 U.S. at 144).

132. *Id.*

“[A]ll agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market”¹³³

This article will not explore whether privateering per se constitutes a sufficient competitive “distortion” under Art. 81, but one suspects that it would depend upon (1) how fully the Commission understood the sponsor’s privateering plan and (2) how extensive the effect of such plan was, especially when viewed from a consumer point of view. Under such an analysis, the factual situations for some privateering scenarios would still likely elude sanction although many of them would likely be proscribed.

Sec. 1 of the Sherman Act is worded somewhat similarly to Article 101, stating:

Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal. Every person who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine¹³⁴

But one difference between the Sherman Act and Article 101 is that the Sherman Act implies that a party’s “illegal” actions have provoked an anticompetitive result whereas Article 101 seems less concerned, on its face, about whether the underlying act was legal or illegal.

The *Kobe*¹³⁵ line of cases provides a small group of antitrust cases that may be helpful to the privateering target and come somewhat closer to Article 101. In *Kobe*’s patent infringement case, the plaintiff had purchased some seventy-plus key patents in the hydraulic oil pump technology.¹³⁶ The court found that one could not possibly make a competitive product without infringing one of the patents, and the defendant had been found to infringe several of the patents.¹³⁷

133. Treaty on the Functioning of the European Union Art. 101 (ex. art. 81 TEC), Mar. 25, 1957, O.J. C115 Mar. 9, 2008.

134. 15 U.S.C. § 2, available at http://www.law.cornell.edu/uscode/215/usc_sec_15_00000002----000-.html.

135. *Kobe, Inc. v. Dempsey Pump Co.*, 198 F.2d 416 (10th Cir. 1952).

136. *Id.* at 420.

137. *Id.* at 423–25.

Thus, the patent litigation was in no way a sham. The court stated that while there was nothing inherently wrong with purchasing a patent and enforcing it against an infringer, the intent and underlying purpose of accumulating such a large number of patents amounted to a violation of antitrust laws and patent misuse.¹³⁸

While providing a narrow exception to the *Noerr-Pennington* litigation immunity, the *Kobe* cases could benefit privateering targets. These cases could possibly be most easily applied to the outsourced licensing scenarios—although in those scenarios, the sponsor has not typically acquired a group of patents for the purpose of being anticompetitive; rather the patents already exist and the sponsor wants to exploit them against a specific target. An interesting question would be how readily the *Kobe* line of cases could be applied to a company like Intellectual Ventures that set out to amass one of the largest patent portfolios in the United States and then collect revenue from licensing the portfolio.¹³⁹ Whether *Kobe* would apply beyond the outsourced licensing form of privateering remains somewhat doubtful, but could possibly be applied by a court that found that the sponsor's activities were objectionable and should be sanctioned.

H. Insider Trading and Market Manipulation

Privateering sponsors, especially investor sponsors, will likely need to structure their operations to avoid potential liability based on securities laws and regulations. As with many forms of privateering, certain sponsors may have legal and/or fiduciary duties based on their positions in other entities that will not arise for sponsors who stand in different positions.

Insider trading relates to the trading of a corporation's stock or other securities (e.g., bonds or stock options) by individuals with potential access to non-public information about the company.¹⁴⁰ Insider trading frequently refers to a practice in which an insider or a related party trades in the market using material nonpublic information obtained during the performance of the insider's duties at a corporation, or otherwise in breach of a fiduciary duty or where

138. *Id.* at 426–27

139. *See* Ewing, *supra* note 85.

140. *Chiarella v. United States*, 445 U.S. 222, 227 (1980) (“That the relationship between a corporate insider and the stockholders of his corporation gives rise to a disclosure obligation is not a novel twist of the law.”).

the nonpublic information was misappropriated from the company.¹⁴¹ Insider trading is prohibited by the Securities Exchange Act of 1934,¹⁴² and generally requires that anyone in possession of insider information must either disclose the information or refrain from trading.¹⁴³

The SEC acknowledges that insider trading is a difficult crime to prove.¹⁴⁴ The underlying act of buying or selling securities is a perfectly legal activity. It is only what is in the mind of the trader that can make this legal activity a prohibited act of insider trading.¹⁴⁵ Direct evidence of insider trading is rare. Insider trading is typically detected by examining inherently innocuous events and drawing reasonable inferences based on their timing and surrounding circumstances to lead to the conclusion that the defendant bought or sold stock with the benefit of inside information wrongfully obtained.¹⁴⁶

The investor privateering scenarios discussed in the companion article could potentially involve the use of insider information, especially the privateering scenarios where the sponsor bases his knowledge about target selection using information that is otherwise confidential. However, many forms of privateering do not require the use of insider information, as most forms of privateering do not concern securities trading and are not conducted by traders and brokers.

Greater potential liability for privateering sponsors arises from market manipulation under Sections 9(a)(2) and 10(b) and of the Securities Exchange Act of 1934 and Rule 10b-5.¹⁴⁷ Market manipulation describes a deliberate attempt to interfere with the free and fair operation of the market by creating artificial, false or

141. Thomas C. Newkirk, Associate Director, SEC Division of Enforcement & Melissa A. Robertson, Senior Counsel, SEC Division of Enforcement, Speech by SEC Staff: Insider Trading—A U.S. Perspective, Remarks at the 16th International Symposium on Economic Crime (Sept. 19, 1998).

142. Securities Exchange Act of 1934, Pub. L. No. 111-257, 48 Stat. 881 (2010), available at <http://www.sec.gov/about/laws/sea34.pdf>.

143. See Sec. & Exch. Comm'n v. Texas Gulf Sulphur Co., 258 F. Supp. 262, 268 (S.D.N.Y. 1966) *aff'd in part, rev'd in part* 401 F.2d 833 (2d Cir. 1968).

144. Newkirk, *supra* note 141.

145. *Id.*

146. *Id.*

147. Securities Exchange Act of 1934; Sec. & Exch. Comm'n Rule 10b-5, (codified as amended at 17 C.F.R. § 240.10b-5 (1951)), available at http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title17/17cfr240_main_02.tpl.

misleading appearances with respect to the price of, or market for, a security, commodity or currency.¹⁴⁸ Whether a *bona fide* patent infringement litigation could be considered as market manipulative as tactics such as “pump and dump,” “painting the tape,”¹⁴⁹ and a “bear raid”¹⁵⁰ remains somewhat unclear. There is likely a point at which it would be difficult for a sponsor to avoid liability, especially if the sponsor owed a fiduciary duty to a third party impacted by the privateering effort.

The general anti-manipulation provision of Section 9(a)(2) outlaws “every device used to persuade the public that activity in a security is the reflection of a genuine demand instead of a mirage.”¹⁵¹ Even a small price change suffices.¹⁵² A motive to manipulate, when joined with the requisite series of transactions, *prima facie* establishes the manipulative purpose and shifts to the accused the burden of going forward with the evidence.¹⁵³ Unlike Sec. 10(b), Sec. 9(a) expands the scope of potential liability beyond persons with a fiduciary duty such as corporate officers, advisors, and stock brokers.

Market manipulation obviously harms the market by tampering with the flow of genuine market information.¹⁵⁴ In a market without manipulators, information seekers unambiguously improve market efficiency by pushing prices up to the level indicated by the informed party’s information but overall market efficiency becomes less certain

148. Market manipulation is punishable under Rule 10b-5. See, e.g., Litigation Release, Sec. & Exch. Comm’n, SEC Charges George Georgiou, a Canadian Citizen, For Market Manipulation Schemes, (Feb. 12, 2009) (available at <http://www.sec.gov/litigation/litreleases/2009/lr20899.htm>).

149. “When a group of traders create activity or rumors in order to drive the price of a security up.” An example is the Guinness share-trading fraud of the 1980s. In the US, this activity is usually referred to as “painting the tape.” *Painting the Tape Definition*, INVESTOPEDIA.COM, <http://www.investopedia.com/terms/p/paintingthetape.asp> (last visited Oct. 10, 2011).

150. A bear raid is an “attempt by investors to manipulate the price of a stock by selling large numbers of shares short.” *Bear Raid*, ANSWERS.COM, <http://www.answers.com/topic/bear-raid?cat=biz-fin> (last visited Oct. 10, 2011).

151. *Crane Co. v. Westinghouse Air Brake Co.*, 419 F.2d 787, 794 (2d Cir. 1969).

152. *U.S. v. Stein*, 456 F.2d 844, 846 (2d Cir. 1972); *Kidder Peabody & Co.*, 18 SEC 559, 571 (1945) (1/2 point on a \$50 stock).

153. *Alabama Farm Bureau Mut. Cas. Co., Inc. v. Am. Fid. Life Ins. Co.*, 606 F.2d 602, 616 (5th Cir. 1979).

154. Rajesh K. Aggarwal and Guojun Wu, *Stock Market Manipulation—Theory and Evidence* (Mar. 11, 2003), available at <https://alumni.ou.edu/content/dam/price/CFS/paper/pdf/aw39.pdf>.

in the presence of manipulation. The situation becomes more clearly detrimental to market efficiency as competition for shares increases.¹⁵⁵

Many of the market manipulation cases relate to either direct manipulation of the market or actions caused to manipulate the market coupled with a statement about the market. Undertaking an action such as filing a patent infringement case under the belief that it will affect the price for a given stock and then buying or selling the stock based on that belief seems to be a few degrees away from direct market manipulation—and the privateering sponsor does not need to make a statement, although publicity about a litigation could arguably constitute a statement.

In *Basic Inc. v. Levinson*, the U.S. Supreme Court adopted a standard for materiality of misstatements in the SEC Rule 10b-5 context by holding “materiality depends on the significance the reasonable investor would place on the withheld or misrepresented information.”¹⁵⁶ In *Basic*, the Court rejected a proposed bright-line rule for determining the materiality of a specific piece of information.¹⁵⁷ In its place, the Court called for a fact-specific case-by-case inquiry.¹⁵⁸

In the typical market manipulation case, either corporate officers have deliberately taken actions in the marketplace that differ from their public statements¹⁵⁹ or a stock broker or corporate insider has made similar market misstatements.¹⁶⁰ In one of the few patent-related market manipulation cases, a corporation’s officers were excused from liability because they demonstrated that they had genuinely believed in the strength of the company’s patents and had defended them vigorously.¹⁶¹

The Supreme Court has pointed out that not every instance of financial unfairness constitutes fraudulent activity under Sec. 10 (b).¹⁶² In *Chiarella*, the Court found no liability for a printer under Sec. 10(b) because he was not a corporate insider and he had received no

155. *Id.*

156. *Basic Inc. v. Levinson*, 485 U.S. 224, 240 (1988).

157. *See id.* at 236.

158. *See id.* at 239.

159. *See* SEC v. Texas Gulf Sulphur Co., 258 F. Supp. 262, 268 (S.D.N.Y. 1966) *aff’d in part, rev’d in part* 401 F.2d 833 (2d Cir. 1968).

160. *See* SEC v. Tambone, 597 F.3d 436 (1st Cir. 2010).

161. *See* Gompper v. Visx, Inc., 298 F.3d 893 (9th Cir. 2002).

162. *Chiarella v. United States*, 445 U.S. 222, 232–33 (1980) (*citing* Santa Fe Industries, Inc. v. Green, 430 U.S. 462, 474–77 (1977)).

confidential information from the target company—and the “market information” that he relied on to trade in the market did not concern the earning power or operations of a target company but only its plans to acquire another company.¹⁶³

In *Chiarella*, the Court also noted that the case lacked the printer’s “duty to disclose” because no duty arose from the printer’s relationship with the sellers of the target company’s securities because the printer had no prior dealings with them. The Court noted that the printer “was not their agent, he was not a fiduciary, he was not a person in whom the sellers had placed their trust and confidence. He was, in fact, a complete stranger who dealt with the sellers only through impersonal market transactions.”¹⁶⁴ The Court concluded that to find the printer guilty would essentially create a general duty between all market participants to forgo actions based on material, nonpublic information.¹⁶⁵ Thus, it would seem that in many privateering scenarios, even some investor privateering scenarios, that the sponsor would likely not incur any potential liability under many possible scenarios.

I. Tortious Interference and Conspiracy

Keeping with the nautical theme of privateering. . . . Off the coast of Cameroon about 200 years ago, a group of local residents paddled their canoe out to the *Bannister*, an English ship that had been loaded with goods for trade.¹⁶⁶ As the canoe paddled back to shore, presumably to bring back others to trade with the ship, the canoe was struck by cannon fire from another ship, the *Othello*, killing at least one of the men onboard the canoe. Capt. McGawley, commander of the *Othello*, was determined that the locals would not trade with anyone else until they had settled a debt that he believed they owed him. When the *Bannister* returned to England, its owners sued McGawley for tortious interference with their prospective

163. *Id.* at 231.

164. *Id.* at 232–33.

165. *Id.* at 233.

166. *OBG Limited v. Allan, Douglas v. Hello! Limited and Mainstream Properties Limited v. Young* [2007] UKHL 21 at paragraph 8 (May 2, 2007) (*citing* *Tarleton v. McGawley*, 170 Eng. Rep. 153 (K.B. 1793) (In unlawful means the defendant must have intended to cause damage to the claimant as a means of enhancing his own economic position. Because damage to economic expectations is sufficient to found a claim, there need not have been any intention to cause a breach of contract or interfere with contractual rights.)).

business in Cameroon.¹⁶⁷ In rendering his decision, Chief Justice Kenyon noted that McGawley had no right to take the law into his own hands and therefore he owed a debt to the *Bannister* and its owners for driving away their business with deadly cannon fire.¹⁶⁸ But Justice Kenyon added that there would have been no case had the *Othello* driven the prospective customers away by accident or by legal means.¹⁶⁹

Over time, the rule of *Tarleton v. M'Gawley* has become known as tortious interference with business relationships. This tort might represent the best hope for targets who have uncovered a privateering effort by a competitive rival. Unfortunately, without first getting the court to agree to sanctions for litigation conduct (the equivalent of firing a cannon), then the target's task may be impossibly difficult.

Tortious interference is a common law tort that occurs when one intentionally damages another's contractual or business relationships. One branch of the tort comprises impairing an existing contractual relationship and the other branch comprises interfering with business relationships, generally. *Tarleton* dealt with this later branch of the tort since the *Bannister* had no contract with the locals who were fired upon by the *Othello*.

Tortious interference with business relationships occurs where one party prevents another party from successfully establishing or maintaining business relationships.¹⁷⁰ Thus, the first party's conduct intentionally causes the injured party not to enter into a business relationship with a third party that otherwise would likely have occurred.¹⁷¹

Although the specific elements required to prove a claim of tortious interference vary from one jurisdiction to another, the elements typically include the following:¹⁷²

1. The existence of a contractual relationship or beneficial business relationship between two parties;

167. *Id.*

168. *Id.*

169. *Id.*

170. *Id.*

171. Such conduct is termed tortious interference with prospective business relations, expectations, or advantage or with prospective economic advantage.

172. *Builders Corp. of Am. v. United States*, 148 F. Supp. 482, 484 n.1 (N.D. Cal. 1957), *rev'd. on other grounds* 259 F.2d 766 (9th Cir. 1958); *P.G. & E. v. Bear Stearns & Co.*, 50 Cal. 3d 1118, 1126 (1990).

2. Knowledge of that relationship by a third party;
3. Intent of the third party to induce a party to the relationship to breach the relationship;
4. Lack of any privilege on the part of the third party to induce such a breach;
5. Breach of the relationship; and
6. Damage to the party against whom the breach occurs.¹⁷³

Consider, for example, the case of two companies competing for a supply contract with a larger company where one of the two competitors sponsors a privateer to make the other company look bad before the potential customer. All the elements of the tort are satisfied—save for the lack of privilege element. The sponsor should retain the privilege to sue the target for patent infringement in all circumstances—so long as the sponsor's infringement case is not frivolous. If the case is frivolous, then the privilege may be lost.

The intent element of this tort has often been difficult for plaintiffs to prove in many types of cases.¹⁷⁴ The tortious actor needs to have the purpose to cause the result, and if he does not have this purpose, his conduct does not subject him to liability under this tort even if it has the unintended effect of deterring the third person from dealing with the plaintiff.¹⁷⁵ It is not enough that the actor intended to perform the acts which caused the result—he or she must have intended to cause the result itself.¹⁷⁶ For privateering cases, one could imagine this element, however, not being terribly difficult to prove against a sponsor, although it might be impossible to prove it against certain privateering arrangements.

To prove tortious interference, the injured party must also prove that there is a reasonable probability that the lost economic advantage would have been realized but for the tortfeasor's interference.¹⁷⁷ For some privateering cases, this element may also provide an extra layer of defense for the sponsor.

Interestingly, there is an important limitation to the use of tortious interference as a remedy for the disruption of contractual

173. *Buckaloo v. Johnson*, 14 Cal.3d 815, 827 (1975).

174. *P.G.&E.*, 50 Cal. 3d at 1127 (quoting Justice Tobriner that the actionable wrong lies in the inducement to break the contract or to sever the relationship, not in the kind of contract or relationship so disrupted).

175. RESTATEMENT (SECOND) OF TORTS § 766, (1979).

176. *Seaman's Direct Buying Service, Inc. v. Standard Oil Co.*, 36 Cal. 3d 752, 766 (1984).

177. *Youst v. Longo*, 43 Cal. 3d 64, 70–72 (1987).

relationships—a party to an existing contract cannot, as a matter of law, commit or conspire to commit a tortious interference with the contract.¹⁷⁸ The tort can only be asserted against strangers to the relationship.¹⁷⁹ Tortious damages are not typically available in contract cases, and courts have explained that allowing one party to bring tortious interference against another party to a contract would introduce a class of damages not contemplated under the contract laws.¹⁸⁰ Of course, the injured party could still sue over breach of contract, although punitive damages will likely not be available. Thus, tortious interference will likely not be available to targets in many of the scenarios discussed above.

As a sign of how difficult it can be to succeed with a tortious interference case, consider the plight of a small patent intermediary named iLeverage.¹⁸¹ In 2010, Allied Security Trust (AST), a patent defense aggregator somewhat similar to RPX, decided to sell some patents that had been licensed to its members.¹⁸² AST asked a company called iLeverage to conduct a private auction for the patents.¹⁸³ iLeverage sent auction solicitations to several companies, including Limelight, a content-delivery company that has been locked in a \$45-million infringement litigation with much larger Akamai.¹⁸⁴ In response, Limelight asked AST for a license to a patent mentioned in iLeverage's solicitation and was denied. In March 2010, Limelight then sued AST for declaratory judgment on the grounds that a lawsuit was imminent.¹⁸⁵ After a few weeks, AST and Limelight settled their dispute with Limelight receiving a license to the patent. In the meantime, the patent auction had been cancelled. In January

178. *Applied Equip. Corp. v. Litton Saudi Arabia Ltd.*, 7 Cal. 4th 503, 514 (1994). (“[C]onsistent with its underlying policy of protecting the expectations of contracting parties against frustration by outsiders who have no legitimate social or economic interest in the contractual relationship, the tort cause of action for interference with a contract does not lie against a party to the contract.”).

179. *Id.*

180. *Dryden v. Tri-Valley Growers*, 135 Cal. App. 990, 998–99 (1977) (emphasis added); *see also* *Shoemaker v. Myers* 801 P.2d 1054, 1068–69 (Cal. 1990).

181. *iLeverage, Inc. v Limelight Networks*, No. CGC-11-507095 (SF Super. Ct. 2011).

182. *Id.*

183. *Id.*

184. Joff Wild, *Suit alleges Limelight got licence [sic] from AST after filing a “frivolous and baseless” DJ Action*, INTELLECTUAL ASSET MANAGEMENT MAGAZINE BLOG, (Apr. 11, 2011), <http://www.iam-magazine.com/blog/Detail.aspx?g=b0f84c21-a2fa-4eef-8a6d-e3fbb779b3ac>.

185. *Id.*

2011, iLeverage sued Limelight for tortious interference with contract and tortious interference with a business relationship. Limelight responded with a motion that iLeverage's complaint be stricken under California's anti-SLAPP legislation.¹⁸⁶ In April 2011, the California court agreed with Limelight that its earlier lawsuit against AST had been privileged,¹⁸⁷ struck iLeverage's complaint and assessed attorneys' fees against iLeverage for bringing the complaint.

A civil conspiracy, or collusion, comprises an agreement between two or more parties to deprive another party of legal rights or deceive the party to obtain an illegal objective. Any voluntary agreement and some overt act by one conspirator to further the plan are the main elements necessary to prove a conspiracy. Even when no crime is involved, a civil action for conspiracy may be brought by the persons who were damaged. But conspiracy is not an independent tort and must be tied to a duty that at least one party already owes to another.¹⁸⁸ In the privateering realm, because the privateer has no duty not to sue the target for patent infringement, then the fact that the sponsor and the privateer have agreed upon a course of action creates no tortious activity—so long as the patent infringement lawsuit is well founded.

Conspiracies require an agreement between two or more persons to break the law at some time in the future or to achieve a lawful aim by unlawful means.¹⁸⁹ Conspiracies in violation of the securities laws, such as the Securities Act of 1933 and the Securities Exchange Act of 1934, form another area of potential liability for both the sponsor and the privateer.¹⁹⁰ Both the SEC and the DOJ may bring legal actions for conspiracies to violate the securities laws.

A few lower courts in California have applied conspiracy theory to find that one contracting party could impose liability on another

186. Order Granting Defendant's Motion to Strike the Suite (Apr. 4, 2011) iLeverage, Inc. v Limelight Networks, No. CGC-11-507095, (SF Sup. Ct. 2011). Some 20 states have laws to prohibit what are known as "strategic lawsuits against public participation" or SLAPP. The goal of a SLAPP lawsuit is to use legal tools such as libel and slander to stop members of the public from expressing their opinions at public meetings.

187. Non-frivolous litigation is generally protected under the free speech provisions of the First Amendment. *Prof'l Real Estate Investors v. Columbia Pictures Indus.*, 508 U.S. 49, 60–61 (1993).

188. *Applied Equip. Corp. v. Litton Saudi Arabia Ltd.*, 869 P.2d 454, 459 (Cal. 1994).

189. See, e.g., *BLACKS LAW DICTIONARY* 329 (8th ed. 2004).

190. Securities Act of 1933, Pub. L. No. 111-229, 48 Stat. 74 (2010); Securities Exchange Act of 1934, Pub. L. No. 111-257, 124 Stat. 2646 (2010).

for the tortious interference with that contract,¹⁹¹ but the California Supreme Court rejected this approach in *Applied Equipment Corp. v. Litton Saudi Arabia Ltd.*¹⁹² The Court found that application of conspiracy to contracts “illogically” expanded the doctrine of civil conspiracy by imposing tort liability for an alleged wrong. The Court noted, “One contracting party owes no general tort duty to another not to interfere with performance of the contract; its duty is simply to perform the contract according to its terms.” Thus, privateering against a party with whom the sponsor has a contractual relationship does not give rise to any special duty and could possibly even be used by a sponsor to lower its potential liability by arguing that the privateering activities were simply a form of contract breach.

III. Equipping the Privateer

A. Privateering Infrastructure

No IP market intermediaries presently appear to offer privateering services as such. Of course, many of the tasks needed to prepare a privateering operation also pertain to regular service offerings of existing IP intermediaries. Privateering could be engaged as easily as contacting a licensing organization and telling them that the client would like to invest in the litigation of a patent having X, Y and Z characteristics. The sponsor could even provide a list of targets for such a patent. The sponsor’s investment could even take the form of a general investment in the licensing organization itself rather than an investment in a specific IPR assertion. This would give the sponsor additional protection against discovery, and an investment in a larger organization would also provide further insulation against any potential legal liability. Of course, the facilitator’s reputation would be built on its discretion.

As discussed in the companion paper,¹⁹³ IP privateering is facilitated by a ready supply of issued and active patents. The patent oversupply, to the extent that it exists, has likely occurred because of the coincidence of several factors. One part of the oversupply has come from the accelerating IP competition that has led to an increase

191. *Wise v. S. Pac. Co.*, 35 Cal. Rptr. 652, 664–65 (Cal. Ct. App. 1963).

192. *Applied Equip. Corp.*, 869 P.2d at 459.

193. *See Ewing, supra*, note 1.

in patent filings. But the legal standards for patentability are fixed.¹⁹⁴ Thus, increased application filings would not necessarily contribute to a corresponding increase in patent grants. In any event, the discussion below illustrates how a sponsor may utilize the abundant supply of patents to his advantage.

B. Finding Suitable IPRs For a Privateering Operation

Fortunately for the would-be sponsor, a patent marketplace has arisen in recent years that vastly simplifies obtaining a patent while also preserving one's anonymity.¹⁹⁵ Thousands of patents have changed hands in recent years¹⁹⁶ as defunct companies, independent inventors, corporations, and others have sold IP assets to third parties.¹⁹⁷ Also fortunate for the would-be sponsor is that a lack of ownership transparency in the marketplace provides anonymity in many cases and at least provides confidentiality in most cases, allowing companies to transact with just about any party with little fear of public exposure.¹⁹⁸

The perfect patent for many privateering operations would be one in which the patent's claims not only read on a key aspect of the target's business but also read on a key aspect of the target's business in a manner that implicates the target's managers. Thus, the privateer's litigation would be more likely to disrupt the target's management and effectively make the litigation more costly for the defendant. Disrupting the target's managers amplifies the impact of the privateer's litigation and brings further indirect rewards to the sponsor. In short, the perfect privateering patent is one that delivers a "headshot" to the target's management.

The sponsor can employ a range of special purpose entities (SPEs) for the privateering option, although a limited liability company is often the most appropriate SPE. If absolute stealth was called upon, then the sponsor could consider approaching a law firm

194. See, e.g., U.S. Patent Act, 35 U.S.C. §§ 102–103. These conditions for patentability have been essentially unchanged for more than 200 years.

195. Colleen V. Chien, *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, 62 HASTINGS L.J. 297, 310 (2010).

196. For example, Intellectual Ventures, founded in 2000, has alone acquired tens of thousands of patents. See TOM EWING, A STUDY OF THE INTELLECTUAL VENTURES PORTFOLIO IN THE UNITED STATES: PATENTS & APPLICATIONS 7 (2d ed. 2011) (sample report) (downloadable from <http://www.avancept.com/Publications.html>).

197. Chien, *supra* note 195, at 313.

198. *Id.* at 319–20.

or another intermediary and having the intermediary approach the owners of various candidate patents to gauge their appetite for selling the patent and/or joining the patent into the SPE. In the stealthiest case, the existing patent owner could agree to representation by the law firm, likely on a contingency basis,¹⁹⁹ with a contribution of the patent by the owner to the SPE and costs provided by anonymous “investors.” Various unrelated investors could even provide funds for the costs of the litigation and possibly become owners of the SPE. This approach also provides a mechanism for controlling the patent owner. The investors would not necessarily be controlled by the privateering sponsor but could be aligned with the privateering sponsor, e.g., they could be investors in the privateering sponsor. Thus, they would share a common interest with the sponsor but would have no written obligations that would necessarily jump out in discovery or clearly reveal the overall plan.

The privateer does not need to know the identity of the sponsor.²⁰⁰ The privateer might even be encouraged to believe that his patent had extraordinary merit that had been recognized by IP specialists who would help him achieve the recognition and rewards that he was due. The only parties who would even know the name of the sponsor would be some of the investors, but there could potentially be no contractual obligations between any of these parties and the sponsor. The arrangement might possibly be discoverable under the criminal conspiracy laws—if privateering were a crime, but would likely be undiscoverable under the civil laws since the arrangement comprises no legal or equitable cause of action.

So long as the privateer’s litigation satisfied Rule 11, then there is little that the target could do against the sponsor legally.²⁰¹ The target either wins or loses the litigation. In many privateering scenarios, the sponsor does not need the privateer to actually win the litigation. In many cases simply bringing the litigation will satisfy the sponsor’s objectives while in others a modest settlement will satisfy the sponsor’s objectives.

Assume the worst case scenario for the privateer—the target not only wins the case but also wins Rule 11 sanctions against the privateer. In many circumstances, the amount awarded by the court

199. Note that contingency fee arrangements are not allowed in many countries.

200. See *Lans v. Gateway 2000, Inc.*, No. 97-2523 (D.D.C. 1997); summary judgment appeal heard as *Lans v. Digital Equip. Corp.*, 252 F.3d 1320 (Fed. Cir. 2001).

201. See generally Part II, *supra*.

would likely be trivial by the sponsor's standards.²⁰² Assume that the SPE had insufficient funds to pay the sanctions. The sponsor could supply one of the investors and/or the law firm with the funds to pay the sanctions. If the privateer did not know the identity of the sponsor, and the lawyers in the case were not sanctioned, then the sponsor would even be free to simply walk away from the case.

The worst case scenario for the sponsor would be one in which not only were Rule 11 sanctions awarded by the court against the privateer but where the target had also discovered the identity of the sponsor—only after all this had happened would it be possible for the target to seek legal sanctions against the sponsor—and even then, the target would need more than just suspicions in order to bring a colorable case against the sponsor. Various legal formalisms can likely be employed to protect the sponsor.²⁰³ The simple fact that the sponsor is merely an investor in the entity owning the asserted patent will likely provide ample prophylactic in most situations. If privateering becomes sufficiently widespread, then it is certainly possible that some sponsor could become dangerously sloppy—but for the moment, it has not proven difficult for sponsors to insulate themselves from the potential pitfalls of their privateers' litigations.

C. The Ease of Locating Suitable IPRs For a Privateering Operation

The following example illustrates just how easy it can be to find not one but many patents on a given technical subject. The entire example was constructed in just a few minutes, could be done by any patent attorney, and does not require any communications with the present owner of the patent.

Assume a privateering sponsor wants to find a patent it can apply against a manufacturer of mobile phone handset displays. The patent need not be one that falls under a telecom standard²⁰⁴ (e.g., an ETSI standard). The target patent should preferably have no FRAND²⁰⁵ obligations under a standards body. Searching the USPTO's public patent database on March 1, 2011, revealed some forty-one issued

202. *Id.*

203. *Id.*

204. European Telecommunications Standards Institute (ETSI), <http://www.etsi.org> (last visited Oct. 23, 2011). ETSI is an independent standardization organization in telecommunications with worldwide influence. ETSI has been successful in standardizing various systems, such as GSM.

205. "Fair reasonable and non-discriminatory," the typical terms required of IPRs associated with a standards body.

patents whose claims recite “mobile,” “phone,” “handset,” and “display.”²⁰⁶ This search was limited strictly to claims having these specific terms and did not consider synonyms.²⁰⁷ One could then apply further searches on the claims and specification to narrow this list further to better satisfy a given sponsor’s request. Of course, a review of these patents’ specific technical focus might reveal inventions beyond merely an improved mobile phone handset display, such as using a mobile phone handset display having these features to accomplish for some particular purpose.

The privateering sponsor may want to weed out of the list patents that are owned by large operating companies, as those will typically be the most difficult IPRs to obtain on short notice and at a reasonable price—unless the large company has already decided to offer up the patents in the IP marketplace. Filtering the large operating companies from the list above leads to some fifteen patents.²⁰⁸ Of these fifteen patents, ten of them are owned by small companies and five of them are owned by individuals. Each of the five patents owned by individuals (nearly one-eighth of the total) would constitute a raw set of candidates for a privateering operation.

The privateering sponsor could then review the file histories for these patents, prepare preliminary claim charts, and conduct further diligence regarding the inventors. File histories for patents issued from the mid-2000s onward can be downloaded in seconds from the USPTO²⁰⁹ free of charge and even earlier for patents issued by the EPO,²¹⁰ older patent file histories can be ordered from the patent office at relatively minimal cost. Preliminary claim charts can be prepared using the patent, its file history, and a review of the prospective infringer’s product and service offerings alone. Thus, a privateering sponsor can review just about any potential patent to the point of knowing if a credible case could be launched against a given

206. The interested reader can repeat this experiment by going to the USPTO’s advanced patent database, <http://patft.uspto.gov/netahtml/PTO/search-adv.htm>, and entering the search term “ACLM/mobile and ACLM/phone and ACLM/handset and ACLM/display.”

207. Similarly, changing “mobile phone” to just “mobile” or to “phone” increased the number of patents retrieved to 151 and 134, respectively.

208. USPTO Assignment Database, <http://assignments.uspto.gov/assignments/?db=pat> (enables identification of patent owners).

209. USPTO PAIR Database, <http://portal.uspto.gov/external/portal/pair> (database of file histories).

210. European Patent Register: Advanced Search, <https://register.epo.org/espace/en/advancedSearch?lng=en>.

target—all before ever contacting the IPR's owner. In fact, the patent's owner can only shed light on some very specific issues related to invalidity and ownership, such as whether a sales or public disclosure bar arose prior to the filing of the application, whether there is an omitted inventor, or whether there is an unrecorded sale to another party or another ownership issue. Each of these issues relates to the patent's potential impairment, generally, and has little to do with the patent's applicability to a specific target.

The list above was located quickly (within fifteen minutes) using nothing but publicly available tools from the USPTO's databases—the issued patent database,²¹¹ the patent prosecution database,²¹² and the assignment database.²¹³ The interested reader is encouraged to visit these free databases maintained by the U.S. Patent & Trademark Office²¹⁴ and search them for not just one specific term but for the occurrence of several terms in the same patent document, especially its claims. This exercise will give some depth to the notion of what having nearly 8 million issued and 1.9 million active U.S. patents actually means.²¹⁵

The panoply of readily accessible subscription-based tools could provide an even more sophisticated list of privateering candidates at fairly minimal cost.²¹⁶ Among other things, a variety of services offer topographic mapping tools that illustrate the extent of patent coverage in various technical areas. Many patent analysis tools were developed in Japan early in the pro-patent era.²¹⁷ While these tools may have originally been developed more to manage portfolios in-house, to perform patent clearances, and other benign activities, the

211. See USPTO Home Page, <http://patft.uspto.gov/>.

212. See USPTO PAIR Database, <http://portal.uspto.gov/external/portal/pair>.

213. See USPTO Assignments, <http://assignments.uspto.gov/assignments/?db=pat>.

214. Alternatively, visit the European Patent Office website for information on European patents. EPO Home Page, <http://www.epo.org/>.

215. See Tomio Geron, *IPO-Ready Open Table Hit With Suspiciously Timed Lawsuit*, *Venture Capital Dispatch*, WALL ST. J., May 19, 2009, available at <http://blogs.wsj.com/venturecapital/2009/05/19/ipo-ready-opentable-hit-with-suspiciously-timed-lawsuit/>; Chris Gaither, *Google Settles Yahoo Patent Suit in Anticipation of IPO*, L.A. TIMES, Aug. 10, 2004, available at <http://articles.latimes.com/2004/aug/10/business/fi-google10>; Carol Emert, *Paypal IPO Party Spoiled by Rival's Patent Lawsuit*, S.F. CHRONICLE, Feb. 7, 2002, available at http://articles.sfgate.com/2002-02-07/business/17533265_1_palo-alto-s-paypal-certco-trading-today.

216. See generally Aureka, <http://aureka.micropat.com>. (Aureka is one example among several searching programs maintained by Thomson Reuters.).

217. See GRANSTRAND, *supra* note 18.

same tools have ready application as means for locating IPRs to use against others.

Figure 2 below illustrates a patent map generated across a wide range of antenna patents in seconds using a fairly sophisticated mapping tool.²¹⁸ Tools such as these allow would-be sponsors to rapidly locate suitable privateering candidates well before contacting the present owner to discuss a possible sale. For example, using this antenna map, a sponsor could locate patents by competitors in the antenna space and then locate close patents owned by third parties. Further investigation of these close third-party patents could provide an alternative means for locating candidate privateering patents under the assumption that the competitor's products would be as close to the to the third-party patents as the competitor's patents were close. How close the competitor products were to the third-party patents would comprise a second step, and a step that could be completely performed without requiring any contact with the present owners of these patents. Having eventually developed a list of top candidates, the sponsor could then begin contacting patent owners to entice them into selling their patents and/or becoming privateers.

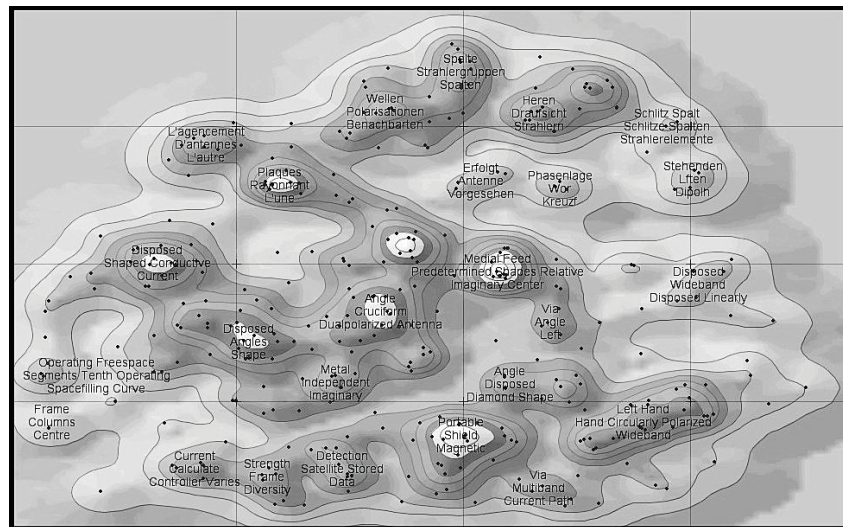


Figure Two. Patent Map

218. *Id.*

IV. Conclusions

Innovations in IPR exploitation led companies and investors to develop IP privateering as a tool for achieving larger competitive goals. The sponsor's benefits do not typically arise directly from the third party's case against a target but arise consequentially from the changed competitive environment brought about by the third party's IPR assertion.

Indirect exploitation of IPRs via intermediaries²¹⁹ does not per se give rise to a specific legal cause of action against the sponsor. In fact, the sponsor's potential legal liability rarely exceeds that of the third-party privateer who carries out the sponsor's assertion plan. If the privateer avoids liability, so does the sponsor in most instances. Potential sponsor legal liability may give rise to causes of action ranging from tortious interference in business relations to patent misuse, as well as possible market manipulation charges and antitrust problems. In some situations, the target may bring antitrust and/or market manipulation claims directly against the sponsor regardless of the merit of the privateer's case. For most sponsors, however, their greatest potential liability rests on adverse business consequences, particularly from public exposure of the sponsor's involvement. Indeed, a sponsor's goals for a privateering operation are often defeated by public exposure. For example, IP privateering only thwarts the "mutually assured destruction" paradigm of defensive patenting so long as the operating company sponsor's identity remains hidden. Consequently, the sponsor typically makes every effort to hide its involvement in a privateering operation.

Privateering scenarios can be shaped to fit many competitive scenarios. Privateering may be used by operating companies to change the technology adoption rate between an upstart technology and an incumbent technology, to outsource the licensing of a larger collection of IPRs, to change some aspect of the legal infrastructure, and/or to generally build influence. Privateering may be used by investors to grow existing investments by privateering against competitors in a given technology area, to change the value of the stock price of a public company to temporarily discount shares and/or to facilitate short selling, to change a company's value during

219. As explained above, these intermediaries can perform more than a mere "outsourced" litigation function. The intermediary's bringing of litigation against a target changes the competitive landscape between the target and the sponsor to the sponsor's advantage such that the sponsor often benefits whether or not the litigation succeeds.

investment, and to recoup research costs. Outsourcing patent litigation, one branch of privateering, allows companies to shape their competitive environments and in some instances monetize their IP rights at extremely low cost. There are presently few existing reasons under U.S. law why the complete ownership structure behind a given patent-holding entity must be publicly exposed. Ownership intransparency coupled with the nearly complete transparency related to patent documents themselves greatly simplifies the process of equipping a privateering operation.

Privateering raises further questions about the oversupply of active and available patents in the so-called pro-patent era and the ease with which they can be acquired and asserted. Although privateering per se gives rise to no legal or equitable cause of action, whether the practice should be encouraged is another matter. Privateering raises questions about the social utility of IPRs, particularly patents. Even when existing legal causes of action may theoretically come to the aid of the privateering target, the target may still have daunting discovery issues related to finding the sponsor. In market manipulation cases, the target may be unlikely to have the relevant trading data or be able to match it with a party connected to the privateering effort. Consequently, there may be a role for the Antitrust Division of the DOJ and the SEC in monitoring particular forms of privateering behavior and responding accordingly.

Paper IV

UCLA Journal of Law & Technology

THE AIA 500 EXPANDED: THE EFFECTS OF PATENT MONETIZATION ENTITIES

Robin Feldman, Tom Ewing, & Sara Jeruss

TABLE OF CONTENTS

INTRODUCTION	1
I. PRIOR LITERATURE	10
II. AIA 500 EXPANDED: METHODOLOGY & DESIGN.....	15
A. SOURCE OF DATA	17
B. STUDY DESIGN	18
1. <i>Existing Data</i>	21
2. <i>Entity Websites</i>	22
3. <i>Other Factors</i>	24
a. Entity Types	24
b. Case Outcomes	27
c. Additional Limitations.....	30
C. NUMBER OF DEFENDANTS	32
1. <i>Patent Data Expansion</i>	33
a. Patent Age	34
b. Patent Ownership Transfers.....	35
III. RESULTS	37
A. NUMBER OF LAWSUITS	37
B. NUMBER OF DEFENDANTS	43
C. CONSIDERING THE EFFECTS OF THE AMERICA INVENTS ACT	46
D. OVERVIEW SUMMARY OF RESULTS	47
E. NUMBER OF LAWSUITS FILED BY MONETIZERS: MONTH-TO-MONTH	49
F. NUMBER OF DEFENDANTS SUED BY MONETIZERS: MONTH-TO-MONTH	51
G. CASES FILED BY OPERATING COMPANIES: MONTH-TO-MONTH.....	55
H. DEFENDANTS SUED BY OPERATING COMPANIES: MONTH-TO-MONTH.....	56
I. ENTITIES WITH MOST CASES FILED	58
J. CASE OUTCOMES	59
K. LOCATION OF FILING	62
L. PUBLIC NOTICE OF PATENTS ASSERTED IN LITIGATION	64
M. A MARKET FOR PRE-LITIGATION AND POST-LITIGATION PATENT TRANSFERS	68
N. AGE OF LITIGATED PATENTS	71
O. DATA ANALYSIS	75
IV. CONCLUSION.....	77
APPENDIX A.....	79
APPENDIX B.....	87

THE AIA 500 EXPANDED: THE EFFECTS OF PATENT MONETIZATION ENTITIES

*Robin Feldman, Tom Ewing, & Sara Jeruss**

INTRODUCTION

Public attention is increasingly focused on the phenomenon of patent monetization entities. Known colloquially as “patent trolls,” these entities concentrate on generating income by licensing or litigating patents, rather than by producing an actual product. A variety of names and definitions have emerged for these entities, including “patent assertion entity,” “patent monetization entity,” “trolls,” and other less printable appellations. We will explain the terms and their slightly varying definitions below, but for the introduction, we will use the terms “patent monetization” and “patent

* Robin Feldman is Professor of Law, Harry & Lillian Hastings Chair, and Director of the Institute for Innovation Law at University of California, Hastings College of the Law. Tom Ewing, J.D., M.S., M.A., Licentiate in Industrial Management & Economics (expected 2014), is founder of Avancept LLC. Sara Jeruss previously performed academic research on patent law and served as Director of Legal Analytics at Lex Machina. While the article was in progress, Sara departed Lex Machina to take a position on the developer policy team at Facebook. She, therefore, had to bow out from further work on the article. Robin Feldman and Tom Ewing wish to express their deep appreciation to Sara for her leadership in the study's design and implementation. The authors also appreciate the guidance in data analysis that we received from Marcus Holgersson, Department of Technology Management and Economics, Chalmers University of Technology, Gothenburg, Sweden. We also wish to thank John Allison, Michael Carrier, Colleen Chien, Dennis Crouch, Robert Harris, Mark Lemley, Brian Love, Michael Risch, David Schwartz and Joshua Walker, for their comments and insights. We are grateful beyond measure to Phil Arredondo, Corey Attaway, Adriana Beach, John Beard, Nicholas Billings, Joseph Bleckman, Hannah Butler, Gavin Carothers, Padmini Cheruvu, Adlah Chista, Nick Costanza, William David, Edelmira Diaz-Weaver, Michael Gregory, Brian Hahn, Winston Hill, Byron Huang, Tasha Iyer, Philip Johnson, Sona Karakashian, Jenna Kelleher, Eun Kim, Rachel Kinney, Umar Khan, Adrian Kwan, Brian Lee, Robert Lennon, Sean Mahsoul, Jason Maples, Shaila Nathu, Nirali Patel, Carla Rydholm, Jalpa Shah, Nicole Shanahan, Shaman Shooshani, Jennifer Simonovich, Nancy Situ, Kevin Smith, Jagtej Sodhi, Michael Thomas, John Tynes, Jake Wexler, Ryan Witthans, Yi Wilkinson, Matt Wilson, Joshua Wolf, Stephanie Wong, and Jacob Zweig for their dedicated research assistance, and to Natalie Feldman for recruiting researchers. We also wish to thank the Chip Robertson Fund for faculty research at the University of California, Hastings College of the Law for financial support of the project.

monetization entities.” When quoting others in the initial section, we will use whatever term they have chosen.

The activity of patent monetization is coming under increasing scrutiny from a variety of governmental entities. In December of 2012, the Federal Trade Commission (“FTC”) and the Department of Justice (“DOJ”) held a joint workshop on the behavior of “patent assertion entities.”¹ The Patent and Trademark Office (“PTO”) held its own workshop a month later on proposed sunshine rules that would provide greater transparency of patent ownership.² The study and identification of activity by these entities has been hindered by the complex structure and arrangements of many such entities, whose activities are shrouded in complex layers of subsidiaries or revenue-sharing agreements.³

Even the President has entered the conversation. In an online “Fireside Hangout” in February 2013, President Barack Obama responded to a question by acknowledging the problem of patent trolls, suggesting the need for patent reform to address the problem, and noting the following:

They don’t actually practice anything themselves. They’re just trying to essentially leverage and hijack somebody else’s idea and see if they can extort some money out of them. Sometimes these things are challenging. Because we also want to make sure that patents are long enough and that people’s intellectual property is protected.⁴

¹ See Antitrust Division List of Public Workshops, UNITED STATES DEPARTMENT OF JUSTICE, <http://www.justice.gov/atr/public/workshops/pae/index.html> (last visited Nov. 17, 2013).

² See *Roundtable on Real Party in Interest Information*, UNITED STATES PATENT AND TRADEMARK OFFICE, <http://www.uspto.gov/ip/officechiefecon/roundtable-RPI-agenda.1.pdf> (last visited on Nov. 17, 2013).

³ See *id.*

⁴ See Mike Masnick, *President Obama Admits That Patent Trolls Just Try to ‘Extort’ Money; Reform Needed*, TECHDIRT (Feb. 14, 2013), <http://www.techdirt.com/articles/20130214/14351821988/president-obama-admits-that-patent-trolls-just-try-to-extort-money-reform-needed.shtml>.

The increasing attention corresponds to what appears to be a rapid expansion in patent monetization activity in recent years. Although sporadic patent monetization activity has existed in the patent world across time, new types of patent monetization entities have emerged recently. These entities are larger and far more complex than the original patent monetizers.

The new versions include mass aggregators who function in many roles—including patent acquisition and patent assertion—in order to protect their members against competitors who would assert patents against them, and to monetize patents.⁵

The aggregators operate as defensive mechanisms in two ways. First, if a member's competitor threatens to sue for patent infringement, the member may buy patents from the aggregator's pool to threaten the competitor in return. Second, an aggregator may help to neutralize a threat by buying up and licensing patents that might otherwise have been launched by competitors or monetizers against its members.

Mass aggregators also function as monetizing organizations, promising large returns to their members and investors.⁶ Some aggregators are private companies and others are publicly held entities.⁷ The largest, Intellectual Ventures, has amassed 30,000 to 60,000 patents—giving it at least the fifth largest patent portfolio of any domestic U.S. company—and is organized in a complex structure of more than 1,200 subsidiaries.⁸

⁵ Robin Feldman, *Intellectual Property Wrongs*, 18 STAN. J.L. BUS. & FIN. 250, 266 (2013); *see also* Tom Ewing & Robin Feldman, *The Giants Among Us*, 2012 STAN. TECH. L. REV. 1 (2012) (describing the activities of modern mass aggregators).

⁶ *See* Feldman, *supra* note 5, at 266.

⁷ *See* Ewing & Feldman, *supra* note 5 (describing, for example, the private aggregator Intellectual Ventures and the public aggregator Acacia).

⁸ *See id.* at 3-5 (describing the mass aggregator Intellectual Ventures).

As the monetization trend has spread, numerous entities of varying sizes and configurations have entered the market. Some operating companies are also joining the game, either creating subsidiaries to manage their intellectual property portfolios or transferring their intellectual property to third parties, who purchase the patents for either an infusion of cash or a return on their monetization activities.⁹ Operating companies, sometimes called product companies, are those whose primary focus involves making products.

In an effort to better understand the nature of patent monetization, Congress directed the nonpartisan Government Accountability Office (“GAO”) to study “the consequences of patent infringement lawsuits brought by non-practicing entities,” or those who do not make products.¹⁰ The directive was passed as part of the 2011 patent reform legislation: the America Invents Act. At the request of the GAO, two of the authors provided data on patent monetization entities using a database from Lex Machina, a data collection organization.

The GAO requested production and coding of a random sample consisting of one hundred patent infringement cases filed each year from 2007 to 2011, for a total of five hundred cases. Lex Machina co-authors Sara Jeruss and Joshua Walker were joined by Professor Robin Feldman of UC Hastings, College of the Law to code the five hundred cases in order to establish the types of entities involved in each of the lawsuits and to examine additional details of the suits. The GAO requested only the coded data without analysis, and the authors provided this with the understanding that they would publish

⁹ See Feldman, *supra* note 5, at 266.

¹⁰ 157 CONG. REC. S5441 (daily ed. Sept. 8, 2011) (statement of Sen. Patrick Leahy).

their own analysis separate from the GAO report.

The authors published their analysis in the fall of 2012, and the key conclusions were as follows.¹¹ First, based on the sample, lawsuits filed by patent monetizers increased significantly over the five-year period. Lawsuits filed by monetizers increased from 22% of the cases, filed in the first year of the study, to almost 40% of the cases filed in the last year. Monetizers were also heavily represented on the list of those who filed the greatest number of lawsuits. Four of the top five parties that filed the greatest number of lawsuits during the period studied were monetizers, and only one was an operating company. By contrast, universities were almost invisible in the dataset, accounting for only 0.2% of the first-named plaintiffs. The authors noted some additional observations about case outcomes, although the data sample was too small to reach any conclusions.

The GAO's subsequent report on the same data noted a drop in the percentage of lawsuits filed by operating companies from 76% in 2007 to 59% in 2011.¹² However, the GAO reported a smaller increase in the percentage of lawsuits filed by patent monetization entities, concluding that the percentage rose from 17% in 2007 to 24% in 2011. Much of the difference between our conclusions and those of the GAO resulted from the treatment of individuals and trusts. In counting patent monetization entities, the GAO chose to include only those parties organized as corporations or partnerships, not those organized as trusts or individuals.¹³

¹¹ Sara Jeruss, Robin Feldman & Joshua Walker, *The America Invents Act 500: Effects of Patent Monetization Entities on US Litigation*, 11 DUKE TECH. L. REV. 357 (2012).

¹² U.S. GOV'T ACCOUNTABILITY OFFICE, GAO -13-465, *Intellectual Property: Assessing Factors that Affect Patent Infringement Litigation Could Help Improve Patent Quality* (2013) at 17, <http://www.gao.gov/assets/660/657103.pdf>.

¹³ See *id.* at n. 35 (describing the differences between their conclusions and ours).

Removing individuals and trusts leads to some odd results. In the sample of five hundred cases, the party filing the greatest number of lawsuits is a well-known trust in the patent assertion world, whose business activity is licensing and litigating patents.¹⁴ In our view, if a party's activity is licensing and litigating patents, it should not matter whether one is a corporation, a partnership, an individual, or a trust. The key issue is the activity in which one is engaged.

Given that one hundred cases per year is a small sample, we were curious to see what the data from the full set of cases would look like. Would the dramatic rise in litigation by patent monetization entities hold true when we looked at all of them? Would enough of the cases reach definitive outcomes that we could form definitive conclusions about case outcomes? How would passage of the America Invents Act, which included provisions intended to reduce the amount of litigation by monetization entities, affect the picture?

In addition to these questions, we also looked at the history of the patents asserted in each litigation. What could we conclude about the effects of monetization by looking at the trail of each patent?

To answer these questions, we looked at all of the patent litigations filed in four years: 2007, 2008, 2011, and 2012. This involved analyzing roughly 13,000 cases and almost 30,000 patents asserted in those cases. In this process, we were able to identify almost 99% of the entities in our dataset.

Our analysis of the full set of cases across the chosen years confirmed what we saw in the smaller sample: patent infringement litigation by patent monetization entities

¹⁴ See Jeruss et al., *supra* note 11, at 382.

had risen dramatically over a remarkably short period of time. One of the most striking results was that in 2012, litigation by patent monetization entities represented a majority of the patent litigation filed in the United States. Specifically, patent monetization entities filed 58.7% of the patent lawsuits in 2012. This is a sharp rise from 2007, when patent monetization entities filed only 24.6% of patent infringement litigations.

The number of defendants sued by patent monetization entities decreased slightly from 2011 to 2012. This may suggest that changes in the America Invents Act had at least some initial success in encouraging patent monetization entities not to cast their nets so widely. However, even with this reduction, the number of defendants sued by patent monetization entities in 2012 was still much higher than in 2007 and 2008.

Our data also showed that the parties who filed the highest number of patent lawsuits were generally monetizers. Of the ten parties who filed the greatest number of patent litigations in the years we studied, all were patent monetization entities.

Our analysis of the litigations also revealed another problem that has gone unnoticed in the literature. Mechanisms for notifying the public when patents have been asserted in litigation are woefully inadequate. Although federal law requires that district courts notify the PTO when patents are asserted, and the PTO's main database in theory notifies the public, the information for more than two-thirds of the patents asserted in our database was not available in the PTO's database.¹⁵ This lack of notice puts small

¹⁵ 35 U.S.C. § 290 (2002) ("The clerks of the courts of the United States, within one month after the filing of an action under this title shall give notice thereof in writing to the Director, setting forth so far as known the names and addresses of the parties, name of the inventor, and the designating number of the patent upon which the action has been brought. If any other patent is subsequently included in the action he shall give like notice thereof. Within one month after the decision is rendered or a judgment issued the clerk of the court shall give notice thereof to the Director. The Director shall, on receipt of such notices, enter the same in the file of such patent."); 15 U.S.C § 1116(c) ("It shall be the duty of the clerks of such courts within one month after the filing of any action, suit, or proceeding involving a mark registered

companies, particularly startups, at a disadvantage because they cannot easily determine whether a patent has been asserted in litigation, which patent holders are asserting their rights, or what territory the patent holders may be claiming. In theory, the patent system provides notice through the language of the patent system itself, but with modern patenting, it can be difficult to predict what the patent holder will claim as the scope of the patent in many industries, and it is a particularly difficult maze for smaller players.

Finally, tracing the transfer history of the patents asserted in our database revealed what many have suspected: there is a robust market for transfers of patents prior to litigation. Looking at patents for which transfer history was available,¹⁶ a majority of the patents asserted in the cases we studied had been transferred to someone other than their original owners prior to litigation. Roughly 52% of the patents had been transferred, while roughly 47% were still held by their original owners.¹⁷

Our analysis regarding the age of patents litigated suggested a surprising result. The distribution of asserted patents showed a consistent decay from the patent issuance; the newest patents issued were the most frequently litigated, whereas and the oldest patents were the least likely to be litigated. Our data showed that operating companies

under the provisions of this chapter to give notice thereof in writing to the Director setting forth in order so far as known the names and addresses of the litigants and the designating number or numbers of the registration or registrations upon which the action, suit, or proceeding has been brought, and in the event any other registration be subsequently included in the action, suit, or proceeding by amendment, answer, or other pleading, the clerk shall give like notice thereof to the Director, and within one month after the judgment is entered or an appeal is taken the clerk of the court shall give notice thereof to the Director, and it shall be the duty of the Director on receipt of such notice forthwith to endorse the same upon the file wrapper of the said registration or registrations and to incorporate the same as a part of the contents of said file wrapper.”).

¹⁶ The transfer data for 15.1% of the patents studied was not available via the PTO’s patent assignment database. Thus, the percentages listed in the text represent percentages of patents asserted for which assignment data was available.

¹⁷ In conducting our analysis, we ignored patent transfers from inventors to their employers, as we assumed there was a preexisting obligation on the part of these inventors to transfer ownership to their employers.

were more likely than patent monetizers to assert newer patents. This likely indicates that operating companies assert their latest patents, which presumably match their more lucrative product offerings, against their competitors, while patent monetizers are more likely to assert any patent they happen to have acquired. While patent monetizers file more litigations than operating companies, the operating companies assert significantly more individual patents than patent monetizers. We also note that we have studied the age of patents from issuance rather than from their priority filing dates, which might produce a slightly different picture.

This age distribution could be an indication that parties are increasingly filing for patents for the primary purpose of assertion. It also suggests that for patents in many technical fields, such as electronics, the full twenty-year term might be of less practical consequence.

We also noticed an interesting market for post-expiration transfers. Because U.S. law allows for retrospective collection of infringement damages for up to six years, parties transfer expired patents to other parties, who then litigate them. This behavior may be suggestive of the development of subspecialties in the patent monetization market, as the high level of interest in the activity drives more parties and speculators into the market.

In addition, if a patent that has been asserted in litigation is transferred once, it is likely to be transferred again. This could be further indication of the development of an active trading market providing for arbitrage opportunities.

Other observations and conclusions are described below. In particular, we offer a few observations from a case study of selected patent categories that are being asserted

in the smart-phone wars.

I. PRIOR LITERATURE¹⁸

For many years, discussion of patent monetization has involved an abundance of anecdotes and a lack of empirical evidence. This has begun to change, particularly in the last eighteen months, as an increasing number of studies have cast light on monetization activity and its litigation effects.

Many of the authors use the term “NPE” to describe the entities they are studying, a term that stands for “non-practicing entity.” We will explain below why we use the term monetizer. Nevertheless, in describing an author’s work, we will use the term that the author chooses.

James Bessen and Michael Meurer published one of the first data-based analyses of patent monetization entities in their 2008 book, *Patent Failure*.¹⁹ The authors defined “patent trolls” as individual inventors who do not commercialize or manufacture their inventions.²⁰ Consequently, patent aggregators, groups, and other entities fell outside of the study’s scope. Focusing only on the behavior of non-commercializing individual inventors from 1984 to 1999, Bessen and Meurer concluded that patent trolls had little effect on the cost of patent litigation.²¹

¹⁸ We described the literature as it existed through late summer 2012 in our prior work. See Jeruss et al., *supra* note 11.

¹⁹ JAMES E. BESSEN & MICHAEL J. MEURER, *PATENT FAILURE* 16 (2008) (arguing that the costs of patent litigation exceeded patents’ earnings benefits in the non-pharmaceutical and chemistry sectors).

²⁰ *Id.* at 17.

²¹ *Id.* at 16-17. See also James E. Bessen & Michael J. Meurer, *The Direct Costs from NPE Disputes* (Bos. Univ. Sch. of Law, Working Paper No. 12-34, 2012), available at <http://ssrn.com/abstract=2091210>. Bessen and Meurer’s work is based on a database compiled by the patent aggregator RPX and a small survey of entities that had a relationship with RPX.

Studies using a broader definition of “patent troll,” however, show a more substantial impact. For example, Colleen Chien’s 2010 study showed that NPEs brought 20% of patent infringement suits in the high-tech field.²² Chien’s study classified patent trolls as those entities using patents primarily to extract license fees.²³ The definitional differences between the studies may account for much of the disparity in results. In addition, the fact that Chien’s data captured much more recent patent litigation may explain why her study showed a greater impact from patent monetizers. Our own prior work confirms that the number of lawsuits from patent monetization entities has been rising significantly in recent years.²⁴

Current research corroborates this view and demonstrates that patent monetization is quickly dominating the litigation landscape. For example, Chien recently presented findings to the DOJ and the FTC showing that NPEs brought 61% of patent lawsuits in 2012, an increase from 45% in 2011 and 29% in 2010.²⁵ Whereas NPE infringement actions accounted for only 20% of all cases in 2006, by 2012 that number rose to 57%.²⁶ Brian Love has also documented the litigious behavior of NPEs.

²² Colleen V. Chien, *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, 62 HASTINGS L.J. 297, 334 (2010).

²³ *Id.* at 327 (distinguishing patent-assertion entities from other organizations, such as universities, that do not practice their inventions but support the development of new technology).

²⁴ See Jeruss et al., *supra* note 11. The group Patent Freedom, which provides large operating companies with information on NPEs, also concluded that patent troll litigation has increased in recent years. See *All About NPEs*, PATENTFREEDOM, <https://www.patentfreedom.com/about-npes/litigations> (last updated Aug. 6, 2013).

²⁵ Colleen V. Chien, Patent Assertion Entities: Presentation to the Dec. 10, 2012 FTC/DOJ Hearings on PAEs, (Dec. 10, 2012), available at <http://ssrn.com/abstract=2187314>, at 23 (using a database from the patent aggregator RPX). Also using RPX data, Bessen, Ford & Meurer conclude that NPE lawsuits result in the loss of billions of dollars. See James Bessen, Jennifer Ford & Michael J. Meurer, *The Private and Social Costs of Patent Trolls 2* (Bos. Univ. Sch. of Law, Working Paper No. 11-45, 2011); see also David L. Schwartz & Jay P. Kesan, *Analyzing the Role of Non-Practicing Entities in the Patent System*, CORNELL L. REV. (forthcoming 2014) (manuscript at 103), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2117421 (identifying the upper limit of NPE litigation cost at \$29 billion).

²⁶ PowerPoint: Mark Lemley, *Trolls, Trolls Everywhere*, at UC Hastings debate with Dr. Christian Mammen, “Hostility to patent trolls has made bad law” at 9 (Feb. 15, 2013).

His 2012 study analyzed a sample of 472 recently expired patents that were issued during a two-year period. Love's data showed that NPEs file more than twice as many lawsuits per patent as their practicing counterparts.²⁷ Moreover, according to Love, NPEs sue more than four times as many alleged infringers per patent and do so much later in the patent term than other rights holders.²⁸

Patent monetization litigation has not remained confined to federal courts either. Colleen Chien and Mark Lemley published a study showing that NPEs have flocked to the International Trade Commission ("ITC") in the wake of the Supreme Court decision in *eBay Inc. v. MercExchange, LLC*.²⁹ *eBay* severely limited patent monetization entities' ability to obtain injunctions in district courts.³⁰ Given that an injunction (or the credible threat of one) is valuable leverage in settlement negotiations, patent monetization entities are seeking them from the ITC instead, thereby saddling that court with more cases than it has ever had before.³¹ Chien and Lemley concluded that because the ITC is not bound by the *eBay* factors, this increase in patent litigation risks undoing many of the case's desirable consequences.³²

The effects of patent monetization litigation appear to be felt most strongly in the Internet and technology sectors, as well as by young startups. John R. Allison, Emerson

²⁷ Brian J. Love, *An Empirical Study of Patent Litigation Timing: Could a Patent Term Reduction Decimate Trolls Without Harming Innovators?*, 161 U. PA. L. REV. 1309, 1318, 1336 (2013).

²⁸ *Id.*

²⁹ Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1 (2012) (arguing that the ITC should assert broader discretion under 19 U.S.C. § 1337 when considering injunctive relief for NPEs).

³⁰ See *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) (holding that courts must account for equitable considerations before granting injunctive relief); *cf.* Chien & Lemley, *supra* note 29, at 2 (explaining that Justice Kennedy's concurrence in *eBay* precludes NPEs from asserting certain equitable considerations that would warrant an injunction because, if granted, the injunction can then be wielded against defendants in an effort to extract exorbitant licensing fees).

³¹ See Chien & Lemley, *supra* note 29, at 10 fig.1 (finding that only 26% of patent assertion entities were successful in obtaining injunctions between 2006, when *eBay* was decided, and 2011).

³² *Id.* at 4.

H. Tiller, Samantha Zyontz, and Tristan Bligh recently compared Internet-related patents to non-Internet-related patents and concluded that the former were litigated 7.5 to 9.5 times more frequently than the latter.³³ The authors also determined that owners of Internet-related patents are more likely to settle an infringement case once a lawsuit has been filed.³⁴ Similarly, Chien conducted a survey study of 223 technology startups and found that 79 of them had been “trolled,” that is, threatened with a patent monetization lawsuit unless they acceded to a licensing arrangement.³⁵ Her research also showed that most defendants in troll suits are small: 55% of her surveyed defendants earned profits of less than \$10 million a year.³⁶ Jaconda Wagner, however, suggests a trend towards enforcement actions against larger companies.³⁷

Robin Feldman also conducted a survey of patent demands against startups in the venture-backed community.³⁸ Among those who responded, one in three startup companies have received patent demands and 70% of venture capitalists have portfolio companies that have received patent demands. Demands have increased over the last

³³ John R. Allison et al., *Patent Litigation and the Internet*, 2012 STAN. TECH. L. REV 3, 4 (2012).

³⁴ *Id.*

³⁵ Colleen V. Chien, *Startups and Patent Trolls* 1 (Santa Clara U. Sch. of Law, Research Paper No. 09-12, 2012), available at <http://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1554&context=facpub> [hereinafter Chien, *Startups and Patent Trolls*]; see also Colleen V. Chien, *Patent Assertion and Startup Innovation*, NEW AMERICA FOUNDATION (2013), available at <http://newamerica.net/sites/newamerica.net/files/policydocs/Patent%20Assertion%20and%20Startup%20Innovation.pdf> [hereinafter Chien, *Patent Assertion and Startup Innovation*] (showing that 40% of startups that had received a patent demand from a patent assertion entity reported a significant operational impact, and that some demands seemed to be triggered by an event in the startups development, such as an announcement, funding, or M&A activity).

³⁶ Chien, *Startups and Patent Trolls*, *supra* note 35, at 10.

³⁷ See Jaconda Wagner, *Patent Trolls and the High Cost of Litigation to Business and Start-Ups – a Myth?*, 45-OCT MD. B.J. 12, 17 (2012) (describing a trend toward enforcement actions against larger companies).

³⁸ See Robin Feldman, *Patent Demands & Startup Companies: The View from the Venture Capital Community* (UC Hastings, Research Paper No. 75), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2346338.

five years, and the majority of them come from entities that license or litigate patents as their core activity.

Several studies have illuminated other key aspects of patent litigation as practiced by patent monetization entities. For example, David Schwartz described a cost imbalance in contingent fee representation between plaintiffs and defendants in patent lawsuits.³⁹ He ascribed the disparity to the fact that NPEs have far fewer documents to discover and tend to litigate very sparingly, avoiding substantial motion practice.⁴⁰ In another study, Michael Risch concluded that most of the patents asserted by the ten most litigious NPEs, in terms of lawsuits filed, came from operating companies and that most of them sat on the shelf for more than seven years before being asserted.⁴¹ Research into the effects of modern patent monetization on other aspects of litigation is in its early stages, but much of the literature has shown that monetization activity has surged over the last five years.⁴²

Significantly, however, while patent monetization entities increasingly assert their patents in litigation, the number of defendants decreased in 2012, a phenomenon confirmed by our data. The reduction in the number of defendants appears to be at least partially the result of the America Invents Act's new joinder rules.⁴³

³⁹ David L. Schwartz, *The Rise of Contingent Fee Representation in Patent Litigation*, 64 ALA. L. REV. 335, 361 (2012).

⁴⁰ *Id.* at 370.

⁴¹ Michael Risch, *Patent Troll Myths*, 42 SETON HALL L. REV. 457 (2012). The list was provided by PatentFreedom, which identifies itself as offering subscriptions and services to help operating companies and law firms manage NPE risk more effectively. See Subscriptions, PATENTFREEDOM.COM, <https://www.patentfreedom.com/subscriptions> (last visited Dec. 12, 2013).

⁴² See Lemley, *supra* note 26, at 9 (showing an upsurge of NPEs as a percentage of all patent infringement actions using the RPX database).

⁴³ Colleen V. Chien, *Reforming Software Patents*, 50 Hous. L. REV. 325, 383 (2012) (noting that trolls could maximize damages awards by suing multiple defendants in a single action, giving defendants less time to present their cases in jurisdictions that do not increase the amount of time available as the number of defendants increases).

Prior to the America Invents Act, monetization entities could join numerous defendants in a single action, provided that all of the entities were alleged to have infringed the same patent. The America Invents Act altered this scheme so that defendants may be joined in a suit only if the plaintiff seeks joint or several relief or if the cause of action for each defendant results from the same transaction and gives rise to a common set of facts.⁴⁴ In her presentation at the FTC/DOJ workshop, Chien reported that the number of defendants in lawsuits filed by NPEs has fallen from 3,018 in 2011 to 1,788 in 2012. She attributed the decline to the America Invents Act's new joinder provision.⁴⁵ In a similar vein, Christopher Cotropia, Jay Kesan and David Schwartz found that the number of defendants in lawsuits filed by NPEs did not change substantially between 2010 and 2012.⁴⁶

To these emerging views of patent monetization, we add our own. As described in the next section, we took a deep look at all patent infringement litigation filed for a two-year period from 2007 to 2008 and the most recent two-year period of 2011 to 2012 to see if we could identify trends and changes.

II. AIA 500 EXPANDED: METHODOLOGY & DESIGN

The following section describes the data used as well as the methodology and design of the study. This section also describes some of the limitations of the study, although other limitations are noted in the discussion of results.

⁴⁴ 35 U.S.C. § 299 (2011).

⁴⁵ Chien, *supra* note 25, at 24.

⁴⁶ See Christopher Anthony Cotropia, Jay P. Kesan & David L. Schwartz, *Patent Assertion Entities (PAEs) Under the Microscope: An Empirical Investigation of Patent Holders as Litigants*, (forthcoming), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2346381.

As an initial matter, we note that as with the AIA 500 study, we have chosen to use the term “patent monetization entity” or “monetizer” for short. We define a monetizer as one whose primary focus is licensing and litigating patents, as opposed to making products. Our definition includes any party, regardless of whether they are a partnership, corporation, trust or individual. Our figures, however, are also separated into subcategories for more granular analysis along the way.

There has been considerable variation in the terms used to identify the type of entity described above. These range from the more derogatory term “patent troll” to more neutral terms such as “non-practicing entity” and “patent assertion entity.” The term “non-practicing entity” or “NPE” may be particularly confusing for those outside the patent brotherhood. In the code-like lingo of patent law, one who creates a product using a patent is described as “practicing” a patent. To those less steeped in the vernacular, however, the term makes little sense and even sounds as if those who make products are “just practicing” while the real work is somehow performed somewhere else.

The term “patent assertion entity” communicates more from a plain language perspective than the term NPE and has been favored by the FTC.⁴⁷ Using “patent assertion entity,” however, carries the risk that it could be interpreted as leaving out those who do not assert patents themselves, but rather focus on licensing and transferring patents to others who will assert them. In our view, parties who do not assert patents against manufacturers but make money by licensing patents and then

⁴⁷ For an argument that patents should be written in plain language, to the extent possible, see Robin Feldman, *Plain Language Patents*, 17 TEX. INTELL. PROP. L.J. 289 (2009).

transferring those patents to others who will assert them against manufacturers, have the potential to create the same market distortions as those who assert the patents directly.

Although the FTC includes in its “patent assertion entity” definition both those who assert directly and those who transfer patents to others who then assert, there is a risk that the terminology could be misconstrued, intentionally or in error. Thus, we use the term “monetizer” to describe entities whose primary focus is licensing and litigating patents, as opposed to making products, and we include in that term any party, regardless of whether they are a partnership, corporation, trust or individual. Our original AIA 500 study contains additional discussion of the choice of terms, as does Robin Feldman’s study of startup companies.⁴⁸

Finally, we note that with the rapid emergence of a market for patent monetization, the types of entities and the activities in which they engage are complex and fluid. Modern patent markets involve tremendously complex, multi-dimensional games of chess, and the ways in which those games are played continue to evolve rapidly.

A. Source of Data

We performed our study using data collected from lexmachina.com. Lex Machina is a Silicon Valley startup that spun out of a joint project between Stanford University Law School and Stanford’s Computer Science Department in late 2009.⁴⁹ Lex Machina’s database contains over 130,000 intellectual property and antitrust cases, filed from January 1, 2000 to the present day. The cases are culled from PACER, all

⁴⁸ See Feldman, *supra* note 38, at 9; see also Jeruss et al., *supra* note 11, at 366-370.

⁴⁹ *Lex Machina – About Us*, LEX MACHINA, <http://lexmachina.com/about> (last visited March 9, 2014).

ninety-four district court sites, the ITC's EDIS site and the PTO site.⁵⁰ PACER is the administrative database for the U.S. federal courts, and EDIS is the ITC's website. After the cases are culled, Lex Machina applies Lexpressions, a state-of-the-art natural language processing ("NLP") text classification system, to the documents and creates datasets for case outcomes, parties, law firms and attorneys, patents, districts, and judges. The Lex Machina database is available to academics free of charge.

We expanded upon the data in our litigation database by accessing information from the PTO about the specific patents asserted. In particular, we examined pertinent records from the PTO's assignment database,⁵¹ the PTO's patent database,⁵² and the PTO's PAIR database,⁵³ which contains information about a patent's prosecution history.

B. Study Design

In order to look more deeply at the data produced in the AIA 500 study and the conclusion that patent litigation by patent monetization entities has risen dramatically since 2007, we chose to look at the full dataset of all relevant patent litigations filed for years at the beginning of the data period and for the most current period. In particular, we looked at the full set from the first two years of the relevant period, 2007 and 2008. Using data from two years gave us some comfort that there was nothing particularly

⁵⁰ *Id.*

⁵¹ UNITED STATES PATENT AND TRADEMARK OFFICE, PATENT ASSIGNMENT QUERY, <http://assignments.uspto.gov/assignments/?db=pat> (last visited March 9, 2014).

⁵² UNITED STATES PATENT AND TRADEMARK OFFICE, PATENT FULL-TEXT DATABASES, <http://patft.uspto.gov/> (last visited March 9, 2014).

⁵³ UNITED STATES PATENT AND TRADEMARKS OFFICE, PATENT APPLICATION INFORMATION RETRIEVAL, <http://portal.uspto.gov/external/portal/pair/> (last visited March 9, 2014).

anomalous about one of the years, although it is certainly possible that both were anomalous in ways that we have been unable to detect.

In choosing two current years for comparison, we chose 2011 and 2012. The original AIA 500 dataset used the final years of 2010 and 2011. The study was conducted during the summer of 2012, making 2011 the most recent full year of data. For our expanded study, however, we were able to use the more recent data for the full year of 2012. Using data from 2011 and 2012 also allowed us to take a preliminary look at possible effects from the patent law changes in the America Invents Act, which was signed into law in September of 2011. As discussed below, the effects could be characterized in terms of changes in filing patterns in anticipation of the legislative change as well as changes in filing patterns after passage of the legislation. We will describe these issues further below.

To look at the data itself, we started by extracting every electronically available patent case for the years 2007, 2008, 2011, and 2012. This yielded over 14,000 cases. We excluded declaratory judgments using Lex Machina's automated declaratory judgment classifier and supplemented this with manual exclusion where possible (for example, when a coder found a declaratory judgment case that the system did not catch). Although it is possible that our system missed a declaratory judgment case, we estimate that this would have happened in only a small percentage of cases, based on the authors' review of a random sample of the data.⁵⁴ To the extent that failure to exclude a

⁵⁴ We also observed that many declaratory judgment cases were twined with a traditional patent assertion. Counting both the declaratory judgment case and the traditional patent assertion would lead to something akin to over counting the assertions for patents where both the patent owner and the accused infringer took independent steps in court.

declaratory judgment case would skew the data, it would skew it toward over-representing operating company plaintiffs.

Declaratory judgment actions arise when a company that has been threatened with a patent infringement claim files a lawsuit to declare that the patent is invalid. As a general matter, patent monetizers do not make products and are thus not threatened with claims that they are infringing someone else's patent. Therefore, patent monetizers tend not to file declaratory judgment cases.

We chose to exclude declaratory judgment cases because we were examining the question of the type of entity that initiated the litigation. Given that declaratory judgment cases are to some extent a defense—they are filed when one has reason to fear the threat of litigation—the party filing the declaratory judgment case is less likely to be the party who sets the litigation in motion.

Lex Machina attempts to identify and remove false marking cases from its database, and the coders also removed these cases where possible. As a backup, we used data from Docket Navigator⁵⁵ to exclude approximately seventy additional false marking cases. Still, it is possible that a very small subset of false marking cases were left in the data.

In cases where an initial case was transferred or severed, we removed the new case so that the initial case would not be double counted. This reduced the total to almost 13,000 cases.

⁵⁵ Justin E. Gray, *False Marking Case Information*, GRAY ON CLAIMS (Dec. 20, 2011), <http://www.grayonclaims.com/false-marking-case-information>.

Given that our research in the GAO study indicated that including secondary named plaintiffs could skew the data, we also limited the data to the first named plaintiff in each action.⁵⁶

To provide a more robust picture of the litigation data, we gathered additional information about the patents identified in the database for the study years by looking at pertinent PTO records. This entailed collecting information on almost 13,000 unique patent records for patents of all types (utility, design, plant, and reissue) from a dataset that contained almost 30,000 total patent records.

1. Existing Data

Next, we created a record of the first named plaintiff for each of the almost 13,000 cases in our dataset. We used existing data to narrow the subset of entities, which required manual review. In particular, we coded the entities that were already coded during the GAO 500 study.⁵⁷ We also used existing lists of known operating companies, such as the Fortune 500,⁵⁸ the WashingtonTech100,⁵⁹ and a list of the fifty largest pharmaceutical companies by sales⁶⁰ to identify known operating companies.

The authors do not know of any pure monetization entities within these lists. Still, one limitation of this approach is that some of the Fortune 500 companies do engage in significant monetization activity, and under our approach, unless they were caught by the GAO study, they would be classified as an operating company. For

⁵⁶ See Jeruss et al., *supra* note 11, at 365-366.

⁵⁷ See *id.* at 364-366.

⁵⁸ List of Fortune 500 Companies, CNN MONEY, http://money.cnn.com/magazines/fortune/fortune500/2012/full_list/ (last issued May, 21, 2012).

⁵⁹ List of companies awarded government contracts in 2012, WASHINGTON TECHNOLOGY, <http://washingtontechnology.com/toplists/top-100-lists/2012.aspx> (last updated June 11, 2012).

⁶⁰ David Hunker, *The 50 Largest Pharmaceutical Companies by Sales*, SEEKING ALPHA, (Aug. 14, 2011, 7:55 PM), <http://seekingalpha.com/article/287269-the-50-largest-pharmaceutical-companies-by-sales>.

example, Qualcomm is classified as “Other Entity” based on research during the GAO study, where the authors found statements in Qualcomm’s Form 10-K that describe both traditional operating company business segments and a separate licensing business segment.⁶¹ If Qualcomm were only classified based on its Fortune 500 status, it would have been classified as an Operating Company because it is a Fortune 500 company. To the extent that the same issue affects other members of the Fortune 500 that were not reviewed during the GAO 500 study, our results may over-represent Operating Companies and under-represent Other Entities.

2. Entity Websites

After coding entities based on existing information, we coded entities based on their websites—in the event that such a classification was possible. We limited website classification to entities whose statuses were clear from their websites. For example, a 2012 website describing product sales that makes no mention of any patent monetization activity would be classified as “Operating Company.” Conversely, a website in which an entity describes itself as a patent litigation and licensing company would lead to that entity being classified as “Monetizer.” If an entity’s website was at all unclear, we used additional factors, described below.

To ensure accuracy, we had a second coder double-check each initial coder’s work, using a subset of the coder’s cases and flagging any issues. We found only a small number of cases in which the initial coder and the second coder disagreed, and in

⁶¹ Qualcomm, Inc. Annual Report (Form 10-K) 2 (Nov. 7, 2012), *available at* <http://www.sec.gov/Archives/edgar/data/804328/000123445212000371/qcom10-k2012.htm>.

these cases the disagreement tended to be based on limitations to the website approach, rather than the coder's interpretation of the website.

For example, one limitation of this approach is that it does not catch entities which have put up “sham” websites, or entities with websites describing product sales where sales are in fact limited and the companies have, behind the scenes, shifted their focus to monetization. For example, Soverain Software's website contains a “products” section and a “services” section, and explains:

Soverain Software™ provides e-commerce software and services for enterprises, focusing on the publishing, news syndicate and digital content industries. Soverain's flagship product Transact™ is a time-tested, robust e-commerce system which supports multiple storefront/merchant configurations. Soverain's products have been deployed to customers in 25 countries, from mid-market companies to large-scale deployments.⁶²

According to ArsTechnica, however, that website is a front: Court records show Soverain has never made a sale. The various voice mailboxes were all set up by Katherine Wolanyk, the former Latham & Watkins attorney who is a co-founder and partial owner of Soverain. And the impressive list of big corporate customers on its webpage? They are deals struck with another company, more than a decade ago.⁶³ To the extent that other companies have set up similar websites, this type of error would skew the results toward over-representing Operating Companies and under-representing Monetizers and Other Entities.

⁶² *Soverain – About Us*, SOVERAIN SOFTWARE, <http://www.soverain.com/asp/about/> (last visited Nov. 18, 2013).

⁶³ Joe Mullin, *How Newegg Crushed the “Shopping Cart” Patent and Saved Online Retail*, ARS TECHNICA (Jan. 27, 2013, 1:00 PM), <http://arstechnica.com/tech-policy/2013/01/how-newegg-crushed-the-shopping-cart-patent-and-saved-online-retail/>.

3. Other Factors

If an entity could not be classified from existing information or its website, we classified it using other publicly available documents. These included court filings, state incorporation records, patent assignment records, and external entity descriptions. Again, these outcomes were double-checked to ensure agreement between two coders.

a. Entity Types

We began with the same terminology regarding patent monetization entities and operating companies as we used in our prior AIA 500 study.⁶⁴ The nine categories used were:

- *Operating Company.* An entity was classified as an operating company if the company was classified as such in existing sources, or if we were able to classify the entity as such based on the entity's webpage.⁶⁵ As in the AIA 500, an entity was described as an operating company if it described itself as selling a product or providing a service other than patent monetization.⁶⁶
- *Patent Monetization Entity.* An entity was classified as a patent monetization entity if the company was classified as such in existing sources, or if we were able to classify the entity as such based on the entity's webpage.⁶⁷ Where such a classification was not possible, we looked at verifiable documents such as court filings and company press releases. We also looked at the dates of company incorporation, dates of filing, and relationships to other entities. An entity was classified as a patent monetization entity if it described itself as such, or if it had:

⁶⁴ See Jeruss et al., *supra* note 11, at 366-372.

⁶⁵ *Id.* at 370.

⁶⁶ *Id.*

⁶⁷ *Id.*

(1) a clear connection to a monetizer such as Acacia; (2) an incorporation date within six months of filing suit; or (3) an assignment date of the asserted patents within six months of filing suit, and provided there was no contrary evidence that the apparent monetizer produced or sold products and services like an operating company. Contrary evidence could have included a self-description as an operating company, the company website, or an external description of the operating company. We also classified an entity as a patent monetization entity when there was no evidence of operating status and the address of its principal place of business was the same as the address of its litigation counsel.

- *Suspected Operating Company.* We used the same methodology as in the AIA 500, coding an entity as a suspected operating company where there was some form of unverifiable evidence that the company was such an entity.⁶⁸ This mainly took the form of unverifiable sources such as publications describing the company as an operating company.⁶⁹
- *Suspected Patent Monetization Entity.* We used the same methodology as in the AIA 500, coding an entity as a suspected operating company where there was some form of unverifiable evidence that the company was such an entity.⁷⁰ This mainly took the form of unverifiable sources such as blogs describing the company as a patent monetization entity.⁷¹
- *Linked to Operating Company.* As in the AIA 500, we used this category for a company linked to operating companies if we could not determine the specific

⁶⁸ *Id.* at 370-71.

⁶⁹ *Id.*

⁷⁰ *Id.* at 371.

⁷¹ *Id.*

role the entity played within the operating company.⁷² We did not create a “Linked to Patent Monetization Entity” category because in each case we found, the company linked to a patent monetization entity was itself a patent monetization entity.

- *Individual or Trust.* As we did in the AIA 500, we created a separate category for individuals and trusts, but note that individuals and trusts appear to function more like monetizers than like operating companies.⁷³
- *University.* We kept the University category used in the AIA 500, and this time found fifty-three cases in which a university was the first named plaintiff.⁷⁴ Further research is needed to determine whether there are patterns in how universities behave in patent cases.
- *Other Entity.* We again used “Other Entity” as a catchall for entities that did not fit into the above categories. This category includes companies that are “mixed,” meaning they could not be clearly classified as either primary operating companies or primary monetizers.
- *Insufficient Evidence.* Again, if we could not find enough information to classify an entity in any of the other categories, we used Insufficient Evidence. This time, we were able to classify almost 99% of our cases, leaving only 153 of almost 13,000 cases marked as Insufficient Evidence.

⁷² *Id.*

⁷³ *Id.* at 371-72.

⁷⁴ *Id.* at 372.

b. Case Outcomes

We used the same basic categorization framework as that used in the AIA 500, categorizing outcomes in the following ways: (1) likely settlements; (2) procedural dispositions; (3) claimant wins (including consent judgments favoring the claimant); (4) claimant losses (including consent judgments favoring the claim defendant); (5) ongoing cases, including stays; and (6) cases that were transferred out of the initial filing district, severed, or consolidated.⁷⁵ For cases in category (6), we deleted cases that were double-counted (e.g. a transfer coded in both its initial filing district and its transfer district), but we were unable to code transfer outcomes because of the size of the sample.

One limitation to this approach is that our codings are based on whether the claimant or claim defendant wins. They do not, however, provide insight into whether the “winning” party won on an initial claim or whether they won on a counterclaim. This issue does not affect monetizers, for whom patent infringement counterclaims are rarely an issue. But it does mean that caution must be taken in drawing conclusions about operating company outcomes. With operating companies, some of the “claimant wins” may actually be cases in which the plaintiff operating company lost on an infringement counterclaim.

Explanation of the categories used for case outcomes are as follows. These are the same as the categories we used in the AIA 500 study:

- *A Likely Settlement.* We categorized cases as likely to have been settlements if the case was dismissed at the parties' request pursuant to Rule 41 of the Federal Rules of Civil Procedure.⁷⁶ This includes cases in which the party who claimed

⁷⁵ *Id.* at 372-74.

⁷⁶ FED. R. CIV. P. 41.

patent infringement voluntarily dismissed the case before the defendant filed an answer. It also includes stipulated dismissals, in which both parties agree that the judge should dismiss the complaint without entering a judgment of fault, often because they have entered into a confidential settlement agreement. We excluded cases in which there was a determinative outcome in the case prior to a settlement. For example, we excluded cases in which, prior to settlement, there had been a trial verdict or in which there had been a summary judgment finding that the defendant had not infringed the patent. We also excluded cases that were dismissed for procedural reasons, such as those dismissed under Rule 12 of the Federal Rules of Civil Procedure,⁷⁷ which covers defenses such as the lack of jurisdiction and failure to state a claim.

- *A Procedural Disposition.* This category included cases dismissed for procedural reasons, such as those dismissed pursuant to Rule 12 of the Federal Rules of Civil Procedure,⁷⁸ which covers defenses such as the lack of jurisdiction and failure to state a claim.
- *The Claimant Wins.* This category denotes cases in which an infringement claimant won, including consent judgments in favor of the party filing the claim. In a consent judgment, the judge, with the consent of both parties, enters a binding decision in favor of one party. For example, the parties may choose to consent to a particular decision after claim construction if the judge's construction essentially destroys one side's case. When a party sees that a loss is likely given the judge's construction of the claim, it may be in that party's

⁷⁷ FED. R. CIV. P. 12.

⁷⁸ *Id.*

interest to move straight to a final judgment, which can then be appealed to the Federal Circuit. An appeal to the Federal Circuit cannot take place until the trial court has entered a final judgment.⁷⁹ For operating company cases, it is possible that the plaintiff could be the loser in a case coded as “claimant wins,” as the plaintiff could have lost on a counterclaim. This is unlikely to happen in monetizer cases. However, given that monetizers by definition do not practice the technology at suit, they are unlikely to be sued for infringement counterclaims.

- *Claimant Loses.* This category denotes cases in which the party defending against the claim of infringement has won, including consent judgments in favor of the defendant. As described above, in a consent judgment the judge enters a binding decision with the consent of both parties in favor of one party.
- *Ongoing Cases.* This category consists of cases that are continuing as of the time of the study, including cases that have been stayed.⁸⁰
- *Cases Transferred, Severed, or Consolidated.* This category denotes cases that were transferred out of the district in which they were originally filed, as well as cases that were severed or consolidated. We avoided double counting by excluding cases if they appeared in our sample as the result of a transfer, rather than an initial filing.

⁷⁹ See generally James E. Pfander and David R. Pekarek Krohn, *Interlocutory Review by Agreement of the Parties: A Preliminary Analysis*, 105 NW. U. L. REV. 1043, 1066-1069 (2011) (providing a general discussion of Federal Circuit jurisdiction over final judgments).

⁸⁰ We note that cases may have been stayed pending an ITC decision. Given that we do not include the ITC decisions in our dataset, there would be no double counting of outcomes.

c. Additional Limitations

In addition to the limitations described above, we wish to note the following limitations in the study, which are similar to the limitations in the original AIA 500 study. The AIA 500 Expanded study considers a much larger set of data than the original AIA 500. Rather than a sample of one hundred cases a year, we looked at the entire set of cases across the four years we examined. Nevertheless, this is still only a limited view of all patent litigation across time, and there could certainly be anomalous characteristics that we did not identify or detect. In particular, the America Invents Act has the potential to distort the data in ways in addition to the ones described above. Although we believe it is important to monitor the trends of patent monetization as they are occurring, it may take some years before one can reach a conclusion about the effects of the America Invents Act.

Other limitations exist, such as the lack of comprehensive electronic records for some of the cases filed in 2007. In addition, as described above, our study did not include cases filed as declaratory judgments. Declaratory judgment cases arise when a party, threatened with a claim of patent infringement, files an anticipatory suit to challenge the validity of the patent with which it is threatened. Our study focused on plaintiffs who claim that their patents have been infringed, and declaratory judgment plaintiffs do not allege patent infringement.

Another limitation results from focusing mainly on entities filing lawsuits, rather than focusing on defendants in the lawsuits. As a result of this approach, our case outcome is based on the last recorded outcome in the case and does not account for different outcomes obtained by different defendants. Where there were multiple defendants and one defendant settled while another went to trial, the case is likely to be

coded as a trial outcome, rather than a settlement. Thus, the number of settlements may be slightly understated in the results.

A particular limitation of concern relates to the difficulty of identifying with perfect accuracy what constitutes a case, especially for such a large number of cases. Ideally, one would be able to trace all cases to a root filing and avoid any duplications as the case is transferred, consolidated or refiled. However, this process is fraught with judgment decisions and potential errors in the databases themselves. These types of difficulties could result not only in multiple cases being created where there should be only one, but also in cases being misattributed to a particular year. For example, a case originally filed in 2006 and transferred in 2011 could be mistakenly included as a new filing in 2011. This information can be difficult to determine and properly categorize for each case.

We caution that this issue suggests particular limitations for the section on case outcomes. Few patent cases are resolved in any manner other than settlement. Thus, observations about these few non-settled cases would be strongly affected by any case counting errors, given the small numbers with which we are working.

The most significant limitation for this and other studies of this kind is the focus on lawsuits filed, rather than on other aspects of patent monetization. Increasing evidence, both anecdotal and empirical, suggests that patent litigation represents only the tip of the iceberg and that the vast majority of patent monetization activity never progresses to the filing of a patent infringement lawsuit.⁸¹ For example, the White

⁸¹ See Feldman, *supra* note 5, at 312-317, for a description of the difficulties of examining patent monetization behavior outside of the context of litigation and an explanation of how the FTC could use its powers to initiate a broad based investigation. Feldman explains that: 1) the uncertainty surrounding the

House Report on Patent Assertion in 2013 noted that conservative estimates place the number of patent threats in 2012 at 60,000 with the actual number more likely over 100,000.⁸² The total number of lawsuits filed by all parties per year was roughly 5,000 at its highest over the period studied. Thus, even using the more conservative White House estimates, more than 90% of patent demands never reach the courthouse door.⁸³ As a result, focusing on lawsuits filed provides only a slice of the picture.

C. Number of Defendants

Given the large number of cases, we were unable to manually count the number of defendants. Instead, we relied on Lex Machina's automated entity classifications. Although Lex Machina is a leader in this field, it is still possible that we over-represented defendants where multiple related defendants (e.g. a company and three of its subsidiaries) were grouped in the same litigation. We do not view this as a large problem because: 1) according to court findings, these are technically separate defendants; and 2) to the extent that defendants are over-counted, this problem should be consistent among years and should affect all parties.

boundary of patent rights, 2) the lack of a quick, reliable, and inexpensive way to resolve such uncertainty, and 3) the possibility of facing outsized damage awards and injunction against entire products, a rational company may choose to pay a patent holder's demands, even if the patent is weak or does not apply to the product, in order to avoid the costs and risks of litigation. *See also* FELDMAN, *infra* note 103, at 50–74 (describing bargaining outside lawsuits in the modern patent system to resolve uncertainties surrounding the boundaries of patent rights); Ewing & Feldman, *supra* note 5, at 23–25 (describing why it is economically rational for manufacturing companies to capitulate to a monetizer's demands rather than to fight, even if the patents underlying the demands are weak); *id.* at 15, 47–61 (describing the mass aggregator Intellectual Ventures, which has earned \$2 billion in licensing revenue since its inception in 2000 but did not file any lawsuits until 2010; the entity does appear in some cases to have transferred patents to third parties, who then filed lawsuits).

⁸² Executive Office of the President, *Patent Assertion and U.S. Innovation* 6 (June 2013) (noting conservative estimates place the number of threats in 2011 at 60,000 and more likely over 100,000), available at http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf.

⁸³ *See infra* p. 42 and Table “Number of Cases Filed by Entity by Year”.

Section III summarizes the results of our study. Graphs are integrated into the text, with charts showing the raw numbers.

1. Patent Data Expansion

We wanted to analyze various characteristics of the patents in our database. In particular, we wanted to gauge the age of the patents in our database at the time of their assertion in infringement actions. We also wanted to gauge the robustness of the emerging patent monetization markets by determining how many times the patents under examination had been transferred to new owners and how recently those transfers occurred prior to the filing of the litigation. Finally, we also wanted to see for the newer patents in our database the extent to which the PTO was informing the public about patent litigation.

Federal legislation requires that trial courts report patents asserted in litigation to the PTO. Presumably, this can aid in data gathering as well as in supporting the notice function of the patent system. Patents are intended to provide notice to the public of the inventive territory claimed by an inventor. However, information in the patent system is constantly changing as new products come to market and as new inventions emerge. Among other things, information on assertion of patents supports the notice function of the patent system by providing additional information to the public regarding the territory claimed.

There do not appear to be any enforcement mechanisms in place for ensuring that the information is reported to the PTO, let alone enforcement mechanisms to ensure that the information is freely and easily available to the public. Thus, our goal in examining this data was to determine whether reporting is taking place.

We do want to offer an additional caution on the analysis of patents asserted in litigation. The databases we used collect information on asserted patents through optical scanning. In some circumstances, the electronic system can, in error, include patents that were *not* asserted in the lawsuit, but rather were cited as prior art or included for some other reason in the complaint. We hand-checked the data as well, but it is possible that not all errors were caught.

a. Patent Age

We also wanted to gauge the age of the patents in our database at the time of their assertion. We used the PTO database to locate the precise issue date for each of the roughly 14,000 unique patents in our dataset. Where necessary, we expanded this list of dates to include the full set of patents in our dataset. We obtained the litigation filing dates from the Lex Machina database.

Calculating the age of the patent at the time of its litigation was performed using a simple Excel function that returned the number of days between the patent issuance and the filing of the litigation. Of particular importance, we note that the patents in our dataset may have been asserted in years other than the four that we have focused on, a limitation of the study design that prevents definitive conclusions. Of equal importance, we have not determined the priority filing date for the patents in our database, so it is likely that in at least some cases, a seemingly new patent actually has a much older priority filing date. However, our hope is that the observations from this set of data will shed some light on the question of whether the relative age of a patent makes a difference in terms of its likelihood to be asserted.

b. Patent Ownership Transfers

We wanted to gauge the robustness of the emerging patent monetization markets by determining how many times our patents had been transferred to new owners and how recently those transfers occurred prior to the filing of the litigation.

We examined each of the patents in the database to determine the number of recordals for the patent found in the PTO's assignment database, the number of records that represented a genuine change in control over the patent, and the date of the last transfer of ownership. An example of the methodology can be found in Appendix A.

The default rule of U.S. law is that a person who is named as an inventor on a patent application owns the patentable inventions that he or she creates. However, most corporations have procedures in place to circumvent this default legal rule. Employees, for example, typically sign agreements early in their employment that obligate them to transfer inventions to their employers. We were not interested in a pro forma transfer of rights from an individual to his or her employer. Rather, we were interested in tracking when an inventor obtains a patent and then later sells the patent to a third party. Thus, transfers involving pre-patent issuance transfers from employee to employer were ignored.

The PTO permits the recordation of information that does not comprise a meaningful transfer of rights for our purposes. These transfers are typically titled "Change of Name" and "Security Interest" – or words to that effect. For this reason, we tracked the number of total transfers and the number of transfers that represented a genuine change of ownership and control for the patent.

We were also interested in the “execution date” of the last transaction in which rights have been transferred. The PTO records two dates per transaction – the date that the ownership transfer document was executed (signed) and the date that it was recorded. On occasion, the date of recordation is years after the date of execution. Some patent owners prefer that their ownership of a given patent should be shielded from public view until they are ready to assert it against others. One could analogize at least some of this behavior to pirate ships of old who would wait until they had a target ship in their sights before hoisting the pirate flag.⁸⁴

In addition to determining real transfers of rights and the date of the last transfer, we also recorded the total number of recordation entries, which include a transfer from an employee to an employer and a company name change. An example of entries and transfers recorded can be found in Appendix A.

In some cases, there would be no formal recordal with the PTO for a patent infringement suit brought by an exclusive licensee. In addition, for a few patents, we noticed instances of co-ownership. Although it is possible for a patent to be owned by two separate parties, co-ownership is generally not a good idea, since one co-owner may grant licenses to third parties without consulting the other. We note that in order to become the sole owner of the patent, an entity typically acquires all of the rights from all other parties prior to engaging in litigation.

⁸⁴ For a comparison of modern monetization techniques to the historic practice from the mid-1800s of using private, third parties to attack another country’s merchant ships, see Tom Ewing, *Indirect Exploitation of Intellectual Property Rights By Corporations and Investors*, 4 HASTINGS SCI. & TECH. L.J. 1 (2012) and Tom Ewing, *Practical Considerations in the Indirect Deployment of Intellectual Property Rights By Corporations and Investors*, 4 HASTINGS SCI. & TECH. L.J. 109 (2012). Both articles coin the term “privateering” to describe the modern practice of using third parties to carry out one’s patent litigation activity.

We next calculated the average number of transfers across the years in our database and the average number of transfers for patents owned by various entity types.

We also calculated the proximity of the last patent transfer to a new owner compared with the date of the patent assertion. This information gave us some idea as to how recently patents were transferred prior to litigation. One limitation to this approach is that we do not know when the patents in our dataset were first asserted. In some cases the date of the last patent assignment was a date after the filing of a lawsuit in our dataset. Such a transfer may occur for a variety of reasons. For example, parties who have been sued for infringing a patent may settle their case by purchasing the patent that has been asserted against them. In those circumstances, the record would show a transfer after the litigation has begun.

We also wanted to gauge the robustness of the emerging patent monetization markets by determining how many times the patents had been transferred to new owners and how recently those transfers occurred prior to the filing of the litigation.

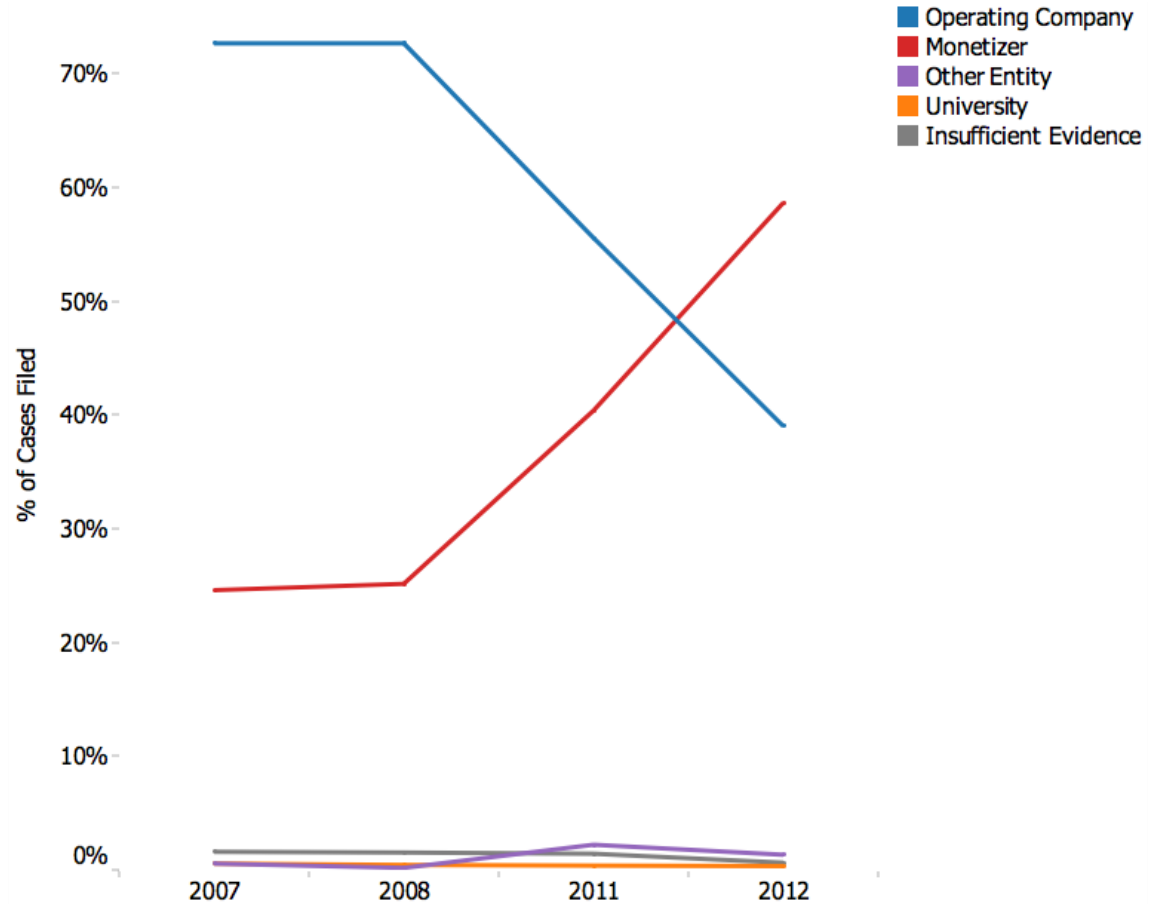
III. RESULTS

The data confirm that patent monetization entities are having a dramatic impact on U.S. patent litigation. Patent litigation filed by patent monetization entities has increased substantially in recent years. The increase can be seen both in terms of actual number of lawsuits filed and in the number of defendants sued by monetizers.

A. Number of Lawsuits

In 2007, monetizers filed only 24.6% of the patent infringement lawsuits. Monetizers filed 40.4% of the lawsuits in 2011. Most significantly, monetizers crossed into the majority in 2012, having filed 58.7% of patent infringement lawsuits.

Percentage of Patent Litigation Cases Filed Over Time: Aggregated Entities

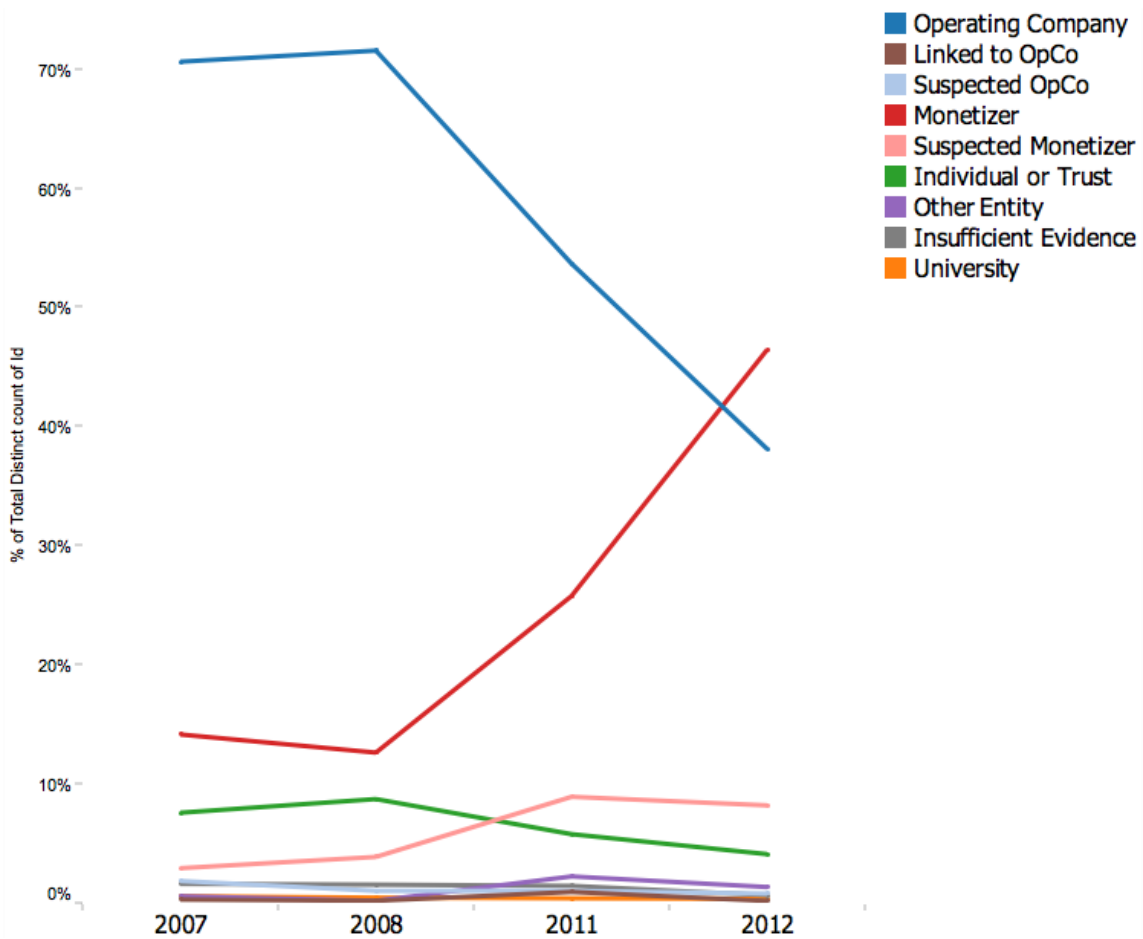


The results were remarkably consistent with the limited dataset we prepared for the GAO. In that study, looking at one hundred cases a year, we concluded that the percentage of patent lawsuits filed by monetizers had risen from 22% in 2007 to almost 40% in 2011. Looking at the full dataset of all cases in 2007 and 2011, the rise is from 24.6% to 40.4%. Again, the expanded study includes the year 2012, in which the percentage of patent lawsuits filed by monetizers rises further to 58.7%.

The percentages above reflect data aggregating certain categories together. In particular, we set a high bar for classifying entities as either operating companies or monetizers. Even with those classified as suspected monetizers or suspected operating companies, we still found ample secondary evidence of their proper categorization. As a

result, we believe that operating companies and monetizers should be aggregated with their suspected counterparts. Nevertheless, we include the disaggregated data for clarity and for the benefit of other researchers who may want to consider the data from different perspectives.

Percentage of Patent Litigation Cases Filed Over Time: Disaggregated Entities



In addition, based on the results we saw, individuals and trusts appear to function more like monetizers than operating companies. For example, in the original AIA 500 sample, the Sorensen Research and Development Trust Fund filed more patent infringement cases than any other entity in our sample. Although it is a trust rather than

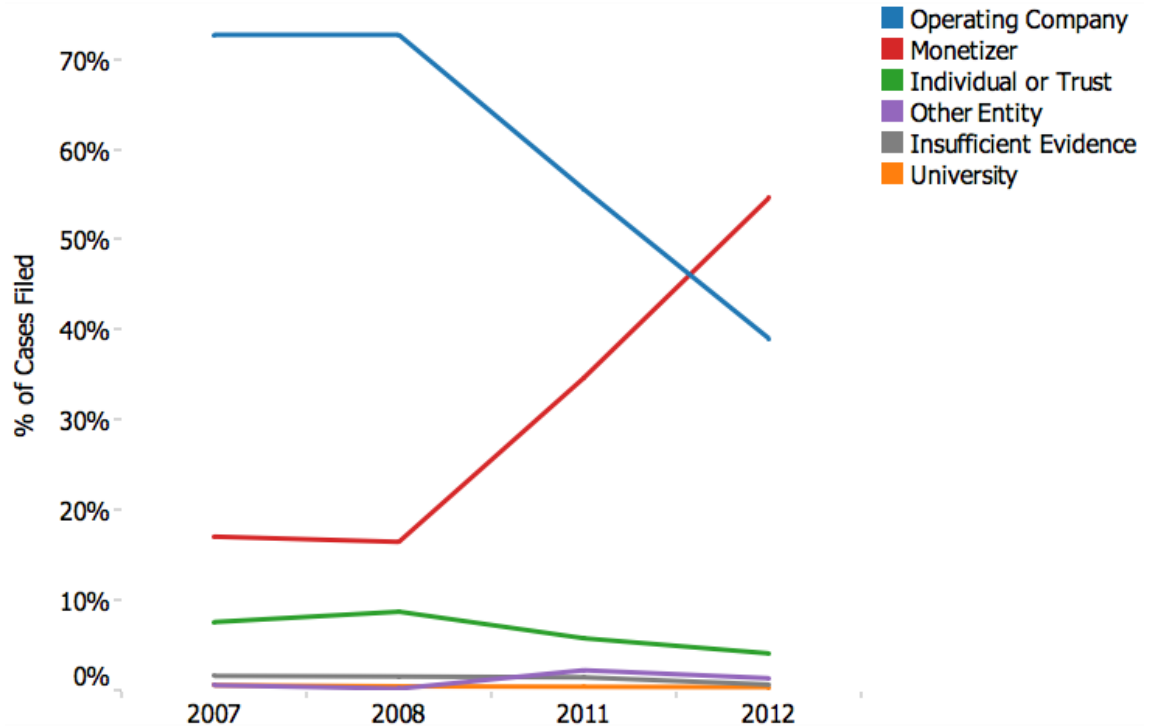
a corporation, Sorensen appears to make most of its money through patent monetization. Similarly, many of the individuals in the samples appeared to be inventors who had tried to operate companies and when they failed, switched to litigation as a way of monetizing their patents.

We have heard a variety of narratives used to describe the transformation of such inventors. On one end of the spectrum is the narrative in which an individual inventor tries to develop a product, faces overwhelming competition from a well-entrenched larger entity that appropriates the inventor's idea and refuses to pay a licensing fee. The inventor is left with no choice but to go after those who are using the idea. On the other end of the spectrum is the narrative in which an individual inventor, whose own product attempts have failed, has turned to extracting settlements from successful operating companies, regardless of whether the claim has any merit. A number of narratives could be developed in between as well. For the purposes of our study the narrative is irrelevant. We are only examining whether the entity filing the patent infringement lawsuit is an operating company or a monetizer at the time the lawsuit was filed.

We also note that individuals and trusts represent a relatively small number of those filing lawsuits in our database. Specifically, they accounted for fewer than 6% of the entities filing cases across the four years. Thus, we caution against focusing the discussion too heavily on the nature of individuals and trusts.⁸⁵ The following chart shows the aggregated trends with "Individual or Trust" as its own category:

⁸⁵ In addition, the data only represent those individuals or trusts who have brought lawsuits themselves. An individual or trust could have sold the patents to a monetizer, who then filed suit. In those circumstances, the data would under-represent the behavior of individual inventors.

Percentage of Patent Litigation Cases Filed Over Time: Individuals or Trusts



Although we included the aggregated data to provide a more accurate picture, the disaggregated data also show a significant rise in litigation by patent monetization entities. For the monetizers we could identify through either the party's self-classification or a statement in a verifiable court record—a highly stringent test—the number of lawsuits doubled between 2007 and 2012.

As with the original AIA 500 sample, universities accounted for a tiny portion of the entities that brought patent infringement lawsuits. Out of almost 13,000 lawsuits filed during the period, only fifty-three had universities as the first named plaintiff. Thus, universities accounted for less than half of 1% of the lawsuits filed. The percentage of lawsuits filed by universities remained reasonably steady across time, hovering at less than half of a percent for all of the years except one, when universities accounted for only 0.56% of first named plaintiffs. It is possible that universities might

exist as the second named plaintiff in some of the lawsuits. Nevertheless, universities do not seem to file many patent infringement lawsuits, a fact that has remained unchanged in more recent years. A chart of the disaggregated data is below.

Number of Cases Filed by Entity by Year

Year	Operating Company	Monetizer	Individual or Trust	Insufficient Evidence	Other Entity	University
2007	1,826	428	190	40	14	14
2008	1,661	376	199	35	4	10
2011	1,755	1,094	182	45	70	12
2012	1,966	2,750	206	32	67	17
Grand Total	7,208	4,648	777	152	155	53

We note one other number that stands out when looking at the raw number of cases filed by entities grouped together. The number of lawsuits filed by monetizers jumped dramatically from the early years (2007/2008) to the two most recent years (2011/2012). As will be described below, the jump is likely to reflect in part doctrinal changes in the America Invents Act. Nevertheless, the striking rise in numbers from the early years to the later years suggests that the America Invents Act cannot be entirely responsible for the leap. In particular, the number of lawsuits filed by monetizing entities, individuals and trusts almost quintupled from 2007 to 2012, rising from 618 to 2,956. Looking only at lawsuits filed by monetizers organized as individuals or trusts that number increased by almost six times from 2007 to 2012 rising from 428 to 2,750. We will further explore the effects of the America Invents Act below.⁸⁶

⁸⁶ See *infra* text accompanying notes 91-94.

B. Number of Defendants

Measuring the amount of litigation from patent monetization entities is complicated by the changes made by the America Invents Act. These changes were intended to make it more difficult for patent monetization entities to join a number of defendants into a single lawsuit. Teasing out the effects of these changes from the data, to the extent possible, requires looking at the number of defendants sued rather than simply looking at the number of lawsuits filed.

Specifically, prior to passage of the America Invents Act, certain jurisdictions allowed a patent holder to join defendants together in a single suit, on the grounds that deciding the scope of the patent provided a sufficient basis for joinder even if the acts of infringement were unrelated.⁸⁷ Patent holders responded by suing dozens of companies in a single lawsuit, frequently in the Eastern District of Texas, which had a reputation for generous juries and procedural rules hospitable to patent holders.⁸⁸ The America Invents Act disallowed this practice, requiring that in order to invoke joinder, alleged acts of infringement must arise out of the same occurrence or transaction and must involve questions of common fact.⁸⁹ This statutory change had the potential to make

⁸⁷ See, e.g., *MyMail, Ltd. v. Am. Online, Inc.*, 223 F.R.D. 455, 456–57 (E.D. Tex. 2004); see also Jared Bobrow, *The New World of Patent Litigation Under The America Invents Act*, THE METRO. CORP. COUNS. (Metro. Corp. Couns., Mountainside, N.J.), June 2012, at 15. For a detailed explanation of the America Invents Act changes related to joinder, see Jeruss et al., *supra* note 11, at 360, 378–381.

⁸⁸ Mark Liang, *The Aftermath of TS Tech: The End of Forum Shopping in Patent Litigation and Implications for Non-Practicing Entities*, 19 TEX. INTELL. PROP. L.J. 29, 43 (2010) (discussing the Eastern District of Texas’s attractiveness as a forum for patent suits due to the adoption of rules that “included accelerated timelines, broader discovery requirements, and severe sanctions for non-compliance”).

⁸⁹ 35 U.S.C. § 299(b) (Supp. V 2011) (“[A]ccused infringers may not be joined in one action as defendants or counterclaim defendants, or have their actions consolidated for trial, based solely on allegations that they each have infringed the patent or patents in suit.”); 157 CONG. REC. S5429 (daily ed. Sep. 8, 2011) (statement of Sen. Jon Kyl) (“This new section bars joinder of accused infringers as codefendants, or consolidation of their cases for trial, if the only common fact and transaction among the defendants is that they are alleged to have infringed the same patent. This provision effectively codifies current law as it has been applied everywhere outside of the Eastern District of Texas.”) (*citing* *Rudd v.*

litigation more expensive and difficult for patent holders, particularly for monetizers who could no longer roll large numbers of companies together into a single suit in the forum of their choice.⁹⁰

These legislative changes could have the effect of inflating the number of cases filed, without reflecting a true increase in the amount of litigation. For example, imagine a patent holder who could file a single lawsuit against ten defendants prior to the America Invents Act. After the America Invents Act, the patent holder would have to file ten separate lawsuits to proceed against the same number of parties. Thus, we had to account for the possibility that an increase in lawsuits might reflect, in whole or in part, a reshuffling of the same number of defendants into a larger number of cases.

To compensate for this possible effect, we examined the number of defendants sued in all years in addition to the number of lawsuits filed. The following table shows the number of defendants sued, disaggregated for each group by year:

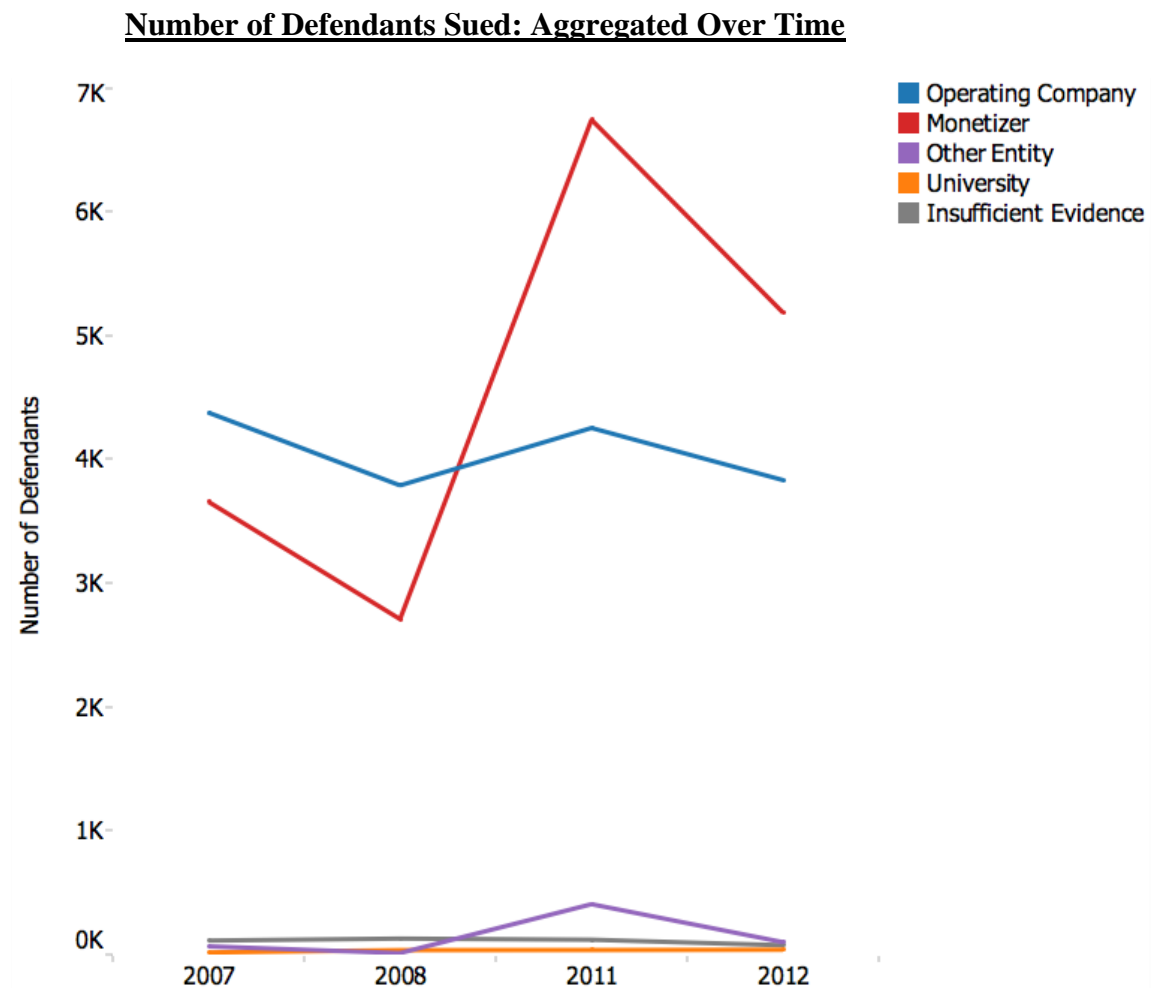
Number of Defendants Sued: Disaggregated Figures

Year	Operating Company	Monetizer	Individual or Trust	Insufficient Evidence	Other Entity	University
2007	4,377	2,648	1,009	113	66	17
2008	3,789	1,814	895	129	12	36
2011	4,253	6,244	498	120	407	37
2012	3,832	4,606	579	75	100	39

Lux Prods. Corp., No. 09-cv-6957, 2011 WL 148052 (N.D. Ill. January 12, 2011)); H.R. Rep. No. 112-98, pt. 1, at 54-55 (2011).

⁹⁰ See, e.g., Carl Charneski, *Impact of the AIA on Patent Litigation: Changes That May Affect Your Choice of Forum*, 4 LANDSLIDE 45, May/June 2012, available at http://www.brinkshofer.com/files/article_landslide_mayjune_2012_charneski.pdf.

The following graphic shows the number of defendants sued by monetizers as an aggregate over time:



With operating companies, the number of defendants sued across the years studied is remarkably stable, hovering around 4,000 in each of the years, including both the early and later years.⁹¹ However, the number of defendants sued by patent monetizing entities, individuals, and trusts has changed markedly across time. For example, monetizers sued approximately 75% more defendants in the later years on

⁹¹ We do note a slight drop in the number of defendants sued by operating companies in 2008, dropping to 3,789 that year as opposed to 4,377 in 2007.

average than in the earlier years. Similarly, the number of defendants sued by monetizers crosses the majority threshold in the later years. The fact that the number of defendants sued by monetizers in the later years has increased so far above the number of defendants sued by monetizers in the early years suggests that the rise in the number of lawsuits reflects an increase in total litigation activity rather than simply an increase in the number of cases filed.

Interestingly, the number of defendants sued by patent monetizing entities, trusts, and individuals in 2012 decreased from that in 2011. Colleen Chien has noted this trend in unpublished data as well.⁹² The number of defendants sued in 2012 is still quite high in comparison to the earlier years. Nevertheless, the drop between 2011 and 2012 is interesting, and we further explore that in the following section.

C. Considering the Effects of the America Invents Act

One fascinating aspect of the time period examined concerns the impact of changes brought about by the America Invents Act, which was signed into law on September 16, 2011. Rarely does one have the opportunity to observe, in detail, behavior both before and after a legislative change of this kind. Our dataset allowed that type of inquiry.

In particular, one narrative circulating in policy discussions concerns the possibility that the increase in activity by monetizers in recent years is an artifact of the changes in the America Invents Act.⁹³ In other words, perhaps there has been no real

⁹² See Chien, *supra* note 25, at 12 (using data provided by the patent monetizer RPX).

⁹³ For an academic study advancing this theory for the period of 2010-2012, see Cotropia, Kesan & Schwartz, *supra* note 46.

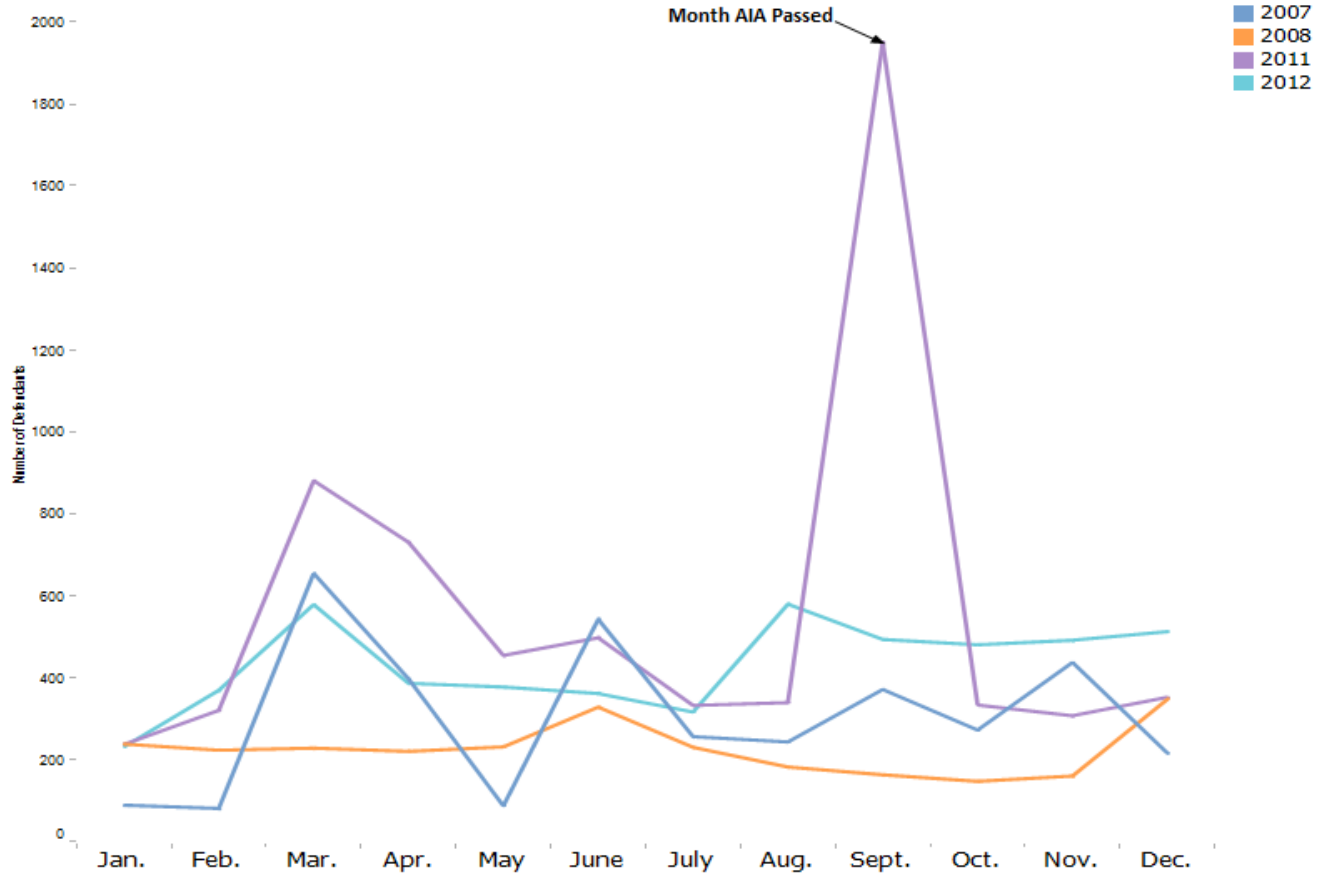
increase in monetizer activity. Rather, there has simply been a shift in the way the activity manifests itself, a change that has created a false impression.

To further consider this hypothesis, we broke down the data by month for each of the years in our study. Our key interest involved examining whether the amount of litigation activity had been inflated in the period before and after passage of the America Invents Act. We tracked all of the filings by month throughout all of the years examined in order to confirm that any spikes we saw around the month of filing were not simply related to spikes that occurred at that particular time of year under all circumstances. We will provide an overview of the results first, and then discuss the data in detail.

D. Overview Summary of Results

We considered the hypothesis that in response to the changes in joinder rules in the America Invents Act, monetizers filing new lawsuits engaged in the same amount of litigation activity and merely spread it over a larger number of lawsuits. Our data suggest that this hypothesis is inaccurate. The data also revealed other striking results. The key results are shown in the following graph:

Monetizer Defendants Sued, per Month



First, there is a dramatic spike in the number of defendants sued by monetizers in the month before the America Invents Act was signed into law. In other words, monetizers rushed to the courthouse to get their lawsuits filed before the Act became effective.

Operating companies also increased the number of defendants they sued that month, but only to a small extent. The month after passage of the Act, the number of defendants sued by monetizers returned to where it had been before, emphasizing the aberrational nature of that month. The spike also suggests that monetizers are sensitive

to legislative changes and provides an example of parties exploiting the system, rather than deploying the right.

The month-to-month data for the remainder of 2011 and all of 2012 suggest that the America Invents Act had some effect on reducing the numbers of defendants sued, although the numbers were still historically quite high. Even these behavioral changes appear to have been short-lived. By late 2012, the number of defendants sued by monetizers rose. Although much more time and information would be necessary to reach definitive conclusions, the data suggests that either the lure of monetization continues to increase overall or parties are finding ways to work around whatever discipline was imposed by the new rules.

Finally, we note that although the number of defendants sued by monetizers decreased between 2011 and 2012, the number of defendants in 2012 is still far above that in 2007. In short, the month-to-month data suggests that while the America Invents Act may have slowed the train somewhat for a time, it is still barreling down the tracks.

E. Number of Lawsuits Filed by Monetizers: Month-to-Month

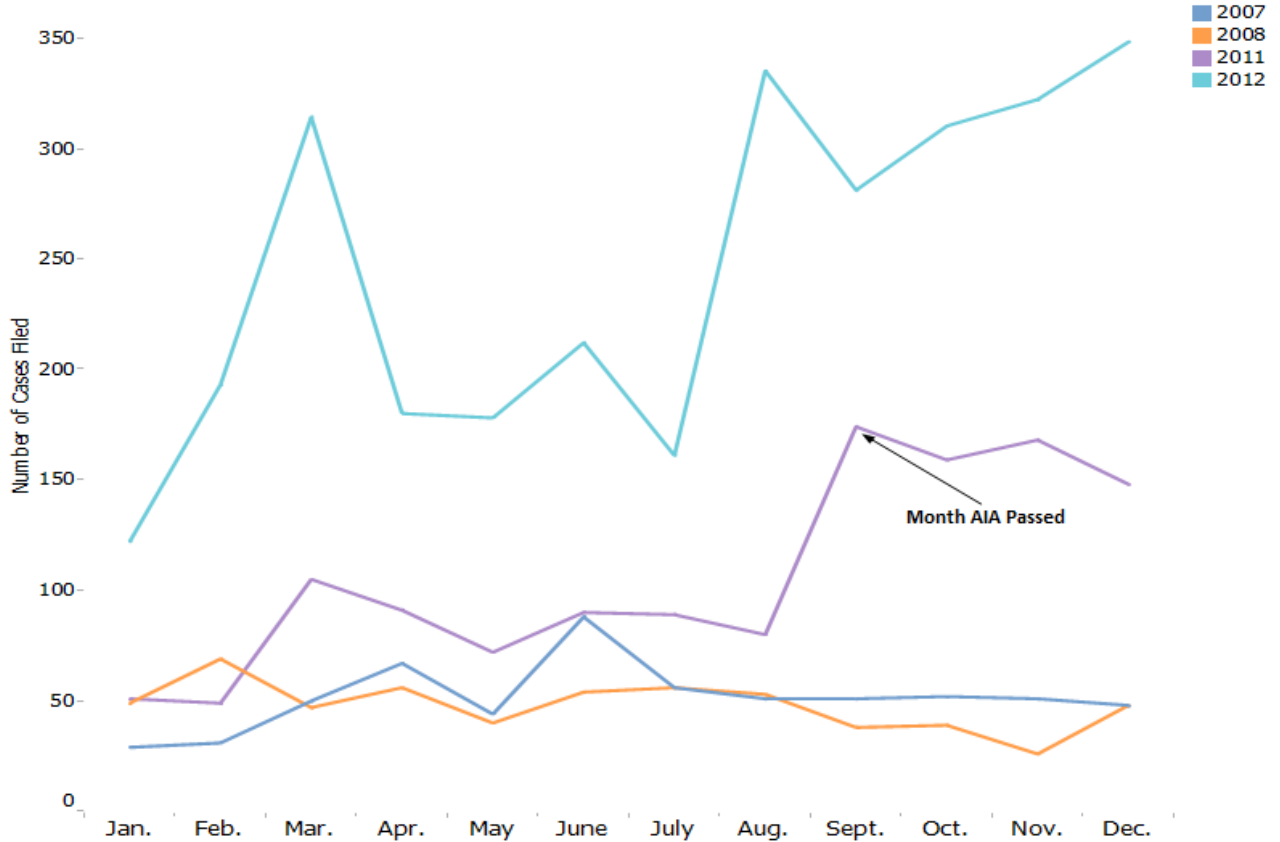
Having summarized key conclusions about the effects of the America Invents Act in the prior section, the following section will discuss the data in detail. The America Invents Act was signed into law on September 16, 2011. Looking at the month-to-month data, one can see a jump in the number of lawsuits filed by monetizers during the month in which the Act was signed into law. After that month, the number of lawsuits filed by monetizers leveled off for the remainder of the year, climbing again in 2012. Although there is some variability in the months throughout 2012, the number of lawsuits filed by monetizers in each month of 2012 is higher than the comparable month

of 2011. In addition, the number of lawsuits filed by monetizers in almost every month of 2011 and 2012 was higher than those filed in their analogous months in 2007 and 2008.

Of greatest interest, the number of cases filed by monetizers rises sharply in September of 2011, the month in which the America Invents Act was signed into law. This could suggest that monetizers rushed to get a number of cases in place before passage, with some of these cases simply being ones that would have been filed later on. The number of cases filed by monetizers rose again in 2012. This confirms the notion that the number of lawsuits continues to rise, at least from the perspective of the number of cases filed.

We note several variation points in the data that do not appear to relate to the hypotheses we are examining. For example, there are isolated, small spikes in lawsuit filings by monetizers in February 2008 and June 2007. We also note that in both 2011 and 2012, the data show spikes in the number of cases filed by monetizers in March and again in August/September, with a subsequent reduction the following month. These would benefit from additional research to understand the dynamics at work, and whether those dynamics interact in any way with the effects of the America Invents Act. We also note that our data analysis is not sufficiently granular to separate the month of September 2011 into lawsuits filed before passage of the America Invents Act on September 16 and lawsuits filed after its passage of the in that month. It is possible that such enhanced level of detail would further confirm the notion that lawsuits were accelerated and filed in anticipation of the America Invents Act's passage.

Monetizer Cases Filed per Month



F. Number of Defendants Sued by Monetizers: Month-to-Month

The month-to-month data are particularly important for examining the number of defendants sued to evaluate whether the rise in the number of lawsuits represents a true rise in litigation activity. As described above, we wanted to test the hypothesis that the rise in the number of lawsuits in 2012 was an artifact of changes brought about by the America Invents Act. In other words, is it true that in response to the changes in joinder rules in the America Invents Act, monetizers filing new lawsuits took the same amount of litigation activity and just spread it over a larger number of lawsuits? Our data suggest that this hypothesis is inaccurate and provide further interesting observations.

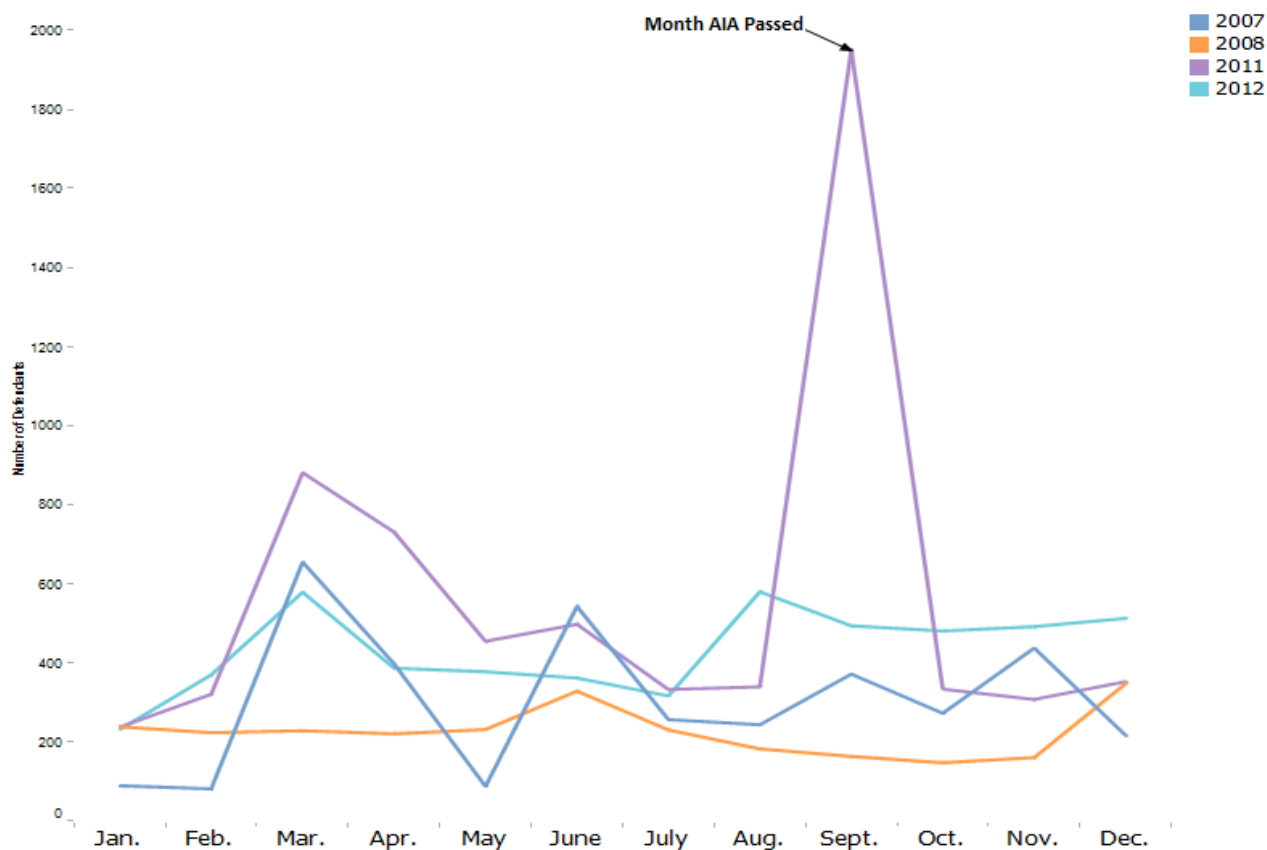
As background, recall that in the last section we saw a sharp rise in the number of lawsuits filed between the early years of 2007 and 2008 and the late years of 2011 and 2012. The rise in the number of lawsuits filed by monetizers from the early to the most recent time period is echoed by an overall rise in the number of defendants sued by monetizers from the earlier years to the latest years. That rise in the number of defendants sued by monetizers translated into a final percentage similar to the percentage of lawsuits filed by monetizers. Specifically, in 2012, monetizers filed 58.7% of the lawsuits and sued 56% of the defendants. In other words, by 2012, monetizers accounted for the majority of defendants sued as well as for the majority of lawsuits filed.

Although the number of defendants sued by monetizers in 2012 was quite high in comparison to the number of defendants sued in the early years, the overall number of defendants sued by monetizers in 2012 was lower than in 2011. Thus, sorting the data month by month allowed us to tease further insights from the data. We note that month-to-month data reflect, naturally, a smaller sample than aggregate annual data. As a result, any errors in the data could have a larger effect in a monthly context than they would in the context of aggregate annual data.

The data on the number of defendants sued per month by monetizers supports even more strongly the suggestion that monetizers filed lawsuits in anticipation of passage of the Act. Most striking, there is a dramatic spike in the number of defendants sued in September of 2011, the month in which the America Invents Act was signed into law. Roughly 2,000 defendants were sued in that month, in comparison to fewer than 400 defendants sued in each of the months before and after. This result strongly

suggests that monetizers rushed to file suits against a wide swath of defendants prior to the effective date of the Act.

Monetizer Defendants Sued per Month



The information is simply too complex, and the time frame is too short, to tease out the effects of the America Invents Act clearly from this dataset alone. However, one can still make tantalizing observations. For example, looking month-by-month at the first seven months of 2012 (and setting aside the dramatic spike in the month of passage of the Act), the number of defendants sued by monetizers in 2012 appears to stay below the number of defendants sued in the same months of 2011. In August, however, that number moves above the monthly number for 2011 and remains above for each month in the rest of the year.

One could hypothesize that the legislative changes in the America Invents Act

were partially successful in reducing the amount of litigation by patent monetizers.⁹⁴

Although the number remains quite high, perhaps some monetizers chose to focus only on key defendants, rather than sweeping quite so many companies in so broadly, at least in terms of lawsuits. Of course, there is a potential for interplay between the lawsuits filed and other non-lawsuit assertion activity. A party could choose to file against particular defendants to raise the credibility of non-lawsuit threats against others. Thus, it is possible that some of the activity has simply shifted to non-litigation assertion activity, an effect that we would be unable to capture.

Over time, however, that effect seems to be waning. The return to a rise in the number of defendants sued in the second half of 2012 could suggest either that the lure of monetization continues to attract more litigation activity or that that parties have found ways to work around whatever discipline may have been imposed by the changes in the rules.

Anecdotal evidence suggests that workarounds provide at least part of the explanation. Press reports suggest that judges in the Eastern District of Texas have responded to the new joinder rules by allowing cases brought by a single plaintiff against multiple defendants to be consolidated for claim construction and discovery, despite the fact that the trials will be separate.⁹⁵ Additional time and information will be needed to see if this trend continues into 2013 and beyond.

There are other variations in the monthly patterns of the number of defendants sued across time. For example, the year 2007 shows particular variability across the

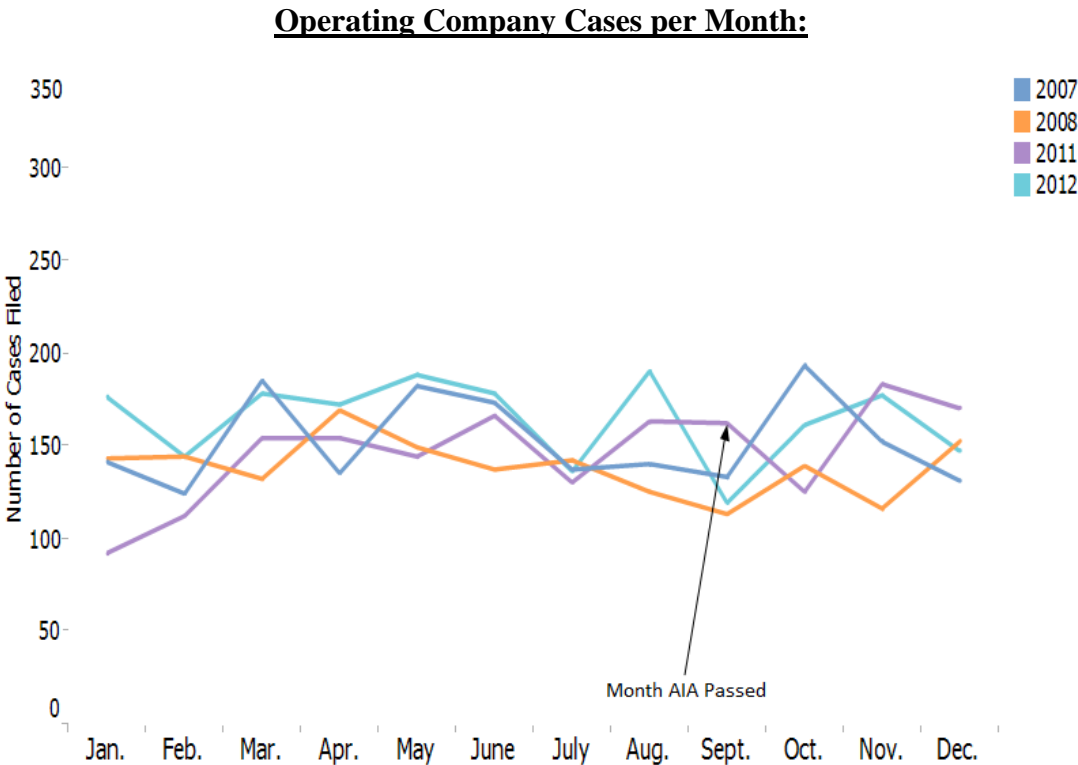
⁹⁴ See Chien, *supra* note 25.

⁹⁵ See Lisa Shuchman, *Study: Eastern District of Texas Reclaims Top Spot for New Patent Suit Filings*, THE RECORDER, Jan. 15, 2013, available at LEXIS.

months, and three of the four years studied show a spike in March. Our analysis and hypotheses do not address potential explanations for these variations, and it would be interesting to try to understand these patterns. For our purposes, key conclusions from the monthly data are the following: A dramatic spike in the number of defendants sued by monetizers in September of 2011 supports the theory that monetizers increased their litigation activity in advance of passage of the Act. In addition, as shown by the aggregated numbers of both lawsuits and defendants, we see a dramatic and continuing rise in litigation activity by monetizers across the years studied.

G. Cases Filed by Operating Companies: Month-to-Month

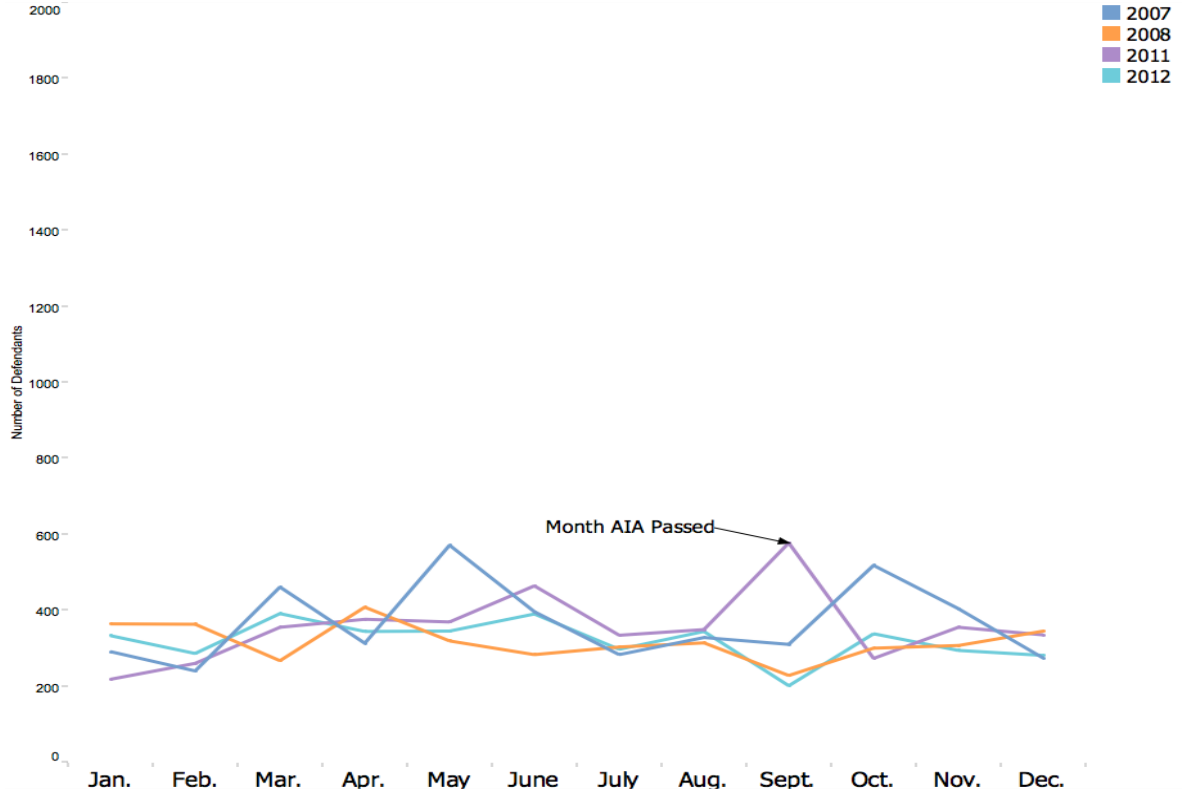
We also examined by month the litigation activity of operating companies in relation to passage of the America Invents Act. The data on number of lawsuits filed by operating companies were not particularly illuminating.



H. Defendants Sued by Operating Companies: Month-to-Month

While the data on lawsuits filed by operating companies per month is not particularly illuminating, the data on defendants sued by operating companies is more revealing. Looking at the number of defendants sued by operating companies month to month, there is a clear jump in September 2011, the month in which the America Invents Act was signed into law. The spike is not nearly as large or dramatic as in the case of the number of defendants sued by monetizers, nor does it vary as remarkably from prior year filing patterns. Nevertheless, the spike could suggest that operating companies, as well as monetizers, may have responded to the anticipated passage of the America Invents Act by filing against a number of defendants immediately prior to the effective date of the Act. However, the data are unclear.

Defendants Sued by Operating Companies per Month



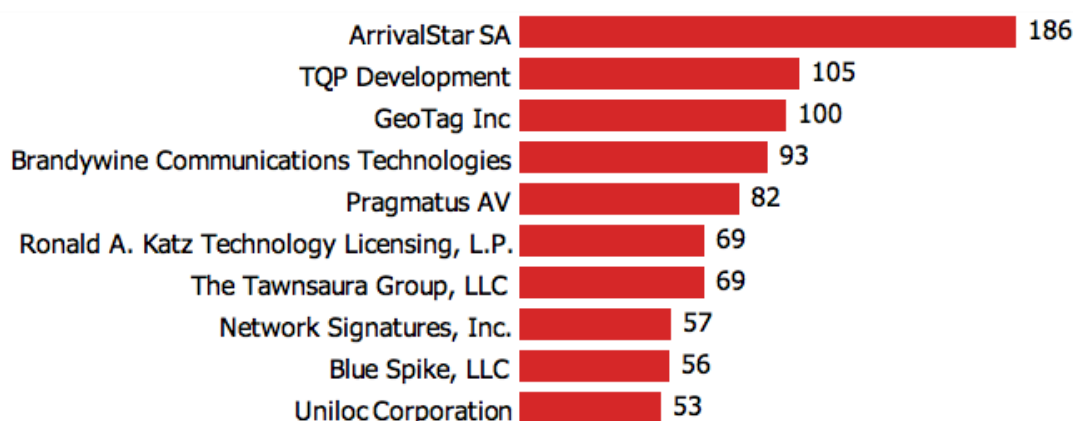
In short, breaking down the information month-to-month does not support the hypothesis that the increase in the number of cases filed is an artifact of changes in the America Invents Act. Rather, from the monthly perspective, we can see the dramatic and continuing rise in litigation activity by patent monetizers. Thus, the month-to-month data support what we are seeing in the aggregated data—that there is a clear increase in the litigation activity by monetizers—with a positive but fluctuating trend across time. The most important additional information provided by the monthly data, however, is the spike in the number of defendants sued by monetizers immediately prior to passage of the America Invents Act, as well as the climb in the number of defendants sued by monetizers in the latter part of 2012. This suggests that monetizers may be sensitive to legislative changes, and it provides a demonstration of the extent to

which monetizers are willing to game the system. Finally, the month-to-month data suggest that any disciplining effect of the change in joinder rules from the America Invents Act is already waning.

I. Entities with Most Cases Filed

Once again, of the ten parties who filed the greatest number of lawsuits during the period studied, all ten were monetizers or suspected monetizers.⁹⁶

Filers in Sample, by Number of Lawsuits Filed



We note that some well-known patent monetization entities appear to sue in the names of their subsidiaries, rather than in their own names. We did not aggregate subsidiaries in that manner in identifying the parties who filed most frequently. If one were to aggregate subsidiaries to the parent in that manner, other patent monetization entities most likely would appear in this top ten list as well. It is possible there are

⁹⁶ In an earlier draft of the study, we noted that Brandywine, one of the top ten most frequent filers, behaved in a manner analogous to a patent monetization entity. However, we were unable to confirm the classification. Earlier confusion stemmed, in part, from the fact that doing an Internet search for the precise name of the company filing the lawsuits led to the website of an operating company with an ever-so-slightly different name. Eventually, we were able to confirm that the two companies are different and find sufficient evidence under our rubric to place Brandywine in the category of suspected patent monetization entity.

operating companies that also file numerous lawsuits in the names of subsidiaries. We are not aware of any examples of this, but if it were true, our methodology would not reflect that.

Finally, as with the original AIA 500 dataset, universities were almost invisible. Universities accounted for less than one-half of one percent of the litigations filed, making up only 43 of the 12,993 entities who filed lawsuits during the period. Moreover, the percentage of lawsuits filed by universities remained reasonably steady across time, hovering at less than half of a percent for each of the years. It is possible that universities participated in some lawsuits as the second named plaintiff. However, universities do not seem to file many patent infringement lawsuits across time, a fact that has remained unchanged in recent years.

J. Case Outcomes

The following section describes the case outcomes that we observed in the data. Given that most patent cases settle, the datasets related to outcomes other than settlement, as well as the data related to timing of settlement, are too small to provide statistically significant results. Thus, we offer the following as observations only, and note that they may provide interesting avenues for further research.

The vast majority of patent lawsuits settle, regardless of whether they are initiated by operating companies, patent monetization entities, or individuals and trusts. The percentage of patent suits that settle when operating companies bring suit is slightly lower than when patent monetization entities or individuals and trusts sue, but all are quite high. Specifically, 72% of patent lawsuits brought by operating companies settle,

while 74% settle when monetization entities bring suit and 76% settle when brought by monetizing individuals and trusts.

The following table shows all case outcomes in our set:

All Case Outcomes	
Likely Settlement	6,200
Case is Ongoing	4,483
Interdistrict Transfer	506
Consolidation	468
Procedural - Dismissal	371
Procedural - Stay	293
Claimant Favored in Consent Judgment	283
Claim Defendant Win on Summary Judgment	154
Claimant Win on Default Judgment	89
Claimant Win at Trial	54
Claim Defendant Win at Trial	41
Claim Defendant Favored in Consent Judgment	31
Claimant Win on Summary Judgment	11
Claim Defendant Win on JMOL	5
Claimant Win on JMOL	2
Claim Defendant Win - Judgment on the Pleadings	1
Procedural - Severance	1

As with the prior AIA 500 sample set, the data suggest that patent monetizers rarely proceed to trial, or even to a summary judgment decision. When they do proceed to the summary judgment stage, monetizers win even more rarely. Out of 165 cases decided at summary judgment, we did not find a single one in which a monetizing entity, individual or trust bringing the lawsuit won. We found only eleven cases decided on summary judgment in which the claimant won.

Out of the ninety-five cases with a judgment at trial outcome, there were only thirteen cases in which a plaintiff patent monetization entity won the case. There were only five cases in which a monetizing individual or trust plaintiff won the case, resulting in a total of eighteen wins for monetizing entities, individuals and trusts combined.

When operating company plaintiffs proceeded to trial judgment, a claimant won forty times. The raw numbers themselves, however, differ from the percentages. Given that monetizing entities, individuals, and trusts rarely proceed, the percentage at which they prevail is actually higher than the percentage at which operating companies prevail at trial. Our dataset also shows a few more operating companies proceeding to trial or summary judgment. Once again, however, we caution strongly that the numbers are too small to draw any conclusion.

The following table shows outcomes as a percentage of all entity cases, excluding ongoing cases, for operating companies, monetizing entities, and individuals and trusts:

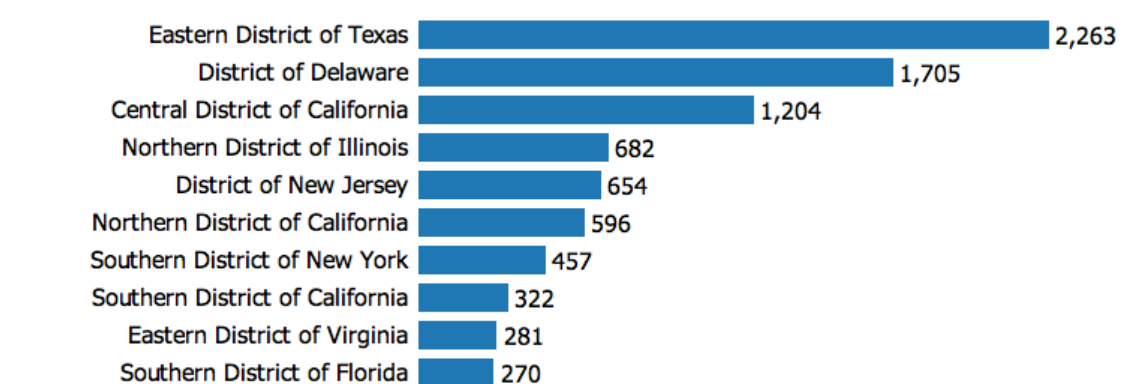
All Case Outcomes	Operating Company	Monetizer	Individual or Trust
Likely Settlement	71.94%	74.44%	75.94%
Interdistrict Transfer	5.29%	7.43%	5.12%
Consolidation	5.44%	6.80%	0.68%
Procedural - Dismissal	4.29%	3.20%	9.73%
Procedural - Stay	3.19%	4.19%	1.71%
Claimant Win on Default Judgment	1.27%	0.54%	1.37%
Claim Defendant Win - Judgment on the Pleadings	0.02%		
Claimant Favored in Consent Judgment	5.10%	0.33%	0.68%
Claim Defendant Favored in Consent Judgment	0.32%	0.46%	0.17%
Claimant Win on Summary Judgment	0.19%		
Claim Defendant Win on Summary Judgment	1.59%	1.87%	3.07%
Claimant Win at Trial	0.76%	0.33%	0.85%
Claim Defendant Win at Trial	0.57%	0.29%	0.51%
Claim Defendant Win on JMOL	0.04%	0.04%	0.17%
Claimant Win on JMOL	0.02%	0.04%	
Procedural - Severance		0.04%	

We also note that the case outcome descriptions explained above do not separate out the earlier two years from the later two years. This further limits their usefulness, particularly if trends are changing across time. Given the time it takes for a patent lawsuit to reach a conclusion, however, it is likely to be too soon to glean any useful information about the outcomes of patent lawsuits filed in the last year or two.

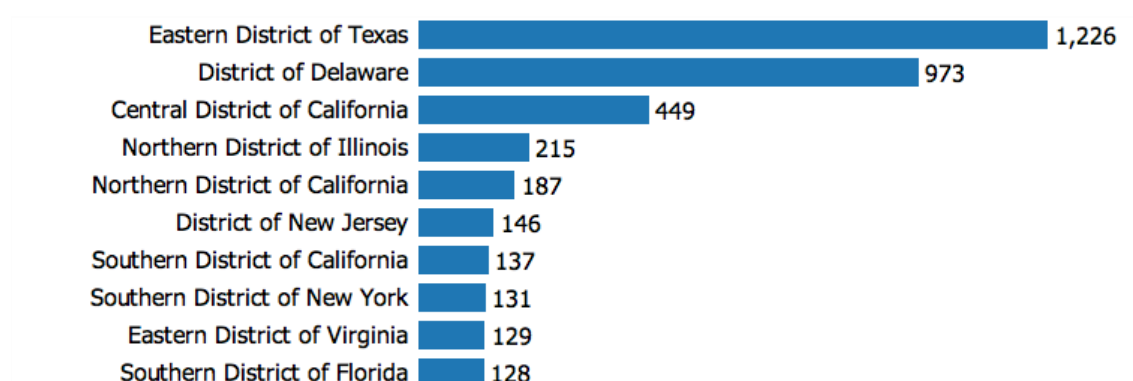
K. Location of Filing

We also collected data on the jurisdictions in which patent holders choose to file lawsuits most frequently.

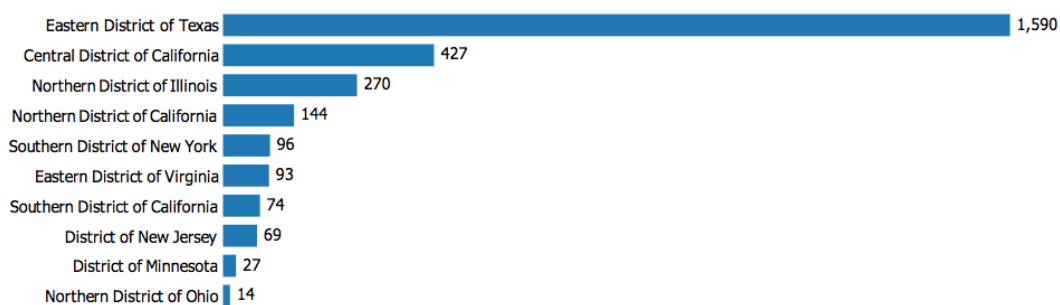
Top Districts – All Years



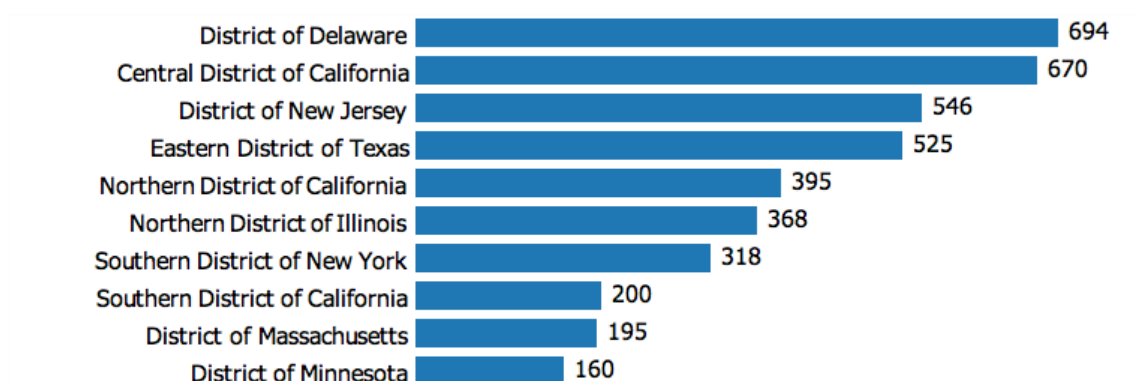
Top Districts – 2012



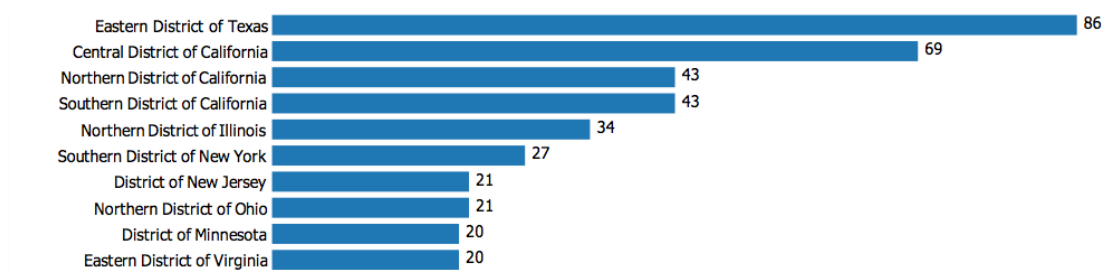
Top Districts – Patent Monetization Entities



Top Districts – Operating Companies



Top Districts – Individuals/Trusts



Across all years of the study, the Eastern District of Texas remained the favorite choice for filing a patent infringement lawsuit by any party—monetizer or operating company. However, it was the fourth most frequent location for operating companies across all years, and the third most frequent for operating companies in 2012. In contrast, the Eastern District of Texas was by far the most frequent filing jurisdiction for monetizers across time, and in 2012.

It is particularly interesting to note that the Eastern District of Texas remained by far the most popular choice for monetizers in 2012. The changes in the joinder rules from the America Invents Act were specifically aimed at the Eastern District of Texas, and one might have expected the district to lose its luster. The continued popularity of the locale could suggest either: 1) other characteristics of the Eastern District of Texas remain a powerful draw for patent litigation, particularly among monetizers, or 2) to the extent that the America Invents Act operated as a deterrent, monetizers have found effective ways to work around the provisions to their satisfaction.

Other top choices for both operating companies and monetizers include Delaware, the Central, Northern and Southern districts of California, and Florida. The Eastern District of Virginia appears in the top ten list for monetizers, both in 2012 and across time, but not for operating companies. However, the numbers are far smaller than for jurisdictions such as the Eastern District of Texas and Delaware.⁹⁷

L. Public Notice of Patents Asserted in Litigation

For the newer patents in our dataset, we wanted to see the extent to which the PTO informed the public about patent lawsuits. 35 USC Sec. 290⁹⁸ and 15 USC Sec. 1116 require that the trial courts report litigated patents to the PTO. The goal of this task was to determine the number of litigated patents that the PTO has reported to the

⁹⁷ For additional discussion of the potential significance of filing clusters in various locations, see Jeruss et al., *supra* note 11, at 383-385.

⁹⁸ 35 U.S.C. § 290 (2006) (“The clerks of the courts of the United States, within one month after the filing of an action under this title, shall give notice thereof in writing to the Director, setting forth so far as known the names and addresses of the parties, name of the inventor, and the designating number of the patent upon which the action has been brought. If any other patent is subsequently included in the action he shall give like notice thereof. Within one month after the decision is rendered or a judgment issued the clerk of the court shall give notice thereof to the Director. The Director shall, on receipt of such notices, enter the same in the file of such patent.”).

public as being litigated.

Of the roughly 14,000 unique patents in our dataset, we found that approximately 6,600 of these patents had online file wrappers.⁹⁹ For this set of patents, approximately 4,300 (or 65%) contained a notice of patent litigation while approximately 2,300 (or 35%) had no mention of a patent lawsuit in their file history.

A lack of notice about litigated patents puts companies, especially small ones, at a disadvantage because it means they cannot easily tell if a patent has been litigated. Information about prior assertions, in both the litigation and pre-litigation stages, can also be important for understanding the territory the patent holder is claiming. Although the patent itself contains claim language, that language may be notoriously difficult to interpret and particularly difficult to apply to the products and technologies that inevitably arise in the years after the patent has been granted.¹⁰⁰ Information about the breadth that the patent holder is attempting to claim can be tremendously helpful for companies trying to determine if their products might infringe, and the PTO's main website is the best publicly available source of information.

This information might be tracked in certain subscription databases, but not everyone has the money or sophistication to subscribe to them. Although there is also a

⁹⁹ Every U.S. patent has a file wrapper that comprises all the correspondence between the PTO and the patent applicant, including all the correspondence during prosecution of the patent application. Reviewing the file wrapper allows one to review items such as the claims as originally filed, the examiner's prior art rejections of those claims, and the applicant's response to the office action. Beginning in the early 2000s, the PTO began experimenting with online file wrappers, which contain all the information found in the paper file wrapper and is available online through the PAIR database in a series of indexed PDF files. These file histories are instantly accessible over the web and do not need to be ordered as paper copies from the PTO. By the mid-2000s, the PTO had decided to give every new patent application an online file wrapper. As mentioned, patents not having online file wrappers contain the same information as patents having online file wrappers, but such patents are difficult and often expensive to obtain. At some point in the future, all active U.S. patents will have online file wrappers.

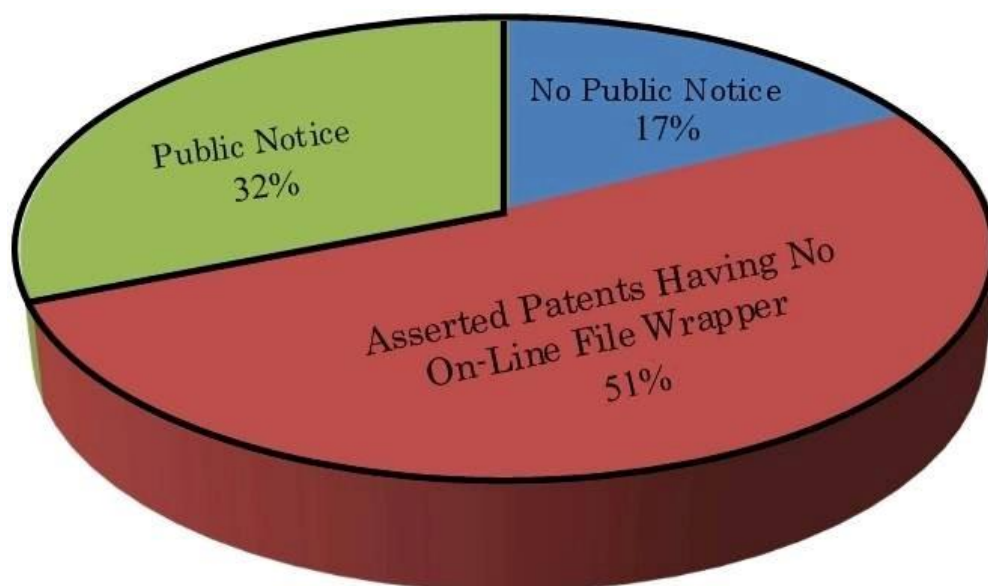
¹⁰⁰ See, e.g., FELDMAN, *infra* note 103, at 9-75.

lesser known PTO database that appears to be related to freedom of information transparency, this database seems to suffer from problems similar to the ones encountered in the main PTO database.¹⁰¹ While the main database only tracks litigations for patents having online file wrappers, the freedom of information database includes results for patents not having online file wrapper. However, we discovered that this database was missing about the same percentage of patents as was missing for the patents having online file wrappers – about 30 percent. Thus, the freedom of information database improves upon the main database by including data for patents not having online file wrappers, but it still misses almost one-third of the litigations.

If we combine the number of asserted patents in our study that do not have online file wrappers (approximately 7,000 patents) with the online file wrappers that have no notice of a litigation (approximately 2,300 patents), we find that about 68% (51% and 17%, respectively) of the patent database files for the patents in our dataset provide no notice in the PTO's main database that the patent has been litigated. Only about 32% have an indication of litigation.

¹⁰¹ In 2010, the PTO created a Freedom of Information Act website based on an Executive Order from President Obama. The website also provides information about litigated patents. See <http://e-foia.uspto.gov/Foia/NOSReadingRoom.jsp>. It appears to be less well-known among practitioners than the main PTO database, and we are grateful to Dennis Crouch for directing us to it. Initial investigations indicate that this database provides information for the patents not having online file wrappers with roughly the same degree of accuracy as the patents having online file wrappers, *e.g.*, that cases are missed.

Public Notice of Patent Litigations Available in USPTO PAIR Database across All Study Years



It appears that the PTO and court clerks may have paid more attention to this public notice issue in recent years. For 2007, only 51% of the litigated patents having online file wrappers contain an indication of a patent litigation. For 2007 as a whole, only 17% of litigated patents have an indication that they have been litigated. For 2012, 65% of the litigated patents having online file wrappers contain an indication of a patent litigation. For 2012 as a whole, 42% of litigated patents have an indication that they have been litigated.

We believe there are two primary reasons why litigated patents may not have been included in their respective online file wrappers. One reason is that court clerks might not have reported such patents to the PTO. We suspect this may arise most often in situations where a patent is included as a counterclaim in a lawsuit or added to an amended complaint. Our hypothesis is that the set of initially asserted patents are much more likely to be represented in an online file wrapper, and we found some examples in

which this occurred. A second reason is that the court clerks might have reported litigated patents to the PTO, but the office may not have added the notice to the online file wrapper. We also found examples of where this occurred. However, we do not know which explanation fits the greatest number of cases.

M. A Market for Pre-Litigation and Post-Litigation Patent Transfers

As described above, we examined the transfer history of the patents asserted in our dataset because we wanted to know how many of them were asserted by their original owner. We found that 6,095 patents had been transferred to someone other than their original owner, 5,560 patents were still owned by their original owner, and 2,139 patents had assignment data that was not available.

Thus, 52% of the asserted patents were transferred to another party at some time after the patent's issuance, while only 47% of the patents were still identified as being held by their original owner. In conducting our analysis, we excluded transfers from inventors to their employers, so these statistics reflect genuine transfers of ownership. Of course, in a few situations, the transfers may involve transfers to parties related to the original owner rather than to a completely unrelated entity, in a way that we were unable to detect.¹⁰²

For the patents that had been transferred to other parties, we looked at the date of last transfer in comparison to the lawsuit filing date. We discovered that for approximately 1,500 of the slightly more than 6,000 patents (about 25%) in our set, transfers were recorded after the litigation filing date. We suspect that in some of these

¹⁰² We excluded from these transfers recordings that were to obvious subsidiaries of the previous owner. However, in a few situations the new owner might have had a non-apparent relationship with the previous owner.

cases, the defendant may have purchased the patent as part of a settlement agreement. In other cases, it is possible that the litigation made the patent more commercially attractive, which prompted someone to buy the patent.

In terms of stealth, we found that some 43 patents had recorded transaction dates that matched the litigation filing date. Another 73 patents had recorded transaction dates within one day of the litigation filing date. We chose the date of litigation and one day prior to filing as representative indicators of last-minute recording of transfer. It is possible that the data show similar transfers in the month or two prior to filing.

Overall, the mean number of days between the last recorded transfer and the onset of litigation was 1,237.5 days or about 3.25 years for those patents transferred prior to litigation. Some of the transferred patents had been sold to a new party many years before the patent litigation was filed. For this reason, the standard deviation was 1,422.54 days. The patents sold subsequent to the lawsuit filing were typically sold long after litigation began. The mean for these transfers was 1,398.98 days with a standard deviation of 555.3 days.

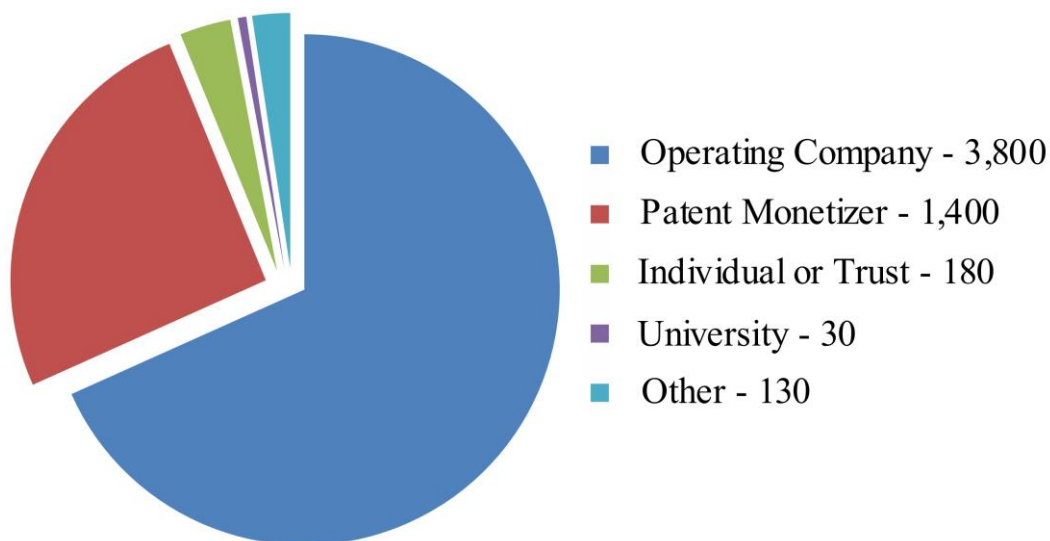
In terms of the frequency of transfers, of the patents that had a recorded transfer, these patents had been conveyed on average nearly twice (1.85 times with a standard deviation of 1.25). These patents had a mean number of total conveyances of 4.024 transfers with a standard deviation of 3.127 transfers and a median of three transfers. However, the data showed that most patents had been infrequently transferred with a much smaller handful of patents being traded like hot potatoes. One patent, in particular, was traded as many as eighteen times. In short, it is important to note that the overall numbers are lifted by a small set of frequently traded patents.

The data shows that if a patent asserted in litigation is transferred once, it is likely to be transferred again. This could be a further indication of the development of an active trading market providing arbitrage opportunities for certain patents.

We decided to examine the plaintiffs associated with the over 5,500 patents that had no recorded transfers. As suspected, this group was also heavily dominated by operating companies, with patent monetizers comprising the second largest group. We were surprised that the patent monetizers owned about 1,100 of the non-transferred patents. We suspect that further analysis may show that many of these patents have been transferred to the patent monetizers by virtue of an unrecorded sale or exclusive license. If so, this would support other evidence that the current patent recording system does not provide a complete picture of patent ownership or the real parties in interest. An alternative explanation could be the “failed inventor scenario,” which we are hearing about more frequently. Specifically, it is much easier to get a patent than to develop a successful product. In fact, the transition is described in startup lingo as “the valley of death” because so few are able to cross it successfully.¹⁰³ Translating an idea, even a patented one, into a successful product generally requires additional work and further research to refine the idea, in addition to huge amounts of capital. An idea must be translated into something that is affordable, can be mass-produced and for which customers exist. In the new frenzy for monetization, original inventors who are unable to develop any product from their patents, reportedly are turning to monetization to create a revenue stream.

¹⁰³ For a more detailed description of the difficulty of creating a successful product from a patented idea, see ROBIN FELDMAN, RETHINKING PATENT LAW 55-56 (Harvard 2012).

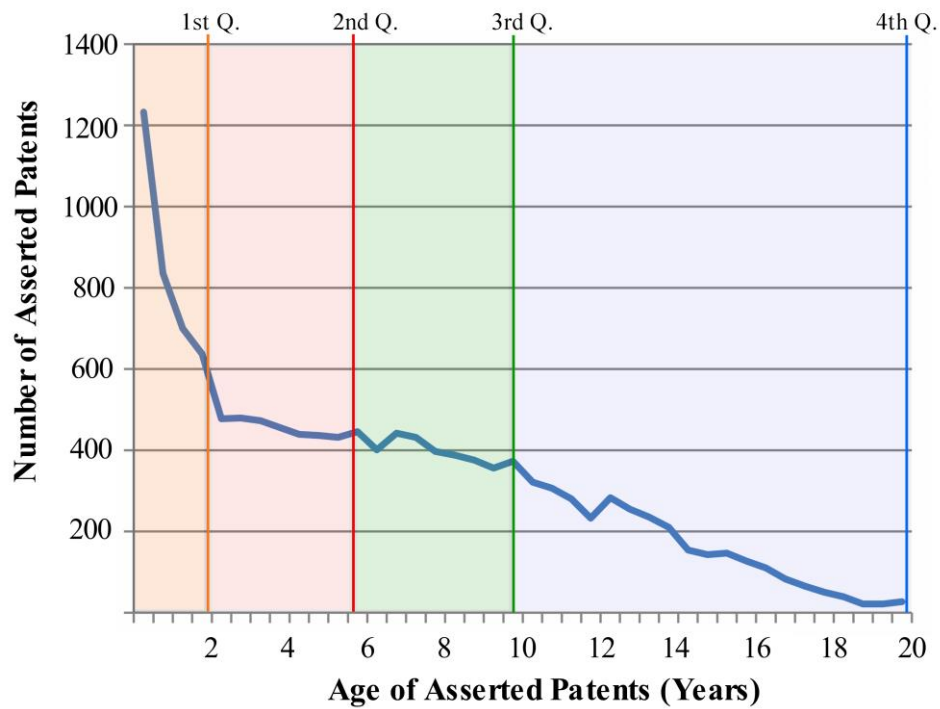
Entities Associated with Non-Transferred Patents



N. Age of Litigated Patents

We examined the age of the asserted patents at the time of their assertion. One important limitation on our analysis is that the patents in our study could have been litigated in years other than our four study years. The age of the patents in our database at the time of their assertion in litigation was a little over six years with a standard deviation of approximately five years. The age distribution of asserted patents showed a consistent decay from patent issuance. The newest patents were the ones most frequently asserted and the oldest patents were the least.

Age Distribution of Asserted Patents



The first quartile of asserted patents ends at patents that are barely two years old.

The second quartile of asserted patents ends at patents that are not yet six years old, and the third quartile of patents ends at patents that are less than ten years old.

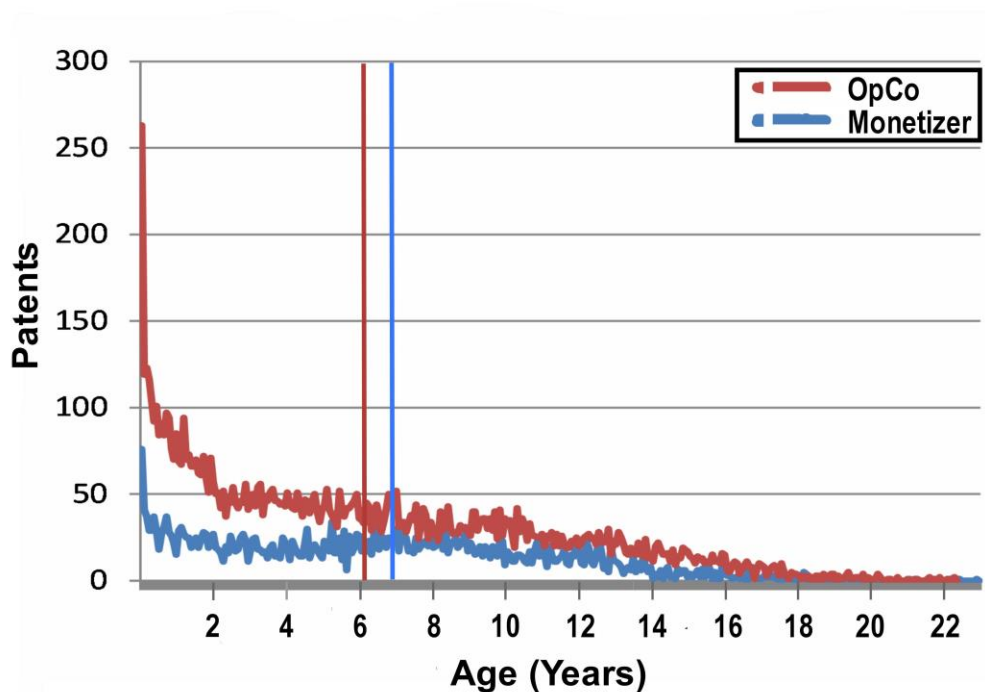
Younger patents were so heavily asserted that 144 patents were litigated on the day of their issuance. Another 75 patents were litigated within the first week of their issuance. The largest group of asserted patents was composed of those asserted within their first six months of issuance (1,232 patents), and the second largest group comprised of patents asserted between six and twelve months of age (835 patents).

This age distribution could be an indication that parties are increasingly filing for patents primarily as a defense of their own cutting edge products or as an assertion against that of a third party. While patent monetizers are filing the majority of patent

infringement cases, operating companies assert significantly more patents than patent monetizers. Thus, the age distribution data reflects the behavior of the operating companies more than the behavior of the patent monetizers. In terms of defending a marketed product against infringement by competitors, it should seem understandable that newer patents likely protect newer products.

Since we hypothesized that operating companies might assert more new patents than patent monetization entities, we analyzed the age of the asserted patents by plaintiff type. The analysis provided some support for this hypothesis, though the difference is small. The mean age for operating company patents was 6.1 years, and the mean age for monetizer patents was 6.7 years.

Age Distribution of Patents Asserted by Operating Companies and Monetizers



As we noted in the literature review, Brian Love’s recent study also looked at the age of patents at the time of assertion, although considering a different angle of the question. Love examined a sample of 472 patents issued between 1993 and 1994 and found a comparatively high level of patent lawsuit activity by NPEs—the terminology that Love uses—in the final three years of the patent term.¹⁰⁴ In other words, when lawsuits *were* filed on old patents, those lawsuits were disproportionately filed by NPEs.

Although Love looked from a per suit and a per defendant basis, rather than a per patent basis, his data also generally showed a steep decay for operating companies by age at the time of enforcement and a much flatter distribution for NPE patents.¹⁰⁵

It is possible that the late term rise in activity by NPEs that Love observed may relate, at least in part, to the historic timing of the patents Love studied. Love’s analysis examined litigation across the patents’ lifetimes from 1993 to 2011. In particular, the last three years of the term of some of the patents in Love’s study correspond to the dramatic increase in litigation by monetizers that we have documented here.¹⁰⁶ Thus, some of the increase in litigation activity by monetizers that Love observed during the final nine years of the patent term may relate to the general increase in patent litigation attributable to NPEs that has occurred during those years, a possibility that Love identifies in the article.¹⁰⁷ Similarly, Michael Risch’s study of ten heavily litigious

¹⁰⁴ See Love, *supra* note 27, at 1312 (finding that NPEs account for more than two-thirds of suits and over 80% of infringement claims litigated in the final three years of the patent term).

¹⁰⁵ See *id.* at 1332 (figure 2).

¹⁰⁶ In general, patents expire twenty years from the time the patent application is filed. Short patent term extensions are available in certain circumstances. According to the author, the bulk of the patents in Love’s dataset expired in 2010 and 2011, with some extending into 2012. See email from Brian Love (April 23, 2013) (on file with authors). Thus, the last three years of patent life for some of these patents would have occurred between A & B, the period in which patent litigation activity by monetizers has increased so dramatically.

¹⁰⁷ See Love, *supra* note 27, at 1355.

NPEs, which suggested a slightly longer shelf time between issuance and litigation than ours, observed a period ending in 2009.¹⁰⁸

A number of patents seem to have been litigated after their expiration.¹⁰⁹ U.S. law allows for retrospective collection of infringement damages for up to six years.¹¹⁰ This suggests the presence of what could be described as a separate market offering residual value for expired patents. We have not seen this identified in the literature before and suggest that the phenomenon would benefit from additional study. In particular, the evidence of a market for post-expiration may be suggestive of the development of subspecialties developing in the patent monetization market as the high level of interest in the activity drives more parties and speculators into the market.

O. Data Analysis

The data that we have collected can be used to further investigate the types of patents presently being asserted. We were curious to see, for example, how many of the

¹⁰⁸ See Risch, *supra* note 41, at 461, 469-470.

¹⁰⁹ See, e.g., *Kearns v. Chrysler Corp.*, 32 F.3d 1541, 1549 (Fed. Cir. 1994) (affirming pre-expiration damages where a patent had expired before trial); see generally *In re Morgan*, 990 F.2d 1230, 1232, 26 USPQ2d 1392, 1393 (Fed. Cir. 1993) (“[A] patent does have value beyond its expiration date” because “under 35 U.S.C. § 286 a patentee may bring a patent infringement action up to six years after the . . . patent expires”).

¹¹⁰ 35 U.S.C. § 286 (2013) (“[N]o recovery shall be had for any infringement committed more than six years prior to the filing of the complaint or counterclaim for infringement in the action.”); see 1 DONALD S. CHISUM, CHISUM ON PATENTS § 20.03[7][a] (Matthew Bender 2013); see also *A.C. Aukerman Co. v. R.L. Chaides Const. Co.*, 960 F.2d 1020, 1030 (Fed. Cir. 1992) (“[S]ection 286 is not a statute of limitations in the sense of barring a suit for infringement. Assuming a finding of liability, the effect of section 286 is to limit recovery to damages for infringing acts committed within six years of the date of the filing of the infringement action. One counts backwards from the date of the complaint to limit pre-filing damages arbitrarily.”); *Standard Oil Co. v. Nippon Shokubai Kagaku Kogyo Co.*, 754 F.2d 345, 348, 224 USPQ 863, 865 (Fed. Cir. 1985) (“Since § 286 cannot properly be called a ‘statute of limitations’ in the sense that it defeats the right to bring suit, it cannot be said that the statute ‘begins to run’ on some date or other. . . . [O]ne starts from the filing of a complaint or counterclaim and counts backward to determine the date before which infringing acts cannot give rise to a right to recover damages.”). Note that laches and equitable estoppel may still bar suit and/or limit the period of recovery. See generally *A.C. Aukerman Co. v. R.L. Chaides Const. Co.*, 960 F.2d 1020, 1028 (Fed. Cir. 1992) (“A presumption of laches arises where a patentee delays bringing suit for more than six years after the date the patentee knew or should have known of the alleged infringer’s activity.”).

studied patents might relate to the so-called “smartphone patent wars.” We offer the following as a limited case study, and not as a comprehensive analysis of a full dataset.

We searched our patents for just two possible classifications - Class 379 (Telephonic Communication) and 455 (Telecommunication). There are, of course, many other relevant classifications for patents related to smartphones. Nevertheless, using just these two classifications for patents asserted during the years 2011 and 2012, we found that patent monetizers had asserted 159 patents in 708 litigations during 2011-2012, as shown in Appendix B. By contrast, operating companies asserted 162 patents—nearly the same number as the patent monetizers—but asserted them at a rate one quarter below the monetizers, initiating only 263 lawsuits.

Looking solely at this small case study, monetizers in this part of the smartphone wars assert on average one patent in every 5.99 litigations. In contrast, while operating companies assert on average one patent in every 1.62 litigations. In other words, operating companies tend to assert one to two patents against one specific competitor, while monetizers assert their patents against a much wider swath of the competitive market. One cannot generalize these results to patent litigation as a whole without additional research, but we would be very interested to see whether this conclusion holds up more broadly across the litigation data. In particular, operating companies in the smartphone wars seem to be engaging in tremendously complex patent strategies, and it is possible that observations in this realm are not representative of general operating company litigation. On the other hand, given that operating companies are perceived as being unusually active in the smartphone realm, it may be particularly interesting that they are asserting fewer patents, even under those circumstances. It is also possible that

operating companies, even ones with significant licensing operations, limit their assertion activities against other operating companies out of fears of retaliation from countersuits and other forms of commercial retaliation. In short, this tantalizing glimpse suggests interesting possibilities for further study.

IV. CONCLUSION

Looking at all patent infringement litigation filed in the years 2007, 2008, 2011 and 2012, it is clear that there has been a dramatic increase in litigation by patent monetization entities. Although the number of defendants decreased in 2012, possibly in response to changes in joinder rules from the America Invents Act, the number of defendants sued by patent monetization entities, as well as the percentage of litigation filed by patent monetization entities, is far higher today than it was six years ago. This represents a striking market shift in a remarkably short period of time. Our data also show that all of the ten parties who filed the largest number of patent infringement suits are monetizers.

We also discovered that the current mechanisms for notifying the public when patents have been asserted in litigation are seriously inadequate. Although, federal law requires that district courts notify the PTO when patents are asserted in litigation and the PTO in theory then notifies the public, the PTO's main patent database lacked notice of litigation for roughly two-thirds of the litigated patents in our database.¹¹¹ This lack of notice puts small companies, particularly startups, at a disadvantage because they cannot easily tell if a patent has been asserted in litigation and what territory is being claimed

¹¹¹ Either because the patent did not have an online file wrapper or because the patent did have an online file wrapper, but the file wrapper had no indication of litigation.

by the patent holder.

In addition, tracing the transfer history of the patents asserted in our database revealed what many have suspected: there is a robust market for transfers of patents prior to litigation. Looking at patents for which transfer history was available, a majority of the patents asserted in the cases we studied were transferred from the original inventor to someone (other than the inventor's employer) prior to litigation.

Other data analysis and observations suggest that the newest patents issues are the most frequently litigated, that markets exist for patents that have already been litigated at least once and for post-expiration transfer of patents, and that if a patent asserted in litigation has been transferred once, it is likely to be transferred again. These suggest the development of an active trading market in patents, with subspecialties and arbitrage opportunities, as the high level of interest and activity in patent monetization drives more parties and speculators into the market.

Finally, we conclude by noting what this study can and cannot provide. The study can tell us that there is a lot of patent litigation being filed by monetizers, that the amount has increased rapidly over the last five years, and that it appears to be continuing to increase. The study cannot identify the reasons for the increase in monetization, determine whether the level of litigation by patent monetizers is problematic, and if so, identify the solutions to that problem. We hope, however, that by quantifying the dramatic rise in this behavior, we will encourage regulatory and legislative actors to take a hard look at what is driving litigation by patent monetization entities and at the effects of such litigation on innovation and on the economy as a whole.

APPENDIX A

Assignment Methodology Examples

I. Searching Transfer History

As described above, we examined each of the 13,744 patents in the dataset to determine the number of records for the patents found in the PTO's assignment database, the number of records that represented a genuine change in control over the patent, and the date of the last transfer of ownership.

Below are the steps performed for each of the 13,744 patents in the database:

1. Visit the PTO assignments website.
2. Enter the patent number.
3. Record the number of entries.
4. Record the number of patent ownership transfers.
5. Record the date of the last patent ownership transfer.
6. Update the database.
7. Save/Print the results of the search as a PDF file.

A. *Example*

Assume that one searches for patent transfers related to US Patent No. 5,251,294; US Patent No. 5,345,195; US Patent No. 5,623,495, and US Patent No.

5,729,419. The completed database entries will appear as in the table below with the red representing those added as a result of the search.¹¹²

Patent Number	Number of Entries	Number of Transfers	Last Execution Date
5251294	3	3	06/04/2012
5345195	2	1	05/05/2011
5623495	4	2	08/02/2009
5729419	5	0	10/23/2007

Here's how one will find the information to complete the table for US 5,251,294:

1. Go to: <http://assignments.uspto.gov/assignments/?db=pat>
2. Enter "5251294"
3. The screen will look like this before one presses the "search" button.

United States Patent and Trademark Office
Home | Site Index | Search | Guides | Contacts | eBusiness | eBiz alerts | News | Help

Assignments on the Web > [Patent Query](#)

Patent Assignment Query Menu

NOTE: Results display only for issued patents and published applications. For pending or abandoned applications please consult USPTO staff.

Enter the Data: [Online Help](#)

Reel/Frame Number:

Patent Number:

Publication Number:

Assignor Name:

Assignor Index:

Assignee Name:

Assignee Index:

Assignor/Assignee Name:

The database contains all recorded Patent Assignment information from August 1980 to December 23, 2012.

¹¹² Note that only the entry for 5,251,294 is based on actual PTO data. The other entries are merely representative.

4. After one presses “Search,” one will be presented with a results page that will then requires interpretation.

II. Determining Total Number of Entries

In addition to determining real transfers of rights and the date of the last transfer, we recorded the total number of entries. Entries would include things such as a transfer from an employee to an employer and a company name change.

A. Example 1

Assume that a patent assignment record contained the transfer of rights from an inventor to her company, a change of name for the company, and the sale of the patent to another company, and then a sale of the patent back to the inventor on Jan. 5, 2012. For such a history, we recorded the following:

Number of Entries	Number of Transfers	Last Execution Date
4	2	01/05/2012

The 4 “Entries” are:



- Transfer from inventor to her company
- Change of name of the company
- Sale of the patent to another company
- Sale of the patent back to the inventor

The 2 “Transfers” are:

- Sale of the patent to another company
- Sale of the patent back to the inventor

The “Last Execution Date” is January 5, 2012.

Returning to the example using US Patent 5,251,294 above, a search presents the user with the following results page, which has been annotated to highlight certain results:

 **United States Patent and Trademark Office**
[Home](#) | [Site Index](#) | [Search](#) | [Guides](#) | [Contacts](#) | [eBusiness](#) | [eBiz alerts](#) | [News](#) | [Help](#) 

Assignments on the Web > Patent Query

Patent Assignment Abstract of Title
NOTE: Results display only for issued patents and published applications.
For pending or abandoned applications please consult USPTO staff.

A **Total Assignments: 3** ¹

Patent #: 5251294 **Issue Dt:** 10/05/1993 **Application #:** 07476931 **Filing Dt:** 02/07/1990
Inventor: DANIEL H. ABELOW
Title: ACCESSING, ASSEMBLING, AND USING BODIES OF INFORMATION

Assignment: 1

Reel/Frame: 016097/0404 **Recorded:** 06/07/2005 **Pages:** 4

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS). ²

Assignor: ABELOW, DANIEL H **Exec Dt:** 12/10/2004 ³

Assignee: FERRARA ETHEREAL LLC
2215-B RENAISSANCE DRIVE
SUITE 5
LAS VEGAS, NEVADA 89119

Correspondent: MICHAEL V. MESSINGER
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

Assignment: 2

Reel/Frame: 023546/0628 **Recorded:** 11/20/2009 **Pages:** 5

Conveyance: MERGER (SEE DOCUMENT FOR DETAILS). ⁵

Assignor: FERRARA ETHEREAL LLC **Exec Dt:** 11/16/2009 ⁴

Assignee: WEBVENTION LLC
505 EAST TRAVIS STREET
SUITE 209
MARSHALL, TEXAS 75670

Correspondent: DOV ROSENFELD
5507 COLLEGE AVENUE, SUITE 2
OAKLAND, CA 94618

Assignment: 3

Reel/Frame: 028317/0432 **Recorded:** 06/05/2012 **Pages:** 3

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS). ⁶

Assignor: WEBVENTION LLC **Exec Dt:** 06/04/2012 ⁷

Assignee: WEBVENTION GROUP LLC
505 EAST TRAVIS STREET, SUITE 209
MARSHALL, TEXAS 75670

Correspondent: MCKEON, MEUNIER, CARLIN & CURFMAN, LLC
817 W. PEACHTREE STREET, NW, SUITE 500
ATLANTA, GA 30308

Under Assignment 1 in the record above, we note that the patent was issued on October 5, 1993 (1), but the inventor Dan Abelow did not sell it until December 10, 2004 (2). Inventors who work for companies do not typically execute assignments for patents eleven years after the patent has been issued. Consequently, we concluded that this is a patent in which an individual obtained a patent and then later sold the patent to a company (3).¹¹³ This record represents the first transfer.

On November 16, 2009 (4) the Ferrara Ethereal company “merged” with a company called Webvention LLC (5). We considered “mergers” to represent patent transfers. Thus, this record represents our second transfer.

Webvention LLC recently sold the patent to Webvention Group LLC (7). You will note that the Webvention Group has the same address as Webvention. We will, however, consider this to have been a transfer of rights because it is recorded as such. We could surmise, for example, that the new Webvention entity was created in light of new investors or some other circumstance that might have involved a genuine change of control for the company. This final transaction was executed on June 4, 2012 (6).

In this example, we note that all of the recorded entries are also transfers, so the number of entries and the number of transfers are the same.

Thus, when we are complete, the updated Excel spreadsheet will read as follows:

Patent Number	Number of Entries	Number of Transfers	Last Execution Date
5251294	3	3	06/04/2012

¹¹³ The company involved is a known shell of Intellectual Ventures LLC.

As a final step, we saved the assignment record for the 5251294 patent in the form of a PDF file. This step preserved our work for further review and analysis later.

B. *Example 2*

Patent Number	Number of Entries	Number of Transfers	Last Execution Date
5729428	2	1	01/28/2002

The above entries are based on the following search page:

Assignments on the Web > **Patent Query**

Patent Assignment Abstract of Title

**NOTE: Results display only for issued patents and published applications.
For pending or abandoned applications please consult USPTO staff.**

Total Assignments: 2

1

Patent #: [5729428](#) **Issue Dt:** 03/17/1998 **Application #:** 08639111 **Filing Dt:** 04/24/1996
Inventors: KOJI SAKATA, YUJI AOKI, TOSHIHIKO NISHIYAMA, SATOSHI ARAI, SYUICHI NAGASHIMA
Title: SOLID ELECTROLYTIC CAPACITOR WITH CONDUCTIVE POLYMER AS SOLID ELECTROLYTE AND METHOD FOR FABRICATING THE SAME

Assignment: 1

Reel/Frame: [007993/0506](#) **Recorded:** 04/24/1996 **Pages:** 2

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS)

Assignors: [SAKATA, KOJI](#)

[AOKI, YUJI](#)

[NISHIYAMA, TOSHIHIKO](#)

[ARAI, SATOSHI](#)

[NAGASHIMA, SYUICHI](#)

Assignee: [NEC CORPORATION](#)

7-1, SHIBA 5-CHOME, MINATO-KU
TOKYO, JAPAN

Correspondent: SUGHRUE, MION, ZINN, MACPEAK & SEAS
J. FRANK OSHA
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, D.C. 20037-3202

Exec Dt: 04/11/1996

Exec Dt: 04/11/1996

Exec Dt: 04/11/1996

Exec Dt: 04/11/1996

Exec Dt: 04/11/1996

2

Assignment: 2

Reel/Frame: [012683/0050](#) **Recorded:** 03/15/2002 **Pages:** 3

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignor: [NEC CORPORATION](#)

Assignee: [NEC TOKIN TOYAMA, LTD.](#)

560, NYUZEN, NYUZEN-MACHI
SHIMONIIKAWA-GUN, TOYAMA, JAPAN 939-0

Correspondent: SUGHRUE MION, PLLC
J. FRANK OSHA
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, D.C. 20037-3213

Exec Dt: 01/28/2002

3

Here, one will note that the patent was assigned on April 11, 1996 (2) by the inventors before the patent was even issued on March 17, 1998 (1). This is a typical transfer of rights from an employee to his or her employer. Thus, this will not count as a transfer of rights for our purposes, but will count it in the total number of entries for the patent.

The second transaction in the record above likely comprises one that does not involve a genuine change of ownership. However, since the assignment is styled as an assignment of rights, and since the new entity does not have precisely the same name as the previous entry, we considered this transaction to represent an assignment of rights. This assignment took place on January 28, 2002 (3).

Our entry of this information will take the following form:

Patent Number	Number of Entries	Number of Transfers	Last Execution Date
5729428	2	1	01/28/2002

On occasion, we found that no information has ever been recorded for the ownership of a patent. We entered such entries as follows:

Patent Number	Number of Entries	Number of Transfers	Last Execution Date
5729417	0	0	No recordal

APPENDIX B

US Patents in Classes 379 (Telephonic Communication) and/or 455 (Telecommunication) Asserted in Patent Litigations filed in 2011-2012 by Apparent Patent Monetizers and Operating Companies

Table B.1: Apparent Monetizers

No.	Patent No.	Title	No. of Litigations	Owner
	5206854	Detecting loss of echo cancellation	49 litigations	Brandywine Communications Technologies, LLC
	5223844	Vehicle tracking and security system	44 litigations	PJC Logistics LLC
	5251328	Predistortion technique for communications systems	49 litigations	Brandywine Communications Technologies, LLC
	5305381	Cradle for telephone	3 litigations	Piao Shang Industry Co Ltd.
	5339352	Directory assistance call completion via mobile systems	1 litigation	Intellectual Ventures I LLC
	5351296	Financial transmission system	18 litigations	Swipe Innovations, LLC
	5379421	Interactive terminal for the access of remote database information	1 litigation	Garnet Digital, LLC
	5455859	Telephone handset interface for device having audio input	1 litigation	GTZM Technology Ventures LTD
	5487100	Electronic mail message delivery system	4 litigations	Helferich Patent Licensing, LLC.
	5555286	Cellular phone based automatic emergency vessel/vehicle location system	1 litigation	Tendler Cellular of Texas, LLC
	5561706	System for managing access by mobile users to an interconnected communications network where a billing authority is identified by a billing code from the user	1 litigation	Fenner Investments, Ltd
	5576952	Medical alert distribution system with selective filtering of medical information	1 litigation	Sonic Industry LLC
	5600712	Enabling technique for quickly establishing high speed PSTN connections in telecommuting applications	12 litigations	Telecomm Innovations LLC

No.	Patent No.	Title	No. of Litigations	Owner
	5606602	Bidding for telecommunications traffic	2 litigations	AIP Acquisition LLC
	5636282	Method for dial-in access security using a multimedia modem	7 litigations	Digital Signal Innovations LLC
	5675734	System for transmitting desired digital video or audio signals	1 litigation	Sightsound Technologies LLC
	5719922	Simultaneous voice/data answering machine	19 litigations	Brandywine Communications
	5737394	Portable telephone apparatus having a plurality of selectable functions activated by the use of dedicated and/or soft keys	1 litigation	MobileMedia Ideas LLC
	5754306	System and method for a communication system	1 litigation	Unified Messaging Solutions, LLC
	5774526	Reconfigurable on-demand telephone and data line system	2 litigations	Ceres Communications Technologies, LLC
	5774527	Integrated telephone and cable communication networks	1 litigation	Multiservice Solutions LLC
	5802160	Multi-ring telephone method and system	1 litigation	Teleconnect Solutions LLC
	5805676	Telephone/transaction entry device and system for entering transaction data into databases	3 litigations	CyberFone Systems LLC
	5809246	Selection and retrieval of music from a digital database	1 litigation	Mission Abstract Data LLC
	5812537	Echo canceling method and apparatus for data over cellular	47 litigations	Brandywine Communications
	5818836	Method and apparatus for anonymous voice communication using an online data service	3 litigations	Click-to-Call Technologies LP
	5828657	Half-duplex echo canceler training using a pilot signal	47 litigations	Brandywine Communications
	5841840	Multiple line modem and method for providing voice on demand	5 litigations	Driden Multicommunications LLC
	5844596	Two-way RF communication at points of convergence of wire pairs from separate internal telephone networks	1 litigation	United Access Technologies LLC
	5845219	Mobile station having priority call alerting function during silent service mode	1 litigation	MobileMedia Ideas LLC

No.	Patent No.	Title	No. of Litigations	Owner
	5850505	Method for preconfiguring a network to withstand anticipated failures	2 litigations	Telecommunications Research Laboratories
	5874903	RF repeater for automatic meter reading system	1 litigation	SipCo, LLC
	5881142	Integrated communications control device for a small office configured for coupling within a scalable network	16 litigations	Brandywine Communications
	5894506	Method and apparatus for generating and communicating messages between subscribers to an electronic messaging network	1 litigation	Mobile Telecommunications Technologies LLC
	5903830	Transaction security apparatus and method	1 litigation	Joao Bock Transaction Systems LLC
	5917897	System and method for controlling a telecommunication network in accordance with economic incentives	2 litigations	AIP Acquisition LLC
	5937341	Simplified high frequency tuner and tuning method	3 litigations	Washington Research Foundation
	5940771	Network supporting roaming, sleeping terminals	25 litigations	Innovatio IP Ventures, LLC
	5942986	System and method for automatic critical event notification	1 litigation	Medical Monitoring And Paging LLC
	5987103	Telephone/transaction entry device and system for entering transaction data into databases	3 litigations	CyberFone Systems LLC
	6044062	Wireless network system and method for providing same	2 litigations	IP Co., LLC
	6044069	Power management system for a mobile station	3 litigations	WIAV Solutions LLC
	6044382	Data transaction assembly server	8 litigations	CyberFone Systems LLC
	6070068	Communication terminal device and method for controlling a connecting state of a call into a desired connection state upon a predetermined operation by a user	1 litigation	MobileMedia Ideas LLC
	6078654	Method of and system for efficient use of telecommunication networks	4 litigations	AIP Acquisition LLC
	6088444	Method and apparatus for value-based queuing of telephone calls	1 litigation	Walker Digital LLC

No.	Patent No.	Title	No. of Litigations	Owner
	6091956	Situation information system	7 litigations	LBS Innovations LLC
	6148080	Mobile telephone with amplified listening	1 litigation	Mobile Enhancement Solutions LLC
	6188756	Efficient communication through networks	4 litigations	AIP Acquisition LLC
	6192123	Method and apparatus for initiating telephone calls using a data network	9 litigations	Telinit Technologies, LLC
	6212408	Voice command system and method	1 litigation	Development Innovation Group, LLC
	6233330	Telephone call screening device with power and telephone line failure alert, call answering, call routing, and caller ID	1 litigation	Qixiz LLC
	6243373	Method and apparatus for implementing a computer network/internet telephone system	1 litigation	C2 Communications Technologies, Inc.
	6243446	Distributed splitter for data transmission over twisted wire pairs	3 litigations	United Access Technologies LLC
	6253075	Method and apparatus for incoming call rejection	1 litigation	MobileMedia Ideas LLC
	6236717	Simultaneous voice/data answering machine	19 litigations	Brandywine Communications
	6266518	Method and system for down-converting electromagnetic signals by sampling and integrating over apertures	1 litigation	Parkervision, Inc.
	6278887	System and method for power conservation in a wireless communication handset	1 litigation	Development Innovation Group, LLC
	6311231	Method and system for coordinating data and voice communications via customer contract channel changing system using voice over IP	60 litigations	Pragmatus Telecom LLC
	6333973	Integrated message center	1 litigation	Helferich Patent Licensing LLC
	6374311	Communication network having a plurality of bridging nodes which transmit a beacon to terminal nodes in power saving state that it has messages awaiting delivery	24 litigations	Innovatio IP Ventures, LLC
	6397038	Satellite broadcast receiving and distribution system	1 litigation	Global Communications, Inc.
	6427068	Simplified high frequency tuner and tuning method	1 litigation	Washington Research Foundation

No.	Patent No.	Title	No. of Litigations	Owner
	6427078	Device for personal communications, data collection and data processing, and a circuit card	1 litigation	MobileMedia Ideas LLC
	6456841	Mobile communication apparatus notifying user of reproduction waiting information effectively	8 litigations	Digitude Innovations LLC
	6487291	Method and apparatus for valve-based queuing of telephone calls	1 litigation	Walker Digital LLC
	6496579	Method of and system for efficient use of telecommunication networks	4 litigations	AIP Acquisition LLC
	6512465	Vehicle tracker including stationary time determination and associated methods	1 litigation	Omega Patents LLC
	6526268	Mobile weather band radio and method	3 litigation	Tramontane IP LLC
	6529725	Transaction security apparatus and method	5 litigations	Joao Bock Transaction Systems, LLC
	6542585	Distributed splitter for data transmission over twisted wire pairs	3 litigations	United Access Technologies LLC
	6560461	Authorized location reporting paging system	1 litigation	Enovsys LLC
	6633761	Enabling seamless user mobility in a short-range wireless networking environment	11 litigations	ReefEdge Networks LLC
	6668286	Method and system for coordinating data and voice communications via customer contact channel changing system over IP	61 litigations	Pragmatus Telecom LLC
	6694007	System and method for establishing long distance call connections using electronic text messages	1 litigation	Integren Holdings PTE LTD
	6738740	Speech recognition system for interactively gathering and storing verbal information to generate documents	1 litigation	VoiceFill
	6757517	Apparatus and method for coordinated music playback in wireless ad-hoc networks	1 litigation	Black Hills Media LLC
	6771970	Location determination system	4 litigation	CallWave Communication LLC
	6778073	Method and apparatus for managing audio devices	1 litigation	Eagle Harbor Holdings, LLC
	6792277	Arranging control signalling in telecommunications system	1 litigation	Core Wireless Licensing S.a.r.l.

No.	Patent No.	Title	No. of Litigations	Owner
	6807257	Computer, internet and telecommunications based network	1 litigation	Parus Holdings, Inc
	6847310	Keyboard	2 litigations	Gellyfish Technology of Texas, LLC
	6865268	Dynamic, real-time call tracking for web-based customer relationship management	1 litigation	VTRAX Technologies Licensing, Inc.
	6873848	Method of call routing and connection	1 litigation	JSDQ Mesh Technologies LLC
	6879838	Distributed location based service system	3 litigations	Mobile Enhancement Solutions LLC
	6894811	Interface circuit for utilizing a facsimile coupled to a PC as a scanner or printer	13 litigations	Infinity Computer Products, Inc.
	6925183	Preventing shortened lifetimes of security keys in a wireless communications security system	1 litigation	Innovative Sonic Limited
	6963734	Differential frequency down-conversion using techniques of universal frequency translation technology	1 litigation	Parkervision, Inc.
	6970501	Method and apparatus for automatic selection and operation of a subscriber line spectrum class technology	47 litigations	Brandywine Communications Technologies LLC
	6978143	Method and arrangement for managing packet data transfer in a cellular system	1 litigation	Core Wireless Licensing S.a.r.l.
	6983138	User interface for message access	1 litigation	Helferich Patent Licensing, L.L.C.
	6985748	Inter-carrier messaging service providing phone number only experience	11 litigations	Intercarrier Communications LLC
	7003304	Paging transceivers and methods for selectively retrieving messages	1 litigation	Helferich Patent Licensing, L.L.C.
	7035598	Modular computer system	3 litigations	Lochner Technologies, LLC
	7035824	Interactive system for and method of performing financial transactions from a user base	1 litigation	IPEG Limited Liability Company
	7053767	System and method for monitoring and controlling remote devices	1 litigation	SipCo, LLC
	7072614	Communication device	1 litigation	Semiconductor Ideas To The Market BV

No.	Patent No.	Title	No. of Litigations	Owner
	7080051	Internet download systems and methods providing software to internet computer users for local execution	5 litigations	Oasis Research, LLC
	7096003	Transaction security apparatus	7 litigations	Joao Bock Transaction Systems LLC
	7096033	Mobile apparatus enabling inter-network communication	3 litigations	Mobile Enhancement Solutions LLC
	7102511	Radio wave detection device	1 litigation	SipCo, LLC
	7127048	Systems and methods for integrating analog voice service and derived POTS voice service in a digital subscriber line environment	5 litigations	Voice Integration Technologies LLC
	7158757	Modular computer	1 litigation	SmartData, S.A.
	7167731	Emoticon input method and apparatus	2 litigations	Varia Holdings LLC
	7177608	Personal spectrum recorder	1 litigation	Catch a Wave Technologies, Inc.
	7212829	Method and system for providing shipment tracking and notifications	1 litigation	IpVenture, Inc
	7236739	Apparatus and method for coordinated music playback in wireless ad-hoc networks	1 litigation	Black Hills Media LLC
	7240290	Telephone call initiation through an on-line search	2 litigations	Vellata, LLC
	7286828	Method of call routing and connection	1 litigation	JSDQ Mesh Technologies LLC
	7299018	Receiver comprising a digitally controlled capacitor bank	1 litigation	Semiconductor Ideas To The Market BV
	7327723	Computer, internet and telecommunications based network	1 litigation	Parus Holdings, Inc.
	7334024	System for transmission of voice and data over the same communications line	4 litigations	CyberFone Systems LLC
	7356361	Hand-held device	1 litigation	GellyFish Technology of Texas LLC
	7383022	Mobile equipment based filtering for packet radio service	1 litigation	Core Wireless Licensing S.a.r.l.
	7397910	Method and apparatus for providing expanded telecommunications service	2 litigations	CallWave Communication LLC

No.	Patent No.	Title	No. of Litigations	Owner
	7418092	Virtual call center	1 litigation	Alto Ventures, Inc.
	7450957	System and method for blocking the use of a service in a telecommunication system	1 litigation	Intellectual Ventures I LLC
	7489423	Interface circuit for utilizing a facsimile machine coupled to a PC as a scanner or printer	13 litigations	Infinity Computer Products, Inc.
	7493097	High dynamic range compact mixer output stage for a wireless receiver	1 litigation	Signal Enhancement Technologies LLC
	7496858	Telephone call initiation through an on-line search	2 litigations	Vellata, LLC
	7515896	Method and system for down-converting an electromagnetic signal, and transforms for same, and aperture relationships	1 litigation	Parkervision, Inc.
	7525955	Internet protocol (IP) phone with search and advertising capability	5 litigations	H-W Technology LC
	7555110	Methods and apparatus for providing expanded telecommunications service	2 litigations	CallWave Communication LLC
	7596606	Message publishing system for publishing messages from identified, authorized senders	2 litigations	Easyweb Innovations, LLC
	7599664	Mobile equipment based filtering for packet radio service (PRS)	1 litigation	Core Wireless Licensing S.a.r.l.
	7606910	Method for indicating a UE that it must register	1 litigation	Core Wireless Licensing S.a.r.l.
	7685247	System for publishing and converting messages from identified, authorized senders	2 litigations	Easyweb Innovations, LLC
	7689658	Method for publishing messages from identified, authorized senders to subscribers	2 litigations	Easyweb Innovations, LLC
	7698372	System for publishing messages from identified, authorized senders to subscribers	2 litigations	Easyweb Innovations, LLC
	7724879	Efficient communication through networks	7 litigations	AIP Acquisition LLC
	7734251	Signal processing apparatus and methods	1 litigation	Personalized Media Communications, L.L.C.
	7764231	Wireless location using multiple mobile station location techniques	2 litigations	TracBeam, L.L.C
	7822188	Methods and apparatus for providing expanded telecommunications service	1 litigation	CallWave Communications LLC

No.	Patent No.	Title	No. of Litigations	Owner
	7826791	Satellite broadcast receiving and distribution system	1 litigation	Global Communications Inc.
	7840176	Information distribution and processing system	1 litigation	Email Link Corp.
	7852995	Method and apparatus for selectively providing messages in telecommunications systems	11 litigations	Callertone Innovations LLC
	7853225	Simplified high frequency tuner and tuning method	1 litigation	Washington Research Foundation
	7860225	Method and apparatus for selectively providing messages in telecommunications systems	11 litigations	Callertone Innovations LLC
	7876744	Method for collect call service based on VoIP technology and system thereof	2 litigations	Howlink Global LLC
	7899492	Methods, systems and apparatus for displaying the multimedia information from wireless communication networks	1 litigation	Virginia Innovation Sciences, Inc.
	7907933	Call routing apparatus	4 litigations	CallWave Communication LLC
	7916648	Method of call routing and connection	2 litigation	JSDQ Mesh Technologies LLC
	7925238	Simplified high frequency tuner and tuning method	1 litigation	Washington Research Foundation
	7925273	Method and apparatus for updating the location of a mobile device within a wireless communication network	1 litigation	Enovsys LLC
	7934148	Systems and method for storing, delivering, and managing messages	71 litigations	Unified Messaging Solutions LLC
	7953390	Method for content delivery	1 litigation	Affinity Labs of Texas, LLC
	7970379	Providing broadcast content	1 litigation	Affinity Labs of Texas, LLC
	7983616	Method and system for improving client server transmission over fading channel with wireless location and authentication technology via electromagnetic radiation	1 litigation	Sellerbid, Inc.
	8019060	Telephone/transaction entry device and system for entering transaction data into databases	16 litigations	CyberFone Systems LLC

No.	Patent No.	Title	No. of Litigations	Owner
	8027268	Method and apparatus for dynamic configuration of multiprocessor system	1 litigation	Eagle Harbor Holdings, LLC
	8040574	Interface circuit for utilizing a facsimile machine to a PC as a scanner or printer	12 litigations	Infinity Computer Products, Inc.
	8050711	Methods, systems and apparatus for displaying the multimedia information from wireless communication networks	1 litigation	Virginia Innovation Sciences, Inc.
	8060117	Location based information system	2 litigations	Tendler Cellular of Texas, LLC
	8064434	Method for providing internet services to a telephone user	8 litigations	Meadows Financial Systems, LLC
	8078200	System and method for blocking the use of a service in a telecommunication system	1 litigation	Intellectual Ventures I LLC
	8090321	Transmitting sports and entertainment data to wireless hand held devices over a telecommunications network	1 litigation	Front Row Technologies, LLC
	8095064	Satellite broadcast receiving and distribution system	1 litigation	Global Communications, Inc.
	8107601	Wireless messaging system	8 litigations	Helferich Patent Licensing, LLC
	8135398	Method and apparatus for multimedia communications with different user terminals	1 litigation	Virginia Innovation Sciences, Inc.
	8135801	Method, apparatus and system for management of information content for enhanced accessibility over wireless communication networks	1 litigation	Wireless Ink Corporation
	8145268	Methods, systems and apparatus for displaying the multimedia information from wireless communication networks	1 litigation	Virginia Innovation Sciences, Inc.
	8224381	Methods, systems and apparatus for displaying the multimedia information from wireless communication networks	2 litigations	Speculative Product Design, LLC
	8229437	Pre-allocated random access identifiers	2 litigations	Wi-LAN USA, Inc.
	8254894	Method for advertising on digital cellular telephones and reducing costs to the end user	2 litigations	Xcellasave Inc.
	8294915	Interface circuit for utilizing a facsimile machine coupled to a PC as a scanner or printer	12 litigations	Infinity Computer Products, Inc.

No.	Patent No.	Title	No. of Litigations	Owner
	8325901	Methods and apparatus for providing expanded telecommunications service	2 litigations	CallWave Communication LLC
	RE39231	Communication terminal equipment and call incoming control method	1 litigation	MobileMedia Ideas LLC
	TOTAL		1,001 litigations	

Table B.2: Apparent Operating Companies

No.	Patent No.	Title	No. of Litigations	Owner
	5228077	Remotely upgradable universal remote control	1	Universal Electronics Inc.
	5255313	Universal remote control system	1	Universal Electronics Inc.
	5298884	Tamper detection circuit and method for use with wearable transmitter tag	1	Alcohol Monitoring Systems
	5410326	Programmable remote control device for interacting with a plurality of remotely controlled devices	1	Universal Electronics Inc.
	5414761	Remote control system	1	Universal Electronics Inc.
	5438329	Duplex bi-directional multi-mode remote instrument reading and telemetry system	1	Sensus USA Inc.
	5481570	Block radio and adaptive arrays for wireless systems	1	Harris Corp.
	5515378	Spatial division multiple access wireless communication systems	1	Harris Corp.
	5570369	Reduction of power consumption in a mobile station	1	Nokia
	5574779	Method and apparatus for provisioning network services	1	Dashwire
	5579239	Remote video transmission system	1	Apple, Inc.
	5594936	Global digital video news distribution system	7	Trans Video Electronics Ltd.
	5619503	Cellular/satellite communications system with improved frequency re-use	1	Harris Corp.
	5630159	Method and apparatus for personal attribute selection having delay management method and apparatus for preference establishment when preferences in a donor device are unavailable	1	HTC Corp.
	5689825	Method and apparatus for downloading updated software to portable wireless communication units	1	Motorola Mobility
	5710987	Receiver having concealed external antenna	2	Motorola Mobility

No.	Patent No.	Title	No. of Litigations	Owner
	5754119	Multiple pager status synchronization system and method	2	Motorola Mobility
	5781541	CDMA system having time-distributed transmission paths for multipath reception	1	Harris Corp.
	5790643	Pricing method for telecommunication system	1	Arris Corp.
	5793853	System and method for recording billing information for a telecommunications service request	3	Sprint Communications
	5815116	Personal beam cellular communication system	1	Harris Corp.
	5845202	Method and apparatus for acknowledge back signaling using a radio telephone system	1	Motorola Mobility
	5877656	Programmable clock generator	1	Avago Technologies US Inc.
	5884190	Method for making a data transmission connection from a computer to a mobile communication network for transmission of analog and/or digital signals	1	Nokia
	5897625	Automated document cashing system	1	Capital Security Systems
	6151309	Service provision system for communications networks	1	British Telecommunications, PLC
	6151310	Dividable transmit antenna array for a cellular base station and associated method	1	Harris Corp.
	6188909	Communication network terminal supporting a plurality of applications	1	Nokia, Inc.
	6205216	Apparatus and method for inter-network communication	1	Arris Group, Inc.
	6222914	System and method for administration of an incentive award system having a delayed award payment using a credit instrument	1	Meridian Enterprises Corporation
	6246758	Method of providing telecommunication services	1	Comcast IP Holdings, Inc.

No.	Patent No.	Title	No. of Litigations	Owner
	6272333	Method and apparatus in a wireless communication system for controlling a delivery of data	1	Motorola Mobility
	6278888	Radiotelephones having contact-sensitive user interfaces and methods of operating same	1	Ericsson, Inc.
	6397040	Telecommunications apparatus and method	1	British Telecommunications, plc
	6405037	Method and architecture for an interactive two-way data communication network	1	Openwave Systems, Inc.
	6408176	Method and apparatus for initiating a communication in a communication system	1	Motorola Mobility
	6418310	Wireless subscriber terminal using java control code	1	Ericsson, Inc.
	6445917	Mobile station measurements with event-based reporting	1	Ericsson, Inc.
	6445932	Multi-service mobile station	1	Nokia, Inc.
	6466568	Multi-rate radiocommunication systems and terminals	1	Ericsson, Inc.
	6493673	Markup language for interactive services and methods thereof	1	Motorola Mobility
	6504515	High capacity broadband cellular/PCS base station using a phased array antenna	2	Harris Corp.
	6504580	Non-Telephonic, non-remote controller, wireless information presentation device with advertising display	1	Universal Electronics, Inc.
	6529824	Personal communication system for communicating voice data positioning information	2	Silver State Intellectual Technologies, Inc.
	6597787	Echo cancellation device for cancelling echos in a transceiver unit	1	Ericsson, Inc.
	6605038	System for monitoring health, wellness and fitness	1	BodyMedia Inc.
	6694154	Method and apparatus for performing beam searching in a radio communication system	1	Harris Corp.
	6718030	Virtual private network system and method using voice over internet protocol	1	Netgear, Inc.
	6728530	Calendar-display apparatus, and associated method, for a mobile terminal	2	Nokia, Inc.
	6731751	Apparatus for cordless computer telephony	1	Ericsson, Inc.

No.	Patent No.	Title	No. of Litigations	Owner
	6744858	System and method for supporting multiple call centers	1	Cassidian Communications, Inc.
	6757324	Method and apparatus for detecting jamming signal	1	CSR Technology, Inc.
	6771980	Method for dialing in a smart phone	1	Samsung Electronics Co., Ltd.
	6778517	Wireless broadband service	1	Harris Corp.
	6792247	Co-located frequency-agile system and method	1	CSR Technology, Inc.
	6873694	Telephony network optimization method and system	2	Comcast IP Holdings, Inc.
	6873823	Repeater with digital channelizer	3	Axell Wireless Ltd
	6879808	Broadband communication systems and methods using low and high bandwidth request and broadcast links	2	Space Systems/Loral, Inc.
	6879843	Device and method for storing and reproducing digital audio data in a mobile terminal	1	Samsung Electronics Co., Ltd.
	6882827	Testing response of a radio transceiver	1	CSR Technology, Inc.
	6882870	Personal mobile communications device having multiple units	2	Nokia, Inc.
	6885870	Transferring of a message	1	Comcast Cable Communications, Inc.
	6915119	Telephone and data transmitting method for telephone	1	Fujifilm Corp.
	6920316	High performance integrated circuit regulator with substrate transient suppression	7	Freescall Semiconductor, Inc.
	6950645	Power-conserving intuitive device discovery technique in a bluetooth environment	4	SmartPhone Technologies LLC
	6965666	System and method for sending e-mails from a customer entity in a telecommunications network	1	Comcast Cable Communications, Inc.
	6965667	Method of accounting prepaid online internet service credit values	1	Peregrine Network, Inc.

No.	Patent No.	Title	No. of Litigations	Owner
	6996073	Methods and apparatus for providing high speed connectivity to a hotel environment	1	iBAHN General Holdings Corporation
	7035607	Systems and methods for providing an adjustable reference signal to RF circuitry	1	Silicon Laboratories Inc.
	7043241	Method and system for provisioning authorization for use of a service in a communications network	1	Comcast Cable Communications, Inc.
	7054654	Automatic messaging in response to television viewing	1	Comcast Cable Communications, Inc.
	7062281	Multi-mode paging system	1	Long Range Systems, LLC
	7069055	Mobile telephone capable of displaying world time and method for controlling the same	1	Apple, Inc.
	7079871	Portable telephone and method of displaying data thereof	1	Apple, Inc.
	7089107	System and method for an advance notification system for monitoring and reporting proximity of a vehicle	7	ArrivalStar S.A.
	7092509	Contact center system capable of handling multiple media types of contacts and method for using the same	1	Microlog Corp.
	7123898	Switch circuit and method of switching radio frequency signals	3	Peregrine Semiconductor Corporation
	7200400	Mobile to 802.11 voice multi-network roaming utilizing SIP signaling with SIP proxy or redirect server	1	Netgear, Inc.
	7218722	System and method for providing call management services in a virtual private network using voice or video over internet protocol	1	Netgear, Inc.
	7292685	Pro-active features for telephony	1	Mitel Networks Corporation
	7319874	Dual mode terminal for accessing a cellular network directly or via a wireless intranet	1	Nokia, Inc.
	7343165	GPS publication application server	3	Silver State Intellectual Technologies, Inc.

No.	Patent No.	Title	No. of Litigations	Owner
	7366529	Communication network terminal supporting a plurality of applications	1	Nokia, Inc.
	7403788	System and method to initiate a mobile data communication utilizing a trigger system	3	m-Qube Inc.
	7418086	Multimodal information services	1	LucidMedia Networks, Inc.
	7426388	Wireless, ground link-based aircraft data communication system with roaming feature	1	Harris Corp.
	7447516	Method and apparatus for data transmission in a mobile telecommunication system supporting enhanced uplink service	1	Samsung Electronics Co., Ltd.
	7460852	Switch circuit and method of switching radio frequency signals	4	Peregrine Semiconductor Corporation
	7469151	Methods, systems and computer program products for over the air (OTA) provisioning of soft cards on devices with wireless communications capabilities	1	C-SAM Inc.
	7502406	Automatic power control system for a code division multiple access (CDMA) communications system	1	Interdigital Communications LLC
	7505762	Wireless telephone data backup system	4	Synchronoss Technologies Inc.
	7509148	Message alert system and method of providing message notification	1	Motorola Mobility
	7533342	System and method of a personal computer device providing telephone capability	1	SmartPhone Technologies LLC
	7546139	System and method for establishing and maintaining communications across disparate networks	3	F4W, Inc.
	7577460	Portable composite communication terminal for transmitting/receiving and images, and operation method and communication system thereof	1	Apple, Inc.
	7580376	Methods and apparatus for providing high speed connectivity to a hotel environment	1	iBAHN General Holdings Corporation
	7587070	Image classification and information retrieval over wireless digital networks and the internet	1	Facedouble, Inc.

No.	Patent No.	Title	No. of Litigations	Owner
	7593512	Private VoIP network for security system monitoring	1	Nextalarm Monitoring Services Inc.
	7602886	Method and system for using a network-provided location for voice-over-packet emergency services calls	1	Comcast Cable Communications, LLC
	7643824	Wireless telephone data backup system	2	Synchronoss Technologies Inc.
	7664242	System and method for anonymous telephone communication	2	Teltech Systems, Inc.
	7664485	Making a phone call from an electronic device having an address list or a call history list	4	SmartPhone Technologies LLC
	7664516	Method and system for peer-to-peer advertising between mobile communication devices	6	Blue Calypso, Inc.
	7702322	Method and system for distributing and updating software in wireless devices	2	Good Technology Corporation
	7734020	Two-way voice and voice over IP receivers for alarm systems	1	Nextalarm Monitoring Services Inc
	7742790	Environmental noise reduction and cancellation for a communication device including for a wireless and cellular telephone	1	Noise Free Wireless, Inc.
	7752309	Method and apparatus for inexpensively monitoring and controlling remotely distributed appliances	1	Mueller International, LLC
	7773942	Redundant communication path for satellite communication data	1	Viasat, Inc.
	7778396	Telephone status notification system	1	Facebook, Inc.
	7778613	Dual conversion receiver with programmable intermediate frequency and channel selection	1	Silicon Laboratories Inc.
	7783299	Advanced triggers for location-based service applications in a wireless location system	1	TruePosition Inc.
	7792518	System and method to initiate a mobile data communication utilizing a trigger system	3	m-Qube Inc.
	7796969	Symmetrically and asymmetrically stacked transistor group RF switch	4	Peregrine Semiconductor Corporation

No.	Patent No.	Title	No. of Litigations	Owner
	7813716	Method of providing information to a telephony subscriber	1	Single Touch Interactive, Inc.
	7831233	System and method for radio signal reconstruction using signal processor	3	American Radio LLC
	7848500	Method and apparatus to validate a subscriber line	1	Paymentone Corporation
	7849154	Acquiring, storing, and correlating profile data of cellular mobile communications system's users to events	1	The Nielsen Company (US), LLC
	7856234	System and method for estimating positioning error within a WLAN-based positioning system	2	Skyhook Wireless Inc.
	7860499	Switch circuit and method of switching radio frequency signals	4	Peregrine Semiconductor Corporation
	7899167	Centralized call processing	1	Securus Technologies, Inc.
	7899169	System and method for modifying communication information (MCI)	10	NobelBiz, Inc.
	7917285	Device, system and method for remotely entering, storing and sharing addresses for a positional information device	2	Qaxaz LLC
	7921455	Token device that generates and displays one-time passwords and that couples to a computer for inputting or receiving data for generating and outputting one-time passwords and other functions	1	EMC Corporation
	7933122	Protective enclosure for a computer	8	Otter Products, LLC
	7957524	Protective covering for an electronic device	1	Zagg Intellectual Property Holding Co
	7961709	Secondary synchronization sequences for cell group detection in a cellular communications system	1	Ericsson, Inc.
	7970386	System and method for monitoring and maintaining a wireless device	1	Good Technology Corporation
	7995730	Method and system for masquerading the identity of a communication device returning a missed call	1	Cox Communication, Inc.
	8005455	Remotely configurable wireless intercom system for an establishment	1	3M Company

No.	Patent No.	Title	No. of Litigations	Owner
	8009636	Method and apparatus for performing an access procedure	1	Interdigital Communications LLC
	8010043	Capacity maximization for a unicast spot beam satellite system	2	Viasat, Inc.
	8012219	System and method for preventing access to data on a compromised remote device	2	Good Technology Corporation
	8014540	Remote control interface for replacement vehicle stereos	2	AAMP of Florida, Inc.
	8014760	Missed telephone call management for a portable multifunction device	3	Apple, Inc.
	8015025	Method and apparatus for remote health monitoring and providing health related information	2	Robert Bosch Healthcare Systems, Inc.
	8019357	System and method for estimating positioning error within a WLAN-based positioning system	1	Skyhook Wireless Inc.
	8031050	System and method for situational location relevant invocable speed reference	1	Motorola Mobility
	8047364	Protective covering for personal electronic device	1	Cardshark, LLC
	8068827	Non-interfering utilization of non-geostationary satellite frequency band for geostationary satellite communication	2	Viasat, Inc.
	8103313	Portable communicator	1	ADC Technology Inc
	8131262	System and method to initiate a mobile data communication utilizing a trigger system	1	m-Qube Inc.
	8135122	System and method for modifying communication information (MCI)	8	NobelBiz, Inc.
	8140667	Method and apparatus for inexpensively monitoring and controlling remotely distributed appliances	1	Mueller International, LLC
	8155679	System and method for peer-to peer advertising between mobile communication devices	6	Blue Calypso, Inc.
	8169992	Uplink scrambling during random access	1	Ericsson, Inc.
	8175632	Kit for establishing and maintaining communications across disparate networks	2	F4W, Inc.
	8184825	Vehicle remote control interface for controlling multiple electronic devices	2	AAMP of Florida, Inc.

No.	Patent No.	Title	No. of Litigations	Owner
	8204561	One piece co-formed exterior hard shell case with an elastomeric liner for mobile electronic devices	1	Speculative Product Design, LLC
	8229455	System and method of gathering and caching WLAN packet information to improve position estimates of a WLAN positioning device	2	Skyhook Wireless Inc.
	RE38838	Monitoring system	1	SunPower Corporation
	RE40479	Wireless spread spectrum ground link-based aircraft data communication system for engine event reporting	1	Harris Corp.
	RE42288	Tracking system for locational tracking of monitored persons	2	Merck Sharp & Dohme Corp.
	RE42671	Emergency facility video-conferencing system	1	B.I. Incorporated
	RE42814	Password protected modular computer method and device	1	International Business Machines Corporation
TOTAL number of operating company litigations			263	

Paper V

Patent Litigation Strategy: Battling on the Boundaries of the Firm

Tom Ewing^{a*}, Marcus Holgersson^a, and Joakim Björkdahl^a

^a *Department of Technology Management and Economics, Chalmers University of Technology, Gothenburg, Sweden*

*Corresponding author: ewingt@chalmers.se

Submission to Research-Technology Management

Overview

Patent litigation has grown more common and more important for technology-based firms. While intellectual property strategy is increasingly seen as an integral part of the business strategy of technology-based firms among both practitioners and scholars, the connection between strategy and patent litigation activities remains largely ignored. Despite the high impact of patent litigation on firms, only limited efforts have been undertaken to examine patent litigation from a strategic firm perspective. In this article we seek to understand patent litigation as a strategic activity for plaintiffs—one that ultimately impacts the boundaries of the firm. The study draws on data from four recent well-known patent litigation cases to understand patent litigation strategy and the types of decisions that leaders of firms need to make before and during litigations.

Keywords: Appropriability, Business model, Intellectual property strategy, Patent litigation, Technology management

Biographical note

Tom Ewing, J.D., Lic. in Industrial Management & Economics (PhD pending), M.S., M.A., has been a commercial lawyer and intellectual property consultant for 25 years. His research focuses on intellectual asset commercialization and intellectual property strategy. His work is published in journals such as the Stanford Technology Law Review and Hastings Science and Technology Law Journal. He has also authored training courses for the UN's World Intellectual Property Organization, translated into six languages.

Marcus Holgersson is Associate Professor of Intellectual Property Management and Vice Head of the Department of Technology Management and Economics at Chalmers University of Technology, Sweden. His research and teaching focuses on technology and innovation management in general, with a particular focus on innovation ecosystems and intellectual property strategy. His work is published in journals such as California Management Review, Long Range Planning, Research-Technology Management, and Technovation.

Joakim Björkdahl is Professor of Strategic Management and Innovation and Head of the Department of Technology Management and Economics at Chalmers University of Technology, Sweden. His research focuses on strategy, business models and innovation, with a particular focus on digitalization and business transformation. His work is published in journals such as Long Range Planning, Research Policy, Industrial and Corporate Change and California Management Review.

Funding details

Marcus Holgersson acknowledges the support of the Jan Wallander and Tom Hedelius foundation and the Tore Browaldh foundation (Grant No. P20-0286).

1. Introduction

Patent strategy has become a central component of technology-based firm strategies (Somaya 2012). Much research has focused on why firms patent (Blind et al. 2006; Holgersson 2013), how they are used (de Rassenfosse 2012), and how patent strategy links to general firm strategy (Somaya 2012; Teece 2018; Holgersson et al. 2018; Gassmann et al. 2021). While these areas are important, the only legal right provided by patents is the right to sue others for infringement. Given that litigation offers the sole tool for enforcing patents, and thereby controlling important technological resources within the firm, the management of this tool seems a worthy object for firm mastery. From a resource-based view of the firm (e.g., Penrose 1959; Barney 1991) patent litigation is core to strategy and to the boundaries of the firm since it is a battle to control which technological resources can be denied to those outside the firm. However, despite its importance, relatively little research has examined strategic aspects of patent litigation (for exceptions, see, e.g., Golden 2014; Somaya 2016).¹ Typically research on the management and strategies of intellectual property see litigation decisions as a final step or threat that enables other types of management of patents, and has not delved deeper into the management of the only government right conveyed by patents—infringement litigation.

Patent litigations provide a public window into the actual value and function of patents (Lanjouw and Schankerman 2001; Lemley and Shapiro 2005; Galasso and Schankerman 2015). Consultants sometimes use snazzy terms to describe the commercial possibilities of patents, and indeed research has found that patents fulfill several functions for technology-based firms (Blind et al. 2006; de Rassenfosse 2012; Holgersson 2013). But no matter how used or how described, a patent only enables control of its claims, and patent owners enforce their patent rights through litigations that incur up to \$12.8 billion annually in costs to alleged infringers (Bessen et al. 2018).

This article aims to develop our understanding of patent litigation as a strategic activity. We are specifically interested in exploring how decisions within patent litigation relate to the plaintiff's commercial setting, for example, in terms of its strategy and business model. The study draws on four well-known patent litigation cases and the involved managerial decisions.

2. Patents and patent litigation

In recent decades legal, economic, and management scholars have explored an area loosely termed “patent strategy,” focusing on how firms use patents to aid overall firm success (Reitzig 2007; Cho et al. 2018). A firm's patent strategy guides activities such as rights creation, rights licensing, and rights enforcement (Somaya 2012; Agostini et al. 2022). Patent rights, which convey private value (Mann and Sager 2007), arise from national laws with enforcement by national courts. Patent litigations involve tangled webs of legal issues, concerning matters such as the legal scope of patent claims, the legal description of the defendant's products, the

¹ Some further progress has been made in understanding litigations from a management perspective (*see, e.g.,* Chih-Yi 2021), suggesting that managers identify and explicate the conditions under which patent-based actions may enhance or detract from firm performance, while other researchers still comment that additional research should be done (*see, e.g.,* Grzegorzczak 2020).

relevant prior art for patent validity determinations, and complex damage calculations (Lemley and Shapiro 2005; Ewing and Feldman 2012; Granstrand and Holgersson 2014; Menell et al. 2017). For this article, it is sufficient to state that a patent is a legal right that allows its owner to sue others for making, using, importing, offering to sell, and/or selling, a product/service described by the patent's claims (sentence-like statements marking the patent's scope) for up to 20 years.

While patents may erect competitive barriers, they carry distinct uncertainties and limitations (Teece 2000; Lemley and Shapiro 2005; Anderson and Menell 2019). Even an issued patent may be invalid, and patent claims are often easy to invent around (Mansfield et al. 1981; Heger and Zaby 2018). Legal uncertainties may be resolved years after a patent is granted, typically during litigation (Linden and Somaya 2003). Consequently, patent protection is effectively uncertain (Cohen et al. 2000).

Enforcing a patent raises a host of issues, including expense, time, and disruption (Bhagat et al. 1994; Encaoua and Lefouili 2005; Allison et al. 2013). Accordingly, a patent does not engender exclusionary rights as much as a right to pursue exclusion legally (Shapiro 2003), and firms need to manage litigation uncertainties just as firms manage uncertainties in other areas (see, e.g., Niiniluoto 1993; Aristodemou et al. 2020).

Somaya has developed a typology that links firms' patent uses and patent litigation to the commercial context. The typology includes proprietary, leveraging, and defensive strategies (Somaya 2012). Proprietary and leveraging strategies involve affirmative patent assertions—which we focus on here—while defensive strategies respond to proprietary and/or leveraging assertions by others.

In a proprietary strategy, a firm asserts patents to stop imitation of patent-protected products and services (Lippman and Rumelt 1982; Rumelt 1984; Chen and Jing 2017). Patents here protect the key technical features that provide competitive advantages and market opportunities (Stefanadis 1997; Teece 2000). Injunctions and lost profits damages comprise key remedies from proprietary strategies.

In a leveraging strategy, a firm asserts patents to collect rents. Thus, leveraging is directly lucrative rather than supporting product and service sales like proprietary strategies. A patent's exclusionary power drives leveraging strategies (Lemley and Myhrvold 2007; Ewing and Feldman 2012). Firms with strategies for deriving all their revenues from leveraging patents are often termed "Patent assertion entities" (PAEs) (Reitzig et al. 2007; Ewing and Feldman 2012).

A defensive strategy guards a firm's freedom to commercialize products without holdup from third-party competitor patents. Firms here employ their patents as counterclaims to thwart proprietary or leveraging patent assertions by competitors. A defensive strategy might appear passive, but the strategy can be aggressively employed by firms holding substantial patent

arsenals, potentially providing them a *quasi* freedom to operate.² Conventional defensive strategies have also been supplemented by various market solutions³ that provide group defenses against specific patents and at times even selling patents for application as counterclaims in a litigation (see, e.g., Ewing 2012). While defensive strategies are highly relevant, we in this article focus on the more proactive proprietary and leveraging strategies.

While Somaya's typology helps us understand the rationale of patent litigation in broad commercial contexts, it does not necessarily explain the design of a specific patent litigation given its unique context. Patent litigation strategies, both before and during litigations, may be conceptualized as a form of design that iteratively develops the litigation at the interface between firms and their respective contextual environments (see, e.g., Simon 1996, Romme 2016; Berglund et al. 2018). Patent litigation strategy here refers to how firms employ patents in litigation to seize or magnify competitive advantage⁴ (see, e.g., Porter 1980; Wernerfelt 1984; Barney 1991; Reitzig and Sorenson 2013).

3. Context and method

This article examines four recent US patent litigations: *Akamai v. Limelight*,⁵ *Apple v. Samsung*,⁶ *Ericsson v. TCL*,⁷ and *VirnetX v. Apple*.⁸ While the patents differ, all firms reside in the information and communication technology (ICT) industry. Focusing on a single industry allows us to exclude the differences that may arise from one industry to another (Lemley 2015). These four cases were chosen because: (1) each case offered substantial monetary damages, suggesting that the firms took their litigation management decisions seriously; (2) each litigation passed through the trial and appeals processes, suggesting that the issues in each case were hard fought by defendants, well-considered by the courts, and essentially free of "Priest-Klein selection bias"⁹; (3) each plaintiff firm had previously filed patent infringement litigations, suggesting that the firms understood litigation management; and (4) each plaintiff firm had asserted the same patents in other litigations, suggesting that firms knew the relative strengths of the asserted patents. More importantly, each case: (5) suffered at least one adverse judicial decision during the litigation that would have ended the litigation had the firm not determined to continue; and (6) represents not an isolated, one-off event but an exemplar of a customized firm patent litigation strategy in service to a broader commercial strategy.

² Without suggesting that Samsung employs this strategy, the firm holds 172,548 US patents and has been involved in more than 3,000 patent litigations; has been plaintiff in only 93 patent cases but appears to have filed counterclaims in 766 patent litigations, according to USPTO and US Pacer court records.

³ See, e.g., RPX, <https://www.rpxcorp.com/>, site last visited 2021-08-21.

⁴ These strategies may arise from either evolutionary developments (see, e.g., Baum and McKelvey 1999; Løvas and Ghoshal 2000; Zollo and Winter 2002) or from the so-called process school of strategy (see, e.g., Bower, 1970; Burgelman 1983, 1994; Mintzberg and Waters, 1985; Noda and Bower 1996; Huy 2011).

⁵ *Akamai Technologies, Inc. et al v. Limelight Networks, Inc.* (Mass. District Court, 2006).

⁶ *Apple v. Samsung* comprises two cases in the US: *Apple Inc., v. Samsung Electronics Co., Ltd., et al.* (ND Cal.), and *Apple Inc., v. Samsung Electronics Co., Ltd., et al.* (ND Cal.).

⁷ *Ericsson Inc., Telefonaktiebolaget LM Ericsson v. TCL Communication Technology Holdings, et al.*, (ED Tex).

⁸ The two VirnetX litigations against Apple are: *VirnetX Inc. v. Apple, Inc.* (ED Tex) and *VirnetX Inc. v. Apple, Inc.* (ED Tex).

⁹ Priest-Klein selection bias is a controversial theory that cases are selected not on the merits themselves but on uncertainty about how those merits will be resolved. See, Priest and Klein 1984, but see also, Allison 2016.

Consequently, (7) each case represents years of management decisions. Finally, (8) we selected these four cases to explore variation within proprietary (Akamai and Apple) and leveraging (Ericsson and VirnetX) strategies.

As noted, patent litigation strategies are one of the least studied areas in patent strategy (Somaya 2016). We particularly wanted to study litigations in a wider context. These litigations provided an enormous amount of highly relevant data not only about their trials but about their wider contexts (see, e.g., Lanjouw and Schankerman 2001; Galasso and Schankerman 2015).

Data collected comprised all non-sealed documents from these four trials with additional data gathered from related litigations and appeals cases. The empirical base of the four litigation cases comprises data from the litigation cases themselves, amounting to well over 2,000 pages per case at the trial level, several hundred additional pages at the appellate level, patent data, and other data, including research articles, journal articles, annual reports, press releases, and complementary litigation statistics, to provide appropriate data and maximize opportunities for triangulation (Jick 1979; Langley 1999). Based on the data we conducted within-case analysis for each case to understand the contextual dependencies and the decisions made in the litigations. This was followed up by cross-case analysis to find similarities and commonalities in firm responses.

4. Four patent litigation cases

In this section we will describe four cases of patent litigation and their strategic connections. As noted, the four cases spotlight variation within proprietary and leveraging strategies. Akamai applied proprietary patent litigation as a tool for attritting competitors and sometimes acquiring them. Apple employed proprietary patent litigation to supplement its brand strengths for protecting competitive advantage. Ericsson applied patent litigation as a tool for leveraging standard essential patents (SEPs) and to indicate its determination to a wider community of prospective licensees. Leidos expanded its firm boundaries by employing VirnetX as an alter ego for leveraging lucrative patents that were not core to its products.

4.1 *Akamai Technologies v. Limelight Networks*

Akamai is the world's leading provider of Content Delivery Network (CDN) services. The commercial Internet was embryonic when Akamai emerged from MIT. By 2016, the firm owned more than 200,000 servers deployed in some 1,600 networks in 131 countries.¹⁰ This case concerns Akamai's lengthy infringement litigation against Limelight.

Akamai has been a patent litigation plaintiff nearly every year of its existence, as it grew from a start-up to nearly \$3 billion in annual revenue. As an MIT spinout, Akamai received exclusive licenses to key MIT patents used in all of its lawsuits (see, e.g., Leiponen and Byma 2009). Akamai filed its first patent infringement lawsuit in 2000, suing Digital Island in a

¹⁰ Akamai Annual Report, 2016.

litigation that gave Akamai a \$30M victory and removed Digital Island¹¹ as a direct competitor.¹² Akamai's next primary competitor became Speedera, which Akamai subsequently sued for patent infringement. In March 2005, with the litigation still ongoing, Akamai acquired Speedera. Table-1 collects key events in Akamai's history. A general observation is that Akamai's litigations allowed it to seize opportunities from competitors, push them aside and sometimes acquired them to grow its market share. Akamai resolutely pursued its strategy, and its willingness to settle related to acquisition of the defendants.

Year	Company	Akamai Action
2000	Digital Island (later renamed Cable & Wireless)	Patent infringement litigation, ended in 2004 with Cable & Wireless bankruptcy, following \$30M judgment for Akamai
2000	Network24 Communications Inc.	Acquired for \$200M
2000	InterVU	Acquired for \$2.8B in stock
2000	CallTheShots Inc.	Acquired for \$6M
2002	Speedera	Patent infringement litigation
2003	Speedera	Patent infringement litigation
2005	Speedera	Acquired for 12 million shares of Akamai common stock, growing Akamai's customer base by 22%, ended litigation
2006	Limelight	Patent infringement litigation launched, ending in 2016 with \$40M judgment
2006	Nine Systems	Acquired for 3.1 million shares of Akamai stock and \$8 million
2007	Netli	Acquired for 3.2 million shares of Akamai common stock
2007	Red Swoosh	Acquired for \$15 million
2010	Cotendo	Patent infringement litigation
2014	Prolexic	Acquired for \$400M
2015	Xerocole, Octoshape, Bloxx	Acquired for \$140M in total
2016	Limelight	Patent infringement litigation filed
2016	Concord Systems, & Soha Systems, & Cyberfend	Acquired for \$100M in total

Table 1. Key Events in Akamai's History

After Speedera, Limelight became Akamai's main competitor. By 2006, Limelight was gaining on Akamai's technical lead, market recognized by \$130M in investment¹³ and an impressive client list.

Guided by Akamai's prior litigations, Limelight believed it had designed around Akamai's patents. The design-around concerned the customer performing content tagging steps and not Limelight. This case motivated the US Supreme Court to clarify legal precedent regarding this design-around.

Within a year of closing the Speedera acquisition, Akamai sued Limelight for infringement. Limelight's 2017 annual report noted that a permanent injunction for patent infringement could prevent Limelight from operating its business, adding that the firm found the litigation

¹¹ Later acquired by Cable & Wireless plc.

¹² Cable & Wireless Annual Report, 2003.

¹³ Beyers, Tim. Caught Up in the Limelight, *Motley Fool*, 2 Nov. 2006.

“expensive, time consuming and a distraction to our management in operating our business.” In the same year, Akamai reported that its revenue had doubled over the previous year.

In February 2008, a jury found that Limelight infringed Akamai’s patents and awarded \$45.5 million in damages. Akamai planned to seek a permanent injunction against Limelight, but shortly after the verdict a CAFC¹⁴ decision in another case upended the legal theories used by Akamai, compelling the trial judge to reverse the verdict.

Akamai decided to appeal the ruling rather than end the case. In 2012, a three-judge CAFC panel affirmed the trial court. Akamai next sought an *en banc* appeal to the CAFC, which reversed the decision, finding for Akamai. Limelight’s stock fell by 23% following the opinion.¹⁵

Limelight appealed to the US Supreme Court and publicly expressed an adamant belief about its case.¹⁶ The Supreme Court reversed the CAFC but suggested a way for the court to rule in Akamai’s favor. The CAFC subsequently found that Limelight’s directions to customers proved direct infringement, reinstating the original verdict. In August 2016, Limelight concluded a \$54 million license agreement with Akamai.

The protracted Limelight case eventually won Akamai a \$40 million judgment and a \$54 million license. Akamai’s determination to stay the course despite major litigation defeats ensured its ultimate success, cementing Akamai at the top of its industry and frustrating potential market entrants.

4.2 *Apple, Inc. v. Samsung*

This case concerns Apple’s litigation against its smartphone competitor Samsung. For much of its 45-year history, Apple focused on developing an iconic brand reserving its patents for defensive roles.

Until the late 2000s, Apple had never been a patent litigation plaintiff, employing its patents only defensively. In the late 2000s, Apple’s strategy changed to embrace proprietary strategies in response to exogenous market changes. This strategic shift coincided endogenously with Steve Jobs’ waning influence and Tim Cook’s new management team.

In the late 2000s, Apple unleashed its patents and trademarks to drive accessory manufacturers into Apple’s authorized accessory program.¹⁷ As shown in Table-2, these litigations represent Apple’s first proprietary patent use.

¹⁴ The US Court of Appeals for the Federal Circuit (CAFC) has exclusive jurisdiction over patent appeals.

¹⁵ Chung, Andrew. U.S. court revives \$45 million patent verdict against Limelight, *Reuters*, 13 Aug. 13, 2015.

¹⁶ Limelight press release, Nov. 23, 2015.

¹⁷ Apple Computer Inc., annual report, 2009.

Year	Defendant
2008	Atico International USA Inc.
2009	Media Solutions Holdings LLC
2011	Brilliant Store, Inc. et al.
2011	Eforcity Corporation et al.
2011	Sanho Corporation

Table 2. Apple Proprietary Litigations

Apple's iPhone fundamentally changed the mobile telephony market and its success encouraged competition. When Samsung released its Galaxy-S smartphone line in March 2010, it directly challenged Apple's iPhone. Samsung internal documents boasted that it was moving from "a fast follower status vis-à-vis Apple to becoming a challenger."¹⁸ In April 2011, Apple sued Samsung for patent infringement. Apple later amended its complaint to include additional patents. In Feb. 2012, Apple filed a second lawsuit against Samsung alleging infringement of eight utility patents. By July 2012, the two firms were embroiled in more than 50 lawsuits worldwide.

After a protracted battle, the jury in the first lawsuit awarded Apple \$1 billion in damages. Following appeals to the CAFC, a subsequent jury lowered the damages to \$290 million. Applying a Supreme Court decision, the court set final damages at \$539 million. In the second litigation, Apple received just \$119.6 million in damages, a small fraction of the \$2 billion in damages it sought.¹⁹ While Apple collected approximately \$650 million in the lawsuits, it did not obtain an injunction against Samsung. The litigations barely dented Samsung, now established as Apple's main smartphone market rival, which illustrates that the outcome of a litigation is not always easy to simply classify as a win or a loss. Massive damages may be seen as a huge success in a leveraging strategy but may be less relevant in some proprietary strategies where blocking competitors is the main objective.

4.3 *Ericsson v. TCL*

This case concerns Ericsson's patent litigation against electronics manufacturer TCL, one battle in an overall licensing campaign comprising both SEPs and implementation patents.

The smartphone era opened new licensing opportunities for Ericsson, although these licensees have increasingly pushed back against licensing terms. At times, the disputes effectively compel courts to draft FRAND-compliant SEP licenses (FRAND = Fair, Reasonable, And Non-Discriminatory).

Ericsson's SEP dispute with TCL illustrates the complexities of FRAND licensing. While the licensors have historically maintained information asymmetry over licensees, this

¹⁸ Noted in *Apple Inc., v. Samsung Electronics*, CAFC, No. 2014-1802, 17 Sept. 2015.

¹⁹ Levine, Dan. *US Jury Orders Samsung to Pay Apple \$120 million*. Reuters, 3 May 2014.

asymmetry complicates FRAND licensing. In March 2014, after more than six years of negotiation, TCL sued Ericsson, arguing that Ericsson's licensing offers were not FRAND.²⁰ The court found against Ericsson and imposed the terms for a FRAND license. Ericsson appealed the decision to the CAFC, which overturned the trial court. Before a retrial could begin, the parties comprehensively settled their dispute in July 2021, ending years of litigation in a day.

In January 2015, with their SEP dispute ongoing, Ericsson sued TCL for infringing five non-SEP implementation patents. TCL sought *inter partes* review of patent validity at the USPTO's Patent Trial and Review Board (PTAB), an often-favorable defendant venue.²¹ PTAB subsequently invalidated all but one of Ericsson's patents.

Ericsson's surviving patent proved TCL's infringement at trial, and the jury awarded Ericsson \$75 million in actual damages with \$25 million for willful infringement. TCL filed a post-trial motion to set aside the jury's verdict, arguing that the damage award was inappropriately calculated and that Ericsson had confused the jury. The trial judge initially accepted TCL's request but later complained that TCL's attorneys had poorly rebutted Ericsson's damages theory.

TCL appealed the decision to the CAFC, which invalidated the final Ericsson patent in April 2020 under the *Alice*²² decision. TCL obtained a court-ordered reimbursement of \$2.4 million in legal expenses. However, the comprehensive settlement between Ericsson and TCL in July 2021 also included this litigation.

The changing fortunes of Ericsson's SEP and implementation cases illustrate the unpredictable nature of litigation and its management complexities, including when to seek settlement. A large licensing campaign includes greater complexities and uncertainties where the results of high stakes litigations can flip quickly. For SEPs specifically, the case shows how Ericsson's management added patent infringement litigation involving non-SEPs as a tool for driving its SEP leveraging strategy.

4.4 *VirnetX (Leidos) v. Apple*

Leidos is a Fortune 500 firm that provides technical support to US intelligence agencies. This case concerns Leidos' patent assertions against Apple via VirnetX, a firm alter ego.

In the early 2000s, Leidos realized that it held a lucrative patent collection²³ (cf. Rivette and Kline 2000). Leidos decided that leveraging the patents itself would create a management distraction. In assessing its options, Leidos paid a litigation team led by Lucy Koh, later trial judge in *Apple v. Samsung*, nearly \$500,000 to study Microsoft's infringement of the patents.²⁴

²⁰ Judicial findings, *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, 8 Nov. 2017.

²¹ Shandler, Brent. *The Hon. Randall R. Rader on 'The Future of the Patent System'*, AIPPI News, 22 May 2017.

²² *Alice Corporation Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208 (2014).

²³ VirnetX, Annual Report, 2008.

²⁴ *Id.*

Leidos opted to leverage the patents in a third-party arrangement known as patent privateering (cf. Ewing 2012) and sold the patents to a small firm named VirnetX. Through various patent assertions, VirnetX has already returned \$300 million to Leidos, according to Leidos' annual reports.

VirnetX collected \$220M in two judgments against Microsoft, \$430M in one judgment against Apple and several millions in other licenses and settlements. VirnetX's victories are offset by \$142M in legal expenses and the royalties paid to Leidos.²⁵ VirnetX has signed settlement agreements with many firms but only by applying litigation leverage.

VirnetX has been awarded nearly \$1 billion in damages against Apple in two litigations, known as "Apple I" and "Apple II." Apple appealed the decisions and attacked VirnetX's patents at the PTAB. VirnetX management reports that the appeals process is distracting and expensive.²⁶

In August 2010, VirnetX sued four firms for infringing the same patents employed against Microsoft. Two of the defendants, Aastra and NEC, licensed the patents. A jury found Cisco not guilty. In November 2012, a jury awarded VirnetX \$368 million for Apple's infringement by its FaceTime and VPN products.²⁷ Apple appealed the judgment. In September 2014, the CAFC confirmed the infringement ruling but vacated the damages award. In September 2016, a jury awarded VirnetX \$302 million for Apple's infringement. The trial judge found Apple guilty of willful infringement and enhanced the damages to a final judgment of \$454 million. Apple appealed to the CAFC again. In January 2019, the CAFC affirmed the trial court's judgment. After the trial court's verdict, the PTAB invalidated two of VirnetX's patents which the trial court had previously found valid. The CAFC found the patents "valid" for the Apple case since the trial court had tried the validity issue before the PTAB decision. Apple unsuccessfully appealed this decision to the US Supreme Court. VirnetX confirmed in March 2020 that Apple had paid it after 10 years of litigation.

The Apple II case began in November 2012 when VirnetX sued Apple using the Apple I case patents but for infringing different Apple products. In August 2018, the trial court affirmed a judgment against Apple of \$595.9 million and a running royalty against the Apple products. Apple appealed this judgment. In November 2019, a CAFC panel affirmed the infringement finding for two patents but reversed the infringement finding on two other patents. The CAFC instructed the trial court to hold another damages trial, which subsequently awarded \$503 million to VirnetX. In Jan. 2021, the parties agreed that with pre-judgment interest the damage award would be \$578.6 million. Apple appealed the retrial verdict to the CAFC which will hear arguments sometime in 2022. While VirnetX's judgment against Apple is uncertain, VirnetX's litigations allowed Leidos to leverage its patents with limited risk.

²⁵ VirnetX annual reports, 2008-2018.

²⁶ VirnetX annual report, 2018.

²⁷ Opinion, *VirnetX v. Apple Inc.*, CAFC, 22 Nov. 2019.

5. Implications for leaders of technology firms

Based on our cases we can make some general observations of relevance to leaders of technology-based firms. First, and maybe most importantly, patent litigation is not a uniform activity without management involvement. On the contrary, all our cases illustrate that high level management decisions with significant potential consequences arise throughout litigations. As shown in Table-3, the cases can be filtered into two broad categories—*proprietary* (Akamai, Apple) and *leveraging* (Ericsson, VirnetX), but still with multiple differences within categories impacting managerial decisions. Akamai, and Leidos/VirnetX attacked competitors sequentially (see, e.g., Bel 2013). Ericsson’s and Apple’s respective commercial settings compelled multiple concurrent campaigns worldwide with the outcome of one case potentially impacting others. Ericsson’s global campaigns involve the same SEPs, which explains why Ericsson doggedly pursued TCL.

Firm	Litigation Time Frame	Patents Asserted	Use Case	Direct Reward	Cost
Akamai	2006-2016	3	Proprietary	\$54M USD	~ \$15M USD
Apple	2011-2019	26	Proprietary	\$650M USD	~ \$40M USD
Ericsson	2015-2021	5	Leveraging	-\$3M USD	~ \$9M USD
VirnetX	2007-2022	4	Leveraging	\$1100M USD	\$143M USD

Table 3. Case Summary

Second, patent litigation radiates uncertainty, it is costly and time-consuming, and it comes with high stakes. Our plaintiff firms did not enjoy uniform successes, and their litigations incurred differing costs and benefits. Firms never have *a priori* information about the success of a prospective litigation decision (Pisano 2006). Hence, patent litigations should be designed to manage uncertainties and maximize opportunities. Even so, outcomes are highly uncertain—which is illustrated by different decisions by different courts in several rounds of appeals—and uncertainties also include legal developments, such as in the Akamai case. Thus, the actual power of a patent portfolio is uncertain and may be displayed first after years or decades of building it, like in the cases of Ericsson and Apple.

Third, patent litigations directly relate to the plaintiff’s broader business strategy. Considering the military roots of strategy as a subject area (e.g., Denning 2019), it is surprising how little interest one of the main “battlegrounds” for technology firms—patent litigation—has received from both management scholars and practitioners. Like classical warfare, patent litigation eventually defines the boundaries of the actors involved, and thus it directly relates to firm strategy from a resource-based perspective (Penrose 1959; Barney 1991). One area of specific relevance when strategically analyzing patent litigation is how it impacts other relationships in the network or ecosystem of actors that most firms operate in (Adner 2006; Holgersson et al. 2018). For some cases, the litigation’s relationships to third-parties were central to the opportunities, risks, and decision-making in the litigations. For example, Ericsson risked invalidity of patents generating sizeable revenue streams from other licensees when it

sued TCL. On the other hand, if Ericsson would not have acted forcefully against TCL, it would have sent signals to other actors that Ericsson's lucrative licensing business was faltering.

Given these general observations, what can we learn about managerial decision-making in patent litigation? First, the managerial decisions that leaders need to make span multiple dimensions, including (1) whether to initiate litigation, (2) if multiple litigations should be used to reinforce each other, such as employed by Ericsson and Apple, (3) whether to litigate internally or to use privateering, such as in the VirnetX/Leidos case, (4) where to litigate (5) with what patents, (6) how much resources to spend (burn rate) on litigation, (7) what type of outcome to seek: injunctions, damages, and settlements, and (8) whether to appeal an adverse decision and keep the litigation alive.

Second, the actual decisions in each dimension must be made while considering the litigation's commercial setting. Here, our four cases helped explore the complexity of decision-making in proprietary and leveraging strategies, and their interaction with the commercial settings. In the first case, Akamai pursued a proprietary strategy, with the objective to support its growth, including by acquiring defendants in the process. In the second case, Apple's main objective was to protect a hugely successful and established business. Patent litigation was therefore matched with other types of litigations, including trademark and trade dress litigation. Injunction was the primary objective to stall Samsung's fast paced catch-up process, and settlements are less likely to be accepted. In the third case, Ericsson persisted through several defeats and appeals, showcasing the importance for the firm to signal its determination to continue its lucrative SEP licensing business. Third-party implications are central in such a case, as discussed above. Consequently, Ericsson decided to put extra pressure on TCL by adding litigations involving non-SEP patents. Finally, the case of VirnetX illustrates how a firm (Leidos) can utilize privateering to commercialize patents that are not core to its primary business. In such a case, strategy implications are so curtailed that the firm can surrender litigation control and let a privateer (VirnetX) make as much money as possible from the assets, based on a relatively simple contract with incentives.

To sum up, patent litigation is a key strategic activity which mandates the attention of firm leaders. Patent litigation is a matter of design—involving multiple high-level decisions—and this design must be aligned with the commercial setting, including the business model. When properly integrated with strategy, patent litigation—or at least readiness for patent litigation—is a powerful source of competitive advantage.

References

- Adner, R. 2006. Match your innovation strategy to your innovation ecosystem. *Harvard Business Review*, 84(4), 98-107.
- Agostini, L., A. Nosella, M. B. Teshome, and Holgersson, M. 2022. What is patent management? The purification and validation of an integrated measurement scale. *IEEE Transactions on Engineering Management*, Forthcoming.
- Allison, J. R., M. A. Lemley, and D.L. Schwartz. 2013. Understanding the realities of modern patent litigation. *Texas Law Review*, 92(1), 1769-1802.
- Allison, J. R., M. A. Lemley, and D. L. Schwartz. 2017. How often do non-practicing entities win patent suits?. *Berkeley Technology Law Journal*, 32(1), 237-310.
- Anderson, J. J., and P. S. Menell. 2019. Empirical studies of claim construction. *Research Handbook on the Economics of Intellectual Property Law*. Edward Elgar Publishing.
- Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Baum, J. A., and B. McKelvey. 1999. Whole-part coevolutionary competition in organizations. *Variations in organization science*, 113-135.
- Bel, R. 2013. Access, veto, and ownership in the theory of the firm. *Journal of Law, Economics, and Organization*, 29(4), 871-897.
- Berglund, H., D. Dimov, and K. Wennberg. 2018. Beyond bridging rigor and relevance: The three-body problem in entrepreneurship. *Journal of Business Venturing Insights*, 9(5), 87-91.
- Bessen, J., P. Neuhäusler, J. Turner, and J. Williams. 2018. *Trends in Private Patent Costs and Rents for Publicly-Traded United States Firms*, Boston Univ. School of Law, Public Law Research Paper No. 13-24, electronic copy available at: <https://ssrn.com/abstract=2278255>.
- Bhagat, S., J. A. Brickley J.A., and J. L. Coles. 1994. The costs of inefficient bargaining and financial distress: evidence from corporate lawsuits. *Journal of Financial Economics*, 35(2), 221-247.
- Blind, K., J. Edler, R. Frietsch, and U. Schmoch. 2006. Motives to patent: Empirical evidence from Germany. *Research Policy*, 35(5), 655-672.
- Bower, J. L. 1973. *Managing the Resource Allocation Process* (Boston, MA: Graduate School of Business Administration, Harvard University, 1970); H. Mintzberg, *The Nature of Managerial Work*. *The Nature of Managerial Work*, 195-206.
- Burgelman, R. A. 1983. A model of the interaction of strategic behavior, corporate context, and the concept of strategy. *Academy of Management Review*, 8(1), 61-70.
- Burgelman, R. A. 1994. Fading memories: A process theory of strategic business exit in dynamic environments. *Administrative Science Quarterly*, 39(1), 24-56.
- Chen, S., and Y. Jing. 2017. The Double Sword Role of Proprietary Patent Strategy on Performance and Institutional Contingency. In *Academy of Management Proceedings* (Vol.

2017, No. 1, p. 13556). Briarcliff Manor, NY 10510: Academy of Management, doi: 10.5465/AMBPP.2017.13556abstract.

Chih-Yi, S. and L. Bou-Wen. 2021. Attack and defense in patent-based competition: A new paradigm of strategic decision-making in the era of the fourth industrial revolution. *Technological Forecasting and Social Change*, 167, 120670.

Cho, Y., S. Kirkewoog, and T. U. Daim. 2018. Managing strategic intellectual property assets in the fuzzy front end of new product development process. *R&D Management*, 48(3), 354-374.

Cohen, W. M., R. R. Nelson, and J. Walsh. 2000. Protecting their intellectual assets: Appropriability conditions and why U.S. manufacturing firms patent (or not). Working paper, *National Bureau of Economic Research*, Cambridge, MA.

Denning, S. 2019. Revisiting the roots of strategy. *Forbes*, <https://www.forbes.com/sites/stephaniedenning/2020/12/31/revisiting-the-roots-of-strategy/>.

de Rassenfosse, G. 2012. How SMEs exploit their intellectual property assets: evidence from survey data. *Small Business Economics*, 39(2), 437-452.

Encaoua, D. and Y. Lefouili. 2005. Choosing intellectual protection: Imitation, patent strength and licensing. *Annales d'Economie et de Statistique*, 79/80, 241-271.

Ewing, T. and R. Feldman. 2012. The Giants Among Us. *Stanford Technology law Review*, 2012 Stanford Technology law Review 1.

Ewing, T. 2012. Indirect Exploitation of Intellectual Property Rights by Corporations and Investors: IP Privateering and Modern Letters of Marque and Reprisal. *Hastings Science and Technology Law Journal*, 4 Hastings Sci. and Tech. L.J. 1.

Feldman, R., and M. A. Lemley. 2015. Do patent licensing demands mean innovation. *Iowa Law Review*, 101(1), 137.

Galasso, A., and M. Schankerman. 2015. Patents and cumulative innovation: Causal evidence from the courts. *The Quarterly Journal of Economics*, 130(1), 317-369.

Gassmann, O., M.A. Bader and M. J. Thompson. 2021. *Patent management: protecting intellectual property and innovation*. Springer International Publishing.

Golden, J.M. 2014. Litigation in the Middle: The Context of Patent-Infringement Injunctions. *Texas Law Review*, 92(7), 2075-2116.

Granstrand, O., and M. Holgersson. 2014. The challenge of closing open innovation: The intellectual property disassembly problem. *Research-Technology Management*, 57(5), 19-25.

Grzegorczyk, T. 2020. Managing intellectual property: Strategies for patent holders, *Journal of High Technology Management Research*, 31(1), 100374.

Heger, D., and A. K. Zaby. 2018. Patent breadth as effective barrier to market entry. *Economics of Innovation and New Technology*, 27(2), 174-188.

Holgersson, M. 2013. Patent management in entrepreneurial SMEs: a literature review and an empirical study of innovation appropriation, patent propensity, and motives. *R&D Management*, 43(1), 21-36.

- Holgersson, M., O. Granstrand, and M. Bogers. 2018. The evolution of intellectual property strategy in innovation ecosystems: Uncovering complementary and substitute appropriability regimes. *Long Range Planning*, 51(2), 303-319.
- Hurmelinna-Laukkanen, P., and J. Yang. 2022. Distinguishing between appropriability and appropriation: A systematic review and a renewed conceptual framing. *Research Policy*, 51(1), 104417.
- Huy, Q. N. 2011. How middle managers' group-focus emotions and social identities influence strategy implementation. *Strategic Management Journal*, 32(13), 1387-1410.
- Jell, F., J. Henkel, and M. Wallin. 2017. Offensive patent portfolio races. *Long Range Planning*, 50(5), 531-549.
- Jick, T.D. 1979. Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly*, 24(4), 602-611.
- Langley, A. 1999. Strategies for theorizing from process data. *Academy of Management Review*, 24(4), 691-710.
- Lanjouw, J. and M. Schankerman. 2001. Characteristics of patent litigation: A window on competition. *RAND Journal of Economics*, 32(1), 129-151.
- Leiponen, A. and J. Byma. 2009. If you cannot block, you better run: Small firms, cooperative innovation, and appropriation strategies. *Research Policy*, 38(9), 1478-1488.
- Lemley, M.A. and N. Myhrvold. 2007. How to Make a Patent Market. *Hofstra Law Review*, 36, 257-260.
- Lemley, M.A. and C. Shapiro. 2005. Probabilistic patents. *Journal of Economic Perspectives*, 19(2), 75-98.
- Linden, G. and D. Somaya. 2003. System-on-a-chip integration in the semiconductor industry: Industry structure and firm strategies. *Industrial and Corporate Change*, 12(3), 545-576.
- Lippman, S.A. and R. P. Rumelt. 1982. Uncertain imitability: An analysis of interfirm differences in efficiency under competition. *Bell Journal of Economics*, 13(2), 418-438.
- Løvas, B., and Ghoshal, S. 2000. Strategy as guided evolution. *Strategic Management Journal*, 21(9), 875-896.
- Mann, R.J. and T. W. Sager. 2007. Patents, venture capital, and software start-ups. *Research Policy*, 36(2), 193-208.
- Mansfield, E., M. Schwartz, and S. Wagner. 1981. Imitation Costs and Patents: An Empirical Study. *Economic Journal*, 91(364), 907-918.
- Menell, P., M. Lemley, and R. Merges. 2017. *Intellectual Property in the New Technological Age: Volume I: Perspectives, Trade Secrets and Patents*, Clause 8 Publishing.
- Mintzberg, H., and J. A. Waters, J. A. 1985. Of strategies, deliberate and emergent. *Strategic Management Journal*, 6(3), 257-272.
- Niiniluoto, I. 1993. The aim and structure of applied research. *Erkenntnis*, 38(1), 1-21.

- Noda, T., and J. L. Bower. 1996. Strategy making as iterated processes of resource allocation. *Strategic management journal*, 17(S1), 159-192.
- Penrose, E.T. 1959. *The Theory of the Growth of the Firm*. Oxford: Basil Blackwell
- Peteraf, M.A. 1993. The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14(3), 179-191.
- Pisano, G. 2006. Profiting from innovation and the intellectual property revolution. *Research Policy*, 35(8), 1122-1130.
- Pisano, G. and D. Teece. 2007. How to Capture Value from Innovation - Shaping Intellectual Property and Industry Architecture. *California Management Review*, 50(1), 278-296.
- Porter, M. E. 1980. Industry structure and competitive strategy: Keys to profitability. *Financial Analysts Journal*, 36(4), 30-41.
- Priest, G. L. and B. Klein. 1984. The selection of disputes for litigation. *The journal of legal studies*, 13(1), 1-55.
- Reitzig, M., and O. Sorenson. 2013. Biases in the selection stage of bottom-up strategy formulation. *Strategic Management Journal*, 34(7), 782-799.
- Reitzig, M. 2007. How executives can enhance IP strategy and performance. *MIT Sloan Management Review*, 49(1), 37-43.
- Rivette, K.G. and D. Kline. 2000. Discovering new value in intellectual property. *Harvard Business Review*, 78(1), 2-12.
- Romme, G. 2016. *The quest for professionalism: The case of management and entrepreneurship*. Oxford University Press.
- Rumelt, R.P. 1984. Towards a strategic theory of the firm. In R. B. Lamb (Ed.), *Competitive Strategic Management*: 556-570. Englewood Cliffs, NJ: Prentice Hall.
- Shapiro, C. 2003. Antitrust Limits to Patent Settlements. *RAND Journal of Economics*, 34(2), 391-411.
- Simon, H. 1996, *The Sciences of the Artificial*, 3rd ed., MIT Press, Cambridge, MA.
- Somaya, D. 2012. Patent Strategy and Management: An Integrative Review and Research Agenda. *Journal of Management*, 38(4), 1084-1114.
- Somaya, D. 2016. How patent strategy affects the timing and method of patent litigation resolution. *Advances in Strategic Management*, 34, 471-504.
- Stefanadis, C. 1997. Downstream vertical foreclosure and upstream innovation. *Journal of Industrial Economics*, 45(4), 445-456.
- Teece, D.J. 1986. Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy*, 15(6), 285-305.
- Teece, D.J. 2000. *Managing intellectual capital: Organizational, strategic, and policy dimensions*. Oxford: Oxford University Press.
- Teece, D.J. 2018. Profiting from innovation in the digital economy: Enabling technologies, standards, and licensing models in the wireless world. *Research Policy*, 47(8), 1367-1387.

Tietze, F., D. Di Francesco Maesa, and J. Theye. 2020. On-demand IP licensing for the digital economy. Centre for Technology Management working paper series no.6, University of Cambridge. <https://doi.org/10.17863/CAM.62025>.

Wernerfelt, B. 1984. A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.

Zollo, M., and S.G. Winter. 2002. Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, 13(3), 339-351.

PROBING THE LIMITS OF PATENT COMMERCIALIZATION

This thesis explores patent assertion, a complex activity whose mastery requires knowledge, creativity, and financial resources, as well as a colorable infringement case. Patents, government-granted rights controlling access to new inventions, achieved economic significance during the Industrial Revolution.

Patents are tools for securing investments and governing licensing arrangements. Patents may also be used to keep competitors away from patent-protected products and to collect money from infringers. Hostile patent assertions have skyrocketed in recent years. Some researchers claim that laws related to the patent assertion urgently need reform. However, these researchers' complaints are often contradictory, and there is no agreed upon definition of success.

To explore these issues, this thesis investigates patent assertion business models. Since secrecy underpins patent assertion strategies, the thesis benefits from rich secondary data enhanced by a data-chaining technique developed for this research that assembles small pieces of data into larger collections.

This research has discovered that one successful patent assertion business model known as a non-practicing entity ("NPE" or colloquially "patent troll"), represents roughly half of all US patent litigations and has spawned two other business models, the highly capitalized "patent mass aggregator" and the "patent privateer."

The patent privateer, newly discovered in this research, enables firms to attack competitors through specialized NPEs. Patent mass aggregators, firms that spend billions to purchase thousands of patents, have also been investigated and found to comprise service providers to larger firms. These specialized NPEs expand the formal boundaries of the firms employing their services. This research has also explored plaintiff firm management processes during litigation, focusing on commercial contexts driving patent assertion strategies, even after litigants have suffered a major litigation setback.

