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THE VONAGE TRILOGY: A CASE STUDY IN “PATENT BULLYING”

*Ted Sichelman**

ABSTRACT

This Article presents an in-depth case study of a series of infringement suits filed by “patent bullies.” Unlike the oft-discussed “patent trolls”—which typically sell no products or services and perform no R&D—patent bullies are large, established operating companies that threaten or institute costly patent infringement actions of dubious merit against smaller companies, usually in order to suppress competition or garner licensing fees. In an ideal world of high-quality patents and optimal patent licensing and litigation, infringement suits by aggressive incumbents would have a cleansing, almost Darwinian effect. Yet, defects and distortions in patent examination, licensing, and litigation—the very problems that are raised constantly in the context of patent trolls—generally apply with equal and, often, greater force to patent bullies. Nonetheless, patent bullies have scarcely been discussed in the academic literature or popular press, especially in recent years.

This Article examines three patent infringement suits filed by incumbent telecommunications carriers—Sprint, Verizon, and AT&T—against Vonage, then an early-stage company providing consumer telephone services over the Internet. Based on a detailed analysis of the patents-at-issue, prior art, court documents, and news accounts, it shows that the incumbents were able to exploit defects in the patent system in order to prevent disruptive technologies from competing with their outmoded products and services. Because startups like Vonage typically lack the resources to vigorously defend against even weak patent suits, patent bullying can result in severe anticompetitive effects. The incumbents in the Vonage suits achieved their intended result—drastically reducing Vonage’s stock price, severely weakening its position in the market, and

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placing it at the brink of insolvency. This case study demonstrates that further theoretical and empirical study is warranted to assess the full extent of the patent bullying problem.

INTRODUCTION: THE OVERLOOKED PROBLEM OF PATENT BULLYING

In the last ten years or so, academics, the media, the Federal Trade Commission, and the Supreme Court have been fixated on so-called “patent trolls”—loosely, entities and individuals that generate the bulk of their revenue from patent litigation and licensing, but do not make and sell products that embody their patents and that, typically, perform little to no research and development relating to their patents.¹ Yet, the exact problem trolls present to the patent system has remained somewhat elusive.²

Many focus their attention on the non-practicing nature of trolls, exhorting that patentholders that do not sell commercial products embodying their patents are behaving contrary to the goals of the patent system.³

1 Some might characterize individual inventors or small companies that had once performed research and development, but no longer do, as patent trolls. In general, there is a substantial debate over how to define the term “troll,” but all definitions appear to require that a troll not make and sell products (at least in substantial numbers) that embody the patents it owns. See generally 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, 1578 (2009) (noting that “[w]hile definitions vary, [a patent troll] in this Article refers to a corporate patent enforcement entity that neither practices nor seeks to commercialize its inventions”). Focusing on the non-practicing, litigious nature of trolls, many commentators have used “non-practicing entity” (NPE) and “patent assertion entity” (PAE) as less disparaging substitutes. See *id.* at 1573–74 (“Others see the rise of aggressive and opportunistic enforcement of patents by non-practicing entities (‘NPEs’) against established businesses to be the real bane of the patent system.” (footnote omitted)); Christopher Anthony Cotropia, Jay P. Kesan & David L. Schwartz, *Patent Assertion Entities (PAEs) Under the Microscope: An Empirical Investigation of Patent Holders as Litigants* (Ill. Pub. Law & Legal Theory Papers Series, Paper No. 14-17, 2013), available at <http://www.laipla.net/wp-content/uploads/2013/11/CotropiaEtAlStudy.pdf> (proposing a multi-category classification system for PAEs and finding lower numbers of PAE suits in 2010 and 2012 than previously reported in the literature). For the reasons I present below, I think the term “troll” is justified, but only for those NPEs that *abuse* the patent system by exploiting *weak* patents. See *infra* note 17 and accompanying text. In this regard, the current shift in terminology may do more injustice to those NPEs and PAEs that assert strong patents—which I generally view as welfare-enhancing—than retaining the use of the “troll” term.

2 Following the dissemination of this Article online, Mark Lemley and Douglas Melamed offered a trenchant critique of the common rhetoric of patent trolls. See Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117, 2129–45 (2013) (citing an earlier version of this Article) (contending that, in many respects, practicing entities potentially generate more social costs than trolls). However, in contrast to this Article, Lemley and Melamed do not focus their efforts on describing how large practicing entities abuse the patent system by “bullying” smaller practicing entities. Instead, they ground their analysis in a comparison of the activities of practicing entities to those of non-practicing entities. See *id.*

3 See, e.g., Colleen V. Chien, *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, 62 HASTINGS L.J. 297, 328 (2010) (“Patent-assertion entities are focused on the enforcement, rather than the active development or commer-

However, this view is clearly wrong, at least as a descriptive matter, because the Supreme Court has firmly held that “it is the privilege of any owner of property [including patents] to use or not use it, without question of motive.”⁴ Indeed, the most widely accepted explanation of the patent system—the “reward theory”—posits that patents are designed to spur invention and its disclosure in patents to the public, but generally are unnecessary to promote the *commercialization* of inventions.⁵ Instead, reward theorists believe that once inventions are created and disclosed, the market will efficiently yield commercial embodiments of those inventions.⁶ Although there is a strong normative argument that the patent system should actively promote commercialization—and I am squarely in favor of this view—American

cialization of their patents.”); Amy L. Landers, *Let the Games Begin: Incentives to Innovation in the New Economy of Intellectual Property Law*, 46 SANTA CLARA L. REV. 307, 308 (2006) (“A number of organizations that license, but do not commercialize patents, have sprung up with the sole purpose of asserting patents against potential infringers.”). *But cf.* Damien Geradin, Anne Layne-Farrar & A. Jorge Padilla, *Elves or Trolls? The Role of Nonpracticing Patent Owners in the Innovation Economy*, 21 INDUS. & CORP. CHANGE 1, 1–2 (2011) (proposing a business model-neutral policy for analyzing patent licensors).

4 *Cont’l Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 429 (1908) (citation omitted); *see also* *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 393–94 (2006) (“The [district] court’s categorical rule is also in tension with *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, which rejected the contention that a court of equity has no jurisdiction to grant injunctive relief to a patentholder who has unreasonably declined to use the patent.” (citation omitted)). Although lower courts have latched onto Justice Kennedy’s concurrence in *eBay* to deny injunctive relief to a non-practicing patentee, *see, e.g.*, *Commw. Scientific & Indus. Research Org. v. Buffalo Tech. Inc.*, 492 F. Supp. 2d 600, 607–08 (E.D. Tex. 2007), *rev’d on other grounds*, 542 F.3d 1363 (Fed. Cir. 2008), such a patentee is just as entitled to a suitable legal remedy as a practicing entity. *See* Ted Sichelman, *Purging Patent Law of “Private Law” Remedies*, 92 TEX. L. REV. 517, 551–52 (2014). Moreover, although post-*eBay* denials of injunctions to non-practicing entities may be effectuating more of a commercialization-oriented view of patent law, on a theoretical level, Justice Kennedy’s pronouncement is analytically flawed, because he implicitly assumes without basis that non-practicing entities enjoy “undue leverage in negotiations” involving complex technologies while practicing entities do not. *eBay*, 547 U.S. at 396–97 (Kennedy, J., concurring). Whether a patentee is practicing or not, an injunction may suboptimally diminish the social incentives to commercialize, because the patentee can often gain more leverage in negotiations than is attributable to the social value of the patent. *See* Sichelman, *supra*, at 545–52. One might argue that non-practicing entities tend to gain greater “undue” leverage than practicing entities—for example, because they are repeat players and relatively risk-neutral—but these fine distinctions played no role in Justice Kennedy’s conclusory assertions. *eBay*, 547 U.S. at 396–97 (Kennedy, J., concurring).

5 *See* Ted Sichelman, *Commercializing Patents*, 62 STAN. L. REV. 341, 358–62 (2010) (describing the reward theory of patents).

6 *See* Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129, 130 (2004) (contending that there is no need for patent rights to encourage ex post activity, in particular, “further investment in the improvement, maintenance, or commercialization of the product”).

patent law has long shied away from this approach.⁷ Thus, under current law, trolls not commercializing their inventions can scarcely justify the views of those aligned against them.⁸

Another oft-touted criticism of trolls is that they perform little to no research and development (R&D) on their patents.⁹ Yet, this view seems as odd as the commercialization concern. Patents have always been tradable, either through outright sale or licensing,¹⁰ and nobody would argue that only the original inventor should be able to sue for infringement.¹¹

7 See Sichelman, *supra* note 5, at 343–44 (“The dominant ‘reward’ theory of patenting, which undergirds much of today’s law, perceives little to no need to protect risky and costly post-invention development and commercialization efforts.”).

8 Some defendants make a more nuanced argument regarding trolls’ lack of commercial activity—namely, that trolls thwart accused infringers’ efforts to defend against infringement lawsuits by eliminating defendants’ ability to assert infringement counterclaims so as to spur settlement. See WENDY H. SCHACHT & JOHN R. THOMAS, CONG. RESEARCH SERV., RL32996, PATENT REFORM: INNOVATION ISSUES 9 (2005) (“Because patent speculators do not otherwise participate in the marketplace, however, they are immune to such counterclaims.”). But the only *policy* reasons in favor of promoting these kinds of counterclaims would be to lower the social costs of defending against “bad” patents, or simply costs arising from other systemic defects, neither of which is endemic to “patent trolls.” See *infra* notes 19–25 and accompanying text.

9 See David Fagundes, *Property Rhetoric and the Public Domain*, 94 MINN. L. REV. 652, 663 (2010) (“MercExchange was, in popular parlance, a ‘patent troll.’ It did not engage in research or development, but merely acquired large numbers of patents—such as the one at issue in *eBay*—in the hope that one might turn out to be crucial to a big new application, so that MercExchange could threaten the creator of that application with an injunction and extract a juicy settlement.” (footnote omitted)); Ted Sichelman & Stuart J.H. Graham, *Patenting by Entrepreneurs: An Empirical Study*, 17 MICH. TELECOMM. & TECH. L. REV. 111, 119 (2010) (“One kind of small firm licensor is the so-called ‘patent troll,’ usually described as an entity that sells no products and performs no R&D, instead earning its profits through licensing or damages awarded in infringement suits. On a pessimistic view, these sorts of licensors are akin to patent slumlords.” (footnote omitted)); Tina M. Nguyen, Note, *Lowering the Fare: Reducing the Patent Troll’s Ability to Tax the Patent System*, 22 FED. CIR. B.J. 101, 126 (2012) (“[P]atent trolls typically invest little to no money in research and development.”).

10 See 35 U.S.C. § 261 (2012) (“Applications for patent, patents, or any interest therein, shall be assignable in law by an instrument in writing.”); see also *Cutter Labs., Inc. v. Lyophile-Cryochem Corp.*, 179 F.2d 80, 92 (9th Cir. 1949) (“It must be remembered that the patent laws give the patentee a monopoly. He may make, use or sell the patented product, license others, on an exclusive or non-exclusive basis, to do so, authorize the issuance of sublicenses, or assign the patent itself for a consideration. The sole limitation is, that he must not use his legitimate patent monopoly as a means of suppressing competition or acquiring a monopoly outside of the area of monopoly which the patent grants.”); Catherine L. Fisk, *Removing the ‘Fuel of Interest’ from the ‘Fire of Genius’: Law and the Employee-Inventor, 1830–1930*, 65 U. CHI. L. REV. 1127, 1186 (1998) (“By the late nineteenth century . . . the assignability of patents and the enforceability of pre-invention assignment agreements were well-established aspects of the law and business of patent.”).

11 See *Bd. of Trustees of Leland Stanford Junior Univ. v. Roche Molecular Sys.*, 131 S. Ct. 2188, 2195 (2011) (“It is . . . well established that an inventor can assign his rights in an invention to a third party.”).

Although trolls themselves might not perform R&D, the inventors listed on the patents presumably did, so saying that trolls thwart the patent system because they undertake no R&D is not much different from saying GE thwarts the patent system, because only its engineers—who assign their patents to their employer, GE—perform research.¹² Rather, from the perspective of contemporary economics, there is little difference between a vertically integrated entity like GE and an effective joint venture between independent inventors and a troll assignee—indeed, the joint ventures are often more efficient means of producing inventions.¹³

In sum, the two key features of trolls as they are commonly defined—namely, that they do not commercialize their patents and perform little to no R&D—are red herrings when it comes to the problems they create for the patent system, at least on the widely accepted, reward theory of patent law.¹⁴ Rather, the major concern over trolls seems to stem from their single-minded

12 Michael Risch, *Patent Portfolios as Securities*, 63 DUKE L.J. 89, 99 (2013) (“Individuals have long assigned their patents to companies that aggregate them. Usually, such patents come from employees who assign inventions to their employers . . .” (footnote omitted)).

13 See HENRY WILLIAM CHESBROUGH, *OPEN INNOVATION: THE NEW IMPERATIVE FOR CREATING AND PROFITING FROM TECHNOLOGY 1* (2006). Chesbrough defines “open innovation” as

the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. [This paradigm] assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology.

Henry Chesbrough, *Open Innovation: A New Paradigm for Understanding Industrial Innovation*, in *OPEN INNOVATION: RESEARCHING A NEW PARADIGM 1*, 1 (Henry Chesbrough, Wim Vanhaverbeke & Joel West eds., 2006).

14 As noted earlier, if one views the patent system as important to promoting commercialization, then trolls’ failure to make and sell products embodying their patents is certainly a serious problem. See *supra* text accompanying notes 5–7. But only a minority of scholars and judges hold such a view. See Sichelman, *supra* note 5, at 358–62, 393 (describing the widespread “reward” theory of patents, which eschews commercialization of invention as an appropriate aim for the patent system and offering an alternative “commercialization” theory); see also Michael Abramowicz & John Duffy, *Intellectual Property for Market Experimentation*, 83 N.Y.U. L. REV. 337, 408 (2008) (“In general, we believe that the proposed modification of the patent system to allow for some ‘commercialization’ patents holds sufficient promise that it should be considered in cases where the hurdles to commercialization seem particularly daunting.”); F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 707 (2001) (“Any system focused on rewarding inventive effort, when an actual good or service is brought to the market, runs the risk of failing to address the activities that take place after an invention is made but before it can be profitably exploited.” (emphasis omitted)); Giles S. Rich, *The Relation Between Patent Practices and the Anti-Monopoly Laws*, 24 J. PAT. OFF. SOC’Y 159, 177 (1942) (contending that the “aspect of inducement [of the patent laws that] is by far the greatest in practical importance . . . might be called the inducement to risk an attempt to commercialize the invention”).

goal of earning revenue from patent litigation and licensing.¹⁵ This quest for patent-induced profits appears to channel many trolls into aggressively exploiting defects in patent examination, licensing, and litigation in ways that other patentholders often do not.¹⁶ Indeed, on this view, the term “troll” should be limited only to—and is well deserved for—those non-practicing entities that *abuse* the patent system.¹⁷ However, to be certain, *any patentholder can—and many do—take advantage of these systemic defects.*¹⁸

There are at least four serious defects in the patent system. First, although the empirical research is limited, it appears the Patent Office issues many patent claims that are arguably anticipated or obvious in view of prior technology; overly broad given the scope of the patent disclosure; vague, ambiguous, and generally difficult to interpret; and introduced and amended long after the original patent disclosure is filed.¹⁹ Despite the seemingly endless number of “bad” patents, there is a “[p]resumption of validity” that patents are properly granted,²⁰ which makes invalidating them in litigation quite costly—usually a million dollars or more.²¹ Second, patentees and potential infringers face unusually high transaction costs in licens-

15 See Lemley & Melamed, *supra* note 2, at 2170 (“Trolls are opportunists that exploit flaws in the patent system.”); see also Sichelman, *supra* note 5, at 368 (noting that NPEs “tend to exploit litigation and licensing market defects to extract unwarranted rents from commercializers”).

16 James Bessen & Michael J. Meurer, *The Direct Costs from NPE Disputes*, 99 CORNELL L. REV. 387, 413 (2014) (“NPEs have rushed in to exploit failings in the patent system by displacing operating-company plaintiffs because the NPEs can more effectively extract payments from innovators who are targeted as defendants through no fault of their own.”).

17 Cf. Mark A. Lemley & Philip J. Weiser, *Should Property or Liability Rules Govern Information?*, 85 TEX. L. REV. 783, 799 n.77 (2007) (“[W]e believe that the real solution lies not around defining a particular abuser of the patent system, but rather in addressing the system’s flaws that give rise to such abuses.”).

18 See *infra* Part I (exploring the ways in which manufacturing entities exploit defects in the patent system); see also Lemley & Melamed, *supra* note 2, at 2139–44 (describing how infringement suits by trolls can often be more costly than those filed by practicing entities).

19 See Carl Shapiro, *Patent System Reform: Economic Analysis and Critique*, 19 BERKELEY TECH. L.J. 1017, 1018 (2004) (“[D]efects in the patent system are raising costs, imposing uncertainty, and restricting product design choices.”); Sichelman, *supra* note 5, at 344, 356–57, 383–84 (noting that there are “[r]ampant defects in patent examination, licensing, and litigation”).

20 35 U.S.C. § 282 (2012) (“A patent shall be presumed valid.”); see also Microsoft Corp. v. i4i Ltd. P’ship, 131 S. Ct. 2238, 2250–51 (2011) (reaffirming that § 282 not only presumes the validity of every claim of issued patents, but also requires that overcoming that presumption requires clear and convincing evidence).

21 See F. Scott Kieff, *The Case for Preferring Patent-Validity Litigation over Second-Window Review and Gold-Plated Patents: When One Size Doesn’t Fit All, How Could Two Do the Trick?*, 157 U. PA. L. REV. 1937, 1950–51 (2009) (“Under the present system, the high costs of junk patents are directly tied to the legal presumption of validity that is applied to all issued patents, under which the litigant challenging validity bears the burden of proving invalidity under a higher standard of proof than that which usually applies in civil cases.”); see also Jay P. Kesam & Gwendolyn G. Ball, *How Are Patent Cases Resolved? An Empirical Examination of the Adjudication and Settlement of Patent Disputes*, 84 WASH. U. L. REV. 237, 242–43 (2006) (recog-

ing negotiations and litigation, which is fueled in large part by uncertainty and instability in many patent law doctrines.²² The distorting effects of these costs are especially problematic in technological fields for which patent search and analysis are difficult.²³ Third, patentholders can delay assertions of infringement until a relevant market is well developed and the costs of switching to a non-infringing technology are exorbitant.²⁴ Fourth, asymmetric resources, stakes, and levels of risk-aversion between repeat players, such as trolls and large patentholders versus one-time players, such as startup companies, can result in highly skewed litigation outcomes, especially when substantial damages are at stake.²⁵

Although trolls appear to be especially adept at exploiting these defects, they are not the only group doing so. Another important class of patentholders—namely, large practicing entities that often hold many patents—appear to be exploiting the same sorts of defects, and potentially, at much greater rates.²⁶ Just like the trolls, these “patent bullies” take full advantage of weak, uncertain, and vague patents; the high costs of litigation; the ability to delay lawsuits; and their massive resources in order to engage in highly anticompetitive behavior, often against market entrants and startups.²⁷ Specifically, patent bullies assert their patents against entrants to pre-

nizing the difficulties of revoking invalid patents in the face of extremely high litigation costs, running from \$500,000 to \$3 million per suit).

22 See Michael A. Lavine, *Ripples in the Patent Pool: The Impact and Implications of the Evolving Essentiality Analysis*, 4 N.Y.U. J.L. & Bus. 605, 608–09 (2008) (“[A]bsent a patent pooling situation, third parties wishing to use a given patented technology would need to obtain licenses at least from each holder of the blocking patents. This situation could subsequently cause a plethora of problems such as high transaction costs of obtaining licenses, high litigation expenses and hold outs.”).

23 Christina Mulligan & Timothy B. Lee, *Scaling the Patent System*, 68 N.Y.U. ANN. SURV. AM. L. 289, 316 (2012) (“The combination of very high transaction costs (e.g., the costs of locating a patent holder to negotiate a license with) and punitive legal penalties (e.g., an injunction or multiplied damages for infringement) can prevent beneficial uses of property and waste resources by making property use very costly.”).

24 See Sichelman, *supra* note 4, at 541–54 (describing holdup problems not only in the context of NPEs but also for “practicing entities asserting patents on components of complex products [when] switching costs are high”).

25 See Kimberly A. Moore, *Jury Demands: Who’s Asking?*, 17 BERKELEY TECH. L.J. 847, 857 (2002) (“[N]ot all plaintiffs are likely to be repeat players in patent litigation and therefore there may be an information asymmetry.”); cf. Stuart J.H. Graham & Ted Sichelman, *Why Do Start-Ups Patent?*, 23 BERKELEY TECH. L.J. 1063, 1086 (2008) (“The rational would-be infringer, when confronted with a patent held by an individual inventor or a small company with limited resources, would likely be more willing to engage in infringing behavior, calculating that the risk of enforcement is lower.”).

26 See *infra* Part I (describing the exploiting activities of several large practicing entities in filing suit against Vonage in a series of patent infringement suits).

27 See *infra* Part I. In 2008, I defined the term “patent bully” as referring to the abusive practices of large practicing patentholders, typically against smaller entities. See Graham & Sichelman, *supra* note 25, at 1080 (describing “patent bullying”). Since then, “patent bully” has been used in this manner numerous times. See, e.g., Chien, *supra* note 1, at 1588; Lemley & Melamed, *supra* note 2, at 2167; Anup Malani & Jonathan S. Masur, *Raising the*

vent innovative, disruptive technologies from competing with the bullies' outmoded products.²⁸ Additionally, bullies desiring to enter a new market wield their patents against startups that are already well positioned in the market.²⁹ In particular, a patent bully can file an infringement suit to compel a license from a startup to its innovative technology—which, in turn, the bully uses to trounce the startup by leveraging pre-established production capacity, marketing channels, and general goodwill, as well as by engaging in effective predatory pricing by tying the innovative product to the sale of pre-existing products.³⁰ These effects are often compounded by keiretsu-style, cross-licensing agreements among industry incumbents, which provide a veritable zone of freedom to the incumbents, but a wall of impenetrability to entrants.³¹

The remainder of this Article provides an in-depth description and analysis of the patent bullying problem by undertaking a case study of a trilogy of suits filed by incumbent telecommunications carriers against Vonage Hold-

Stakes in Patent Cases, 101 GEO. L.J. 637, 655 (2013); Vincent J. Roth, *Will FDA Data Exclusivity Make Biologic Patents Passé?*, 29 SANTA CLARA COMPUTER & HIGH TECH. L.J. 249, 273 (2013). The term is related to "trademark bully," which is typically used to refer to "a large company that seeks to put an end to behavior by individuals and small businesses that it perceives as a danger to its own intellectual property even though its legal claims against these other parties are spurious or non-existent." Irina D. Manta, *Bearing Down on Trademark Bullies*, 22 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 853, 854 (2012); see Leah Chan Grinvald, *Shaming Trademark Bullies*, 2011 WIS. L. REV. 625 (using the term in the scholarly literature for the first time, although it had been used in the commercial sphere several years earlier).

28 See Stuart J.H. Graham, Robert P. Merges, Pam Samuelson & Ted Sichelman, *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24 BERKELEY TECH. L.J. 1255, 1316 (2009) ("If the litigation is launched by a 'bully' attempting to put the startup out of business, the suit may indeed yield such a result if the startup is unable or unwilling to tap the capital markets to fund lengthy and expensive litigation."); see also *infra* Part I (describing the attempts of incumbent telecommunications carriers to displace Vonage from the market).

29 See Graham & Sichelman, *supra* note 25, at 1077 ("Thus, if a patentee spots a start-up using its patented technology and desires a license to the start-up's patents—except in the very unlikely event that the start-up has a significant portfolio to cross-license—the start-up would presumably provide a payment (either up-front, as an on-going royalty, or both) to the patentee as part of the cross-licensing agreement.").

30 See *id.* at 1087–88 ("Alternatively, a company may have 'first-mover' advantages or hold complementary assets that effectively prevent competition in the market for commercial embodiments of the invention."); see also David J. Teece, *Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RES. POL'Y 285 (1986) (discussing the benefits of first-mover advantages and complementary assets).

31 See F. Scott Kieff, *Coordination, Property, and Intellectual Property: An Unconventional Approach to Anticompetitive Effects and Downstream Access*, 56 EMORY L.J. 327, 413 (2006) ("[F]ollowing the FTC recommendations may lead to a system under which large players could regularly trade large numbers of weak patents with each other while at the same time frustrating market entry."); F. Scott Kieff, *A Keiretsu Approach to Patents*, INTELL. ASSET MGMT. 52 (Feb./Mar. 2007), <http://hoohila.stanford.edu/Commercializing%20Innovation/Files/OP-A%20Keiretsu%20Approach%20to%20Patents.pdf> (discussing the mechanism behind the "keiretsu" effect of cross-licensing networks).

ings Company (Vonage), an early-stage company that provides consumer telephone services over the Internet.³² By evaluating the decisions of Vonage's and Sprint's counsel in the context of the patents-in-suit, accused technology, prior art, and hired experts, this Article offers an atypical, "law in action" approach³³ for assessing the defects of the present patent system.³⁴ Such a mode of inquiry is radically different from not only the doctrinally oriented analyses that generally ignore the effects of counsel on case outcomes and judicial opinions, but also the high-level empirical analyses that tend to abstract away from the day-to-day decisions of parties, lawyers, and judges.³⁵

More concretely, this Article examines how Sprint, Verizon, and AT&T filed suits to prevent Vonage from continuing to gain market share from the carriers with its disruptive, Internet-based, consumer telephony services.³⁶ Although it appears that all or nearly all of the patents-in-suit were very likely not infringed, invalid, or unenforceable, Vonage had comparatively limited resources and lacked the experience to vigorously and skillfully defend

32 See *infra* Section I.A (describing Vonage's history and services).

33 Roscoe Pound, *Law in Books and Law in Action*, 44 AM. L. REV. 12, 15 (1910) ("But if we look closely, distinctions between law in the books and law in action, between the rules that purport to govern the relations of man and man and those that in fact govern them, will appear, and it will be found that today also the distinction between legal theory and judicial administration is often a very real and a very deep one."); see also MORTON J. HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW, 1870–1960*, at 169–89 (1992) (discussing the rise of legal realism and sociological jurisprudence and the potential of "law in action" to reform "law in the books"); G. Edward White, *From Sociological Jurisprudence to Realism: Jurisprudence and Social Change in Early Twentieth-Century America*, 58 VA. L. REV. 999, 1004–13 (1972) (describing the influence of Roscoe Pound on the development of sociological jurisprudence and legal realism, which placed emphasis on the role of law in practice, rather than legal doctrine).

34 I only provide a brief account of the AT&T suit, because I represented Vonage in that case. See *infra* note 53. Additionally, because of space considerations and the lack of electronic access to most of the documents in the Verizon case, I analyze that suit in lesser detail. See *infra* Part I.

35 See Pamela S. Karlan, *Answering Questions, Questioning Answers, and the Roles of Empiricism in the Law of Democracy*, 65 STAN. L. REV. 1269, 1271 (2013) ("It would be a pity if legal scholarship, like much of contemporary political science, were to adopt the view that the only questions worth asking, and the only answers worth giving, are quantitative or based on models so highly stylized that they omit the messy but important lessons of experience.").

36 See *infra* Part I (describing the anticompetitive goals of the incumbents' suits against Vonage). In an article focusing on the threats to Voice over IP (VoIP) providers from a telecommunications law perspective, John Blevins has also recounted the Vonage trilogy of suits filed by the incumbent carriers. John Blevins, *Death of the Revolution: The Legal War on Competitive Broadband Technologies*, 12 YALE J.L. & TECH. 85, 117–21, 131–32 (2009) (quoting Graham & Sichelman, *supra* note 25, at 1080). However, unlike the treatment here, Blevins's account occupies a little over five journal pages and primarily relies on news reports, rather than the underlying court documents, patents, and prior art. See *id.*

against these suits.³⁷ As a result, it paid more than \$200 million in settlement payments to the carriers.³⁸ Ultimately, Vonage's seemingly unwarranted settlement payments placed it at the brink of insolvency—drastically reducing its stock price and severely weakening its position in the market.³⁹ Perhaps more importantly, the outcome of the Vonage trilogy—which was widely publicized in the mainstream media—has provided a strong signal to incumbents that patent litigation, even when the underlying case is weak, can be an effective tool to quash competition.⁴⁰

Despite the serious nature of patent bullying, scant attention has been paid to it in the popular press and academic literature, especially in recent years.⁴¹ Arguably, the paucity of discussion of patent bullying stems in large part from certain practicing entities effectively diverting attention away from their own exploitative behavior by placing the blame on so-called “non-practicing entities” (NPEs) and “patent assertion entities” (PAEs), often taken to be synonymous with “patent trolls.”⁴² Although I do not contend that abu-

37 See Blevins, *supra* note 36, at 117–21, 131–32 (explaining how industry observers generally viewed the incumbents' suits as weak). One might ask how Vonage was able to pay the \$200 million in settlement amounts if “it had comparatively limited resources to . . . vigorously defend against these suits.” As I explain below, Vonage was sued during a period of rapid revenue growth of roughly 300% annually. See *infra* Section I.A. Specifically, at the time of the first suit, Vonage's annual revenue was likely around \$200 million per year, but by the time of the first settlement, it had grown to about \$800 million per year. See *infra* note 73 and accompanying text; see also Press Release, Vonage Holdings Corp., Vonage Holdings Corp. Reports Third Quarter 2007 Results (Nov. 8, 2007), available at <http://ir.vonage.com/releasedetail.cfm?ReleaseID=274778>. Nonetheless, Vonage nearly went bankrupt because of the settlement payments. See *infra* notes 200–02 and accompanying text.

38 See *infra* note 198 and accompanying text.

39 See *infra* notes 200–05 and accompanying text.

40 See *infra* Conclusion (explaining how relatively weak suits filed by patent bullies can cause substantial economic harm by diminishing competition); see also Blevins, *supra* note 36, at 118 (“In addition to the sheer amount of damages Vonage had to pay, the litigation sent a significant and cautionary signal to the market. Like all new startups, independent VoIP companies relied on attracting investors. The litigation, however, substantially increased the risks of investing in any independent VoIP company.”); *id.* at 119 (noting that, while Vonage had problems apart from the patent litigation, “the patent litigation threat posed [the most] serious and even existential threat” as evidenced by the fact that “Vonage's most serious signs of weakness tended to correlate closely in time with Vonage's fortunes in the patent litigation”).

41 Notable exceptions to this trend include Chien, *supra* note 1; Graham & Sichelman, *supra* note 25; Jean O. Lanjouw & Josh Lerner, *Tilting the Table? The Use of Preliminary Injunctions*, 44 J.L. & ECON. 575 (2001); Michael J. Meurer, *Controlling Opportunistic and Anticompetitive Intellectual Property Litigation*, 44 B.C. L. REV. 509 (2003); Gwendolyn G. Ball & Jay P. Kesan, *Transaction Costs and Trolls: Strategic Behavior by Individual Inventors, Small Firms and Entrepreneurs in Patent Litigation* (Ill. Pub. Law & Legal Theory Papers Series, Paper No. 08-21, 2009), available at <http://ssrn.com/abstract=1337166>. However, none of these works conducts an in-depth case study of patent bullying.

42 See Sannu K. Shrestha, *Trolls or Market-Makers? An Empirical Analysis of Nonpracticing Entities*, 110 COLUM. L. REV. 114, 136 (2010) (“Opponents of NPEs have also been actively

sive behavior by trolls should be condoned, it should be viewed in the light of rampant abusive behavior by non-practicing *and practicing* entities alike.⁴³ The Vonage case study presented herein indicates that as “patent bullies,” practicing entities can engage in similar levels of abuse as the non-practicing trolls.⁴⁴

I. THE GENESIS, SUCCESS, AND BULLYING OF VONAGE

This Part begins by recounting the genesis of Vonage in 2000 and its rapid growth over the next five years. Next, it describes the suits filed against Vonage by Sprint, Verizon, and AT&T, including an in-depth analysis of the patents and technologies at issue in the Sprint case. In so doing, I conclude that Vonage failed to raise (or waived) potentially determinative defenses in the Sprint case, which it settled for roughly \$80 million.⁴⁵ In analyzing the Sprint case in detail, I do not mean to convey that Sprint’s tactics during litigation per se were “bullying”—rather, my aim is to show that although Sprint’s claims were weak at best, it was nonetheless able to force Vonage to pay \$80 million.⁴⁶ The ability of large patentees to extract sizable payments from smaller companies on patents of highly dubious merit is exemplative of the systemic abuse present in today’s patent system.⁴⁷

Last, I examine several suits filed against Vonage by ostensible “trolls,” as well as a suit Vonage “acquired” that was directed against the incumbent carriers.⁴⁸ In general, I conclude that the patent system was not effective for Vonage as a plaintiff—and, more importantly—afforded ample opportunity for patent bullying of Vonage by industry incumbents, with results far worse than those inflicted on Vonage by the trolls.⁴⁹

As a preliminary matter, the reader might wonder whether a legal academic is suitably positioned to play “Monday morning quarterback” in evaluating the decisions of lawyers in cases involving highly complex technologies and spanning several years and hundreds of pleadings.⁵⁰ Normally, the answer to this question would be an indubitable “no.” However, in this situation, I believe the answer is a qualified “yes.” Specifically, before practicing as a patent litigator, I founded and ran a software communications company that sold Voice over IP (VoIP) systems that included technology similar to

lobbying Congress to curb their ability to threaten product manufacturers.”); *supra* note 1 (citing sources discussing PAEs).

43 See Sichelman, *supra* note 4, at 541–54 (describing how practicing entities can cause holdup problems in essentially the same manner as NPEs).

44 See *infra* Part I.

45 See *infra* note 172 and accompanying text.

46 See *infra* subsection I.B.1.

47 See *supra* notes 19–31 and accompanying text.

48 See *infra* notes 206–11 and accompanying text.

49 See *infra* Conclusion.

50 See WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY 1457 (Philip Babcock Gove ed., 1993) (defining a “Monday morning quarterback” as “a person who using hindsight criticizes what others have done”).

that used by Vonage.⁵¹ In this regard, I was heavily involved in the design, development, and installation of my company's VoIP-related products.⁵²

Additionally, I represented Vonage in its action against AT&T—albeit briefly, as the case settled shortly after filing—and also represented Skype, the largest provider of VoIP services in the world, in two unrelated patent infringement actions. As part of my professional and legal work, I have become quite familiar with the types of VoIP technologies employed by Vonage, including prior art relevant to the patents-in-suit in the Vonage trilogy. Although I have not read every pleading in detail in the Sprint case—nor do I even have access to all of them, as many were filed under seal—in drafting this Article, I spent numerous hours reading the patents-in-suit, pleadings, and orders, as well as searching for and reviewing potential prior art. Although I can legitimately convince only those intimately familiar with the facts of the case of the correctness of my conclusions, hopefully the analysis presented herein will inform any reader of the weakness of Sprint's suit and the critical omissions Vonage made in defense.⁵³

A. *Traditional Telephony and the Birth of Vonage*

Up until the mid-1990s, voice-based telephone communications comprised a combination of traditional “circuit switched” (effectively analog) networks—often known collectively as the “public switched telephone network” (PSTN)—and private “packet-based” (effectively digital) networks, which were typically used to carry long-distance traffic between local “relay” points connected to the PSTN.⁵⁴ With the rise of the Internet, a number of compa-

51 The company is Unified Dispatch LLC. See UNIFIED DISPATCH, <http://www.unified-dispatch.com/> (last visited Nov. 17, 2014); *Executive Profile: Ted Sichelman*, BLOOMBERG BUSINESSWEEK, <http://investing.businessweek.com/research/stocks/private/person.asp?personId=2719138&privcapId=2703941&previousCapId=2703941&previousTitle=Unified%20Dispatch%20LLC> (last visited Nov. 17, 2014).

52 See Automated Transp. Call-Taking System, U.S. Patent No. 2003/0235282 A1, at [0004] (filed Feb. 11, 2003) (“The present invention relates generally to an automated system for inputting, accessing, and retrieving speech- and touch-tone (DTMF) based information for processes related to passenger ground transportation through an ordinary or Voice over IP (VOIP) telephone using specialized voice recognition software and hardware.”); Can. Patent No. 2,475,869 (filed Feb. 11, 2003) (issued Feb. 1, 2011) (stating the same).

53 As I mentioned earlier, this Article only briefly examines the *Verizon* and *AT&T* cases because of space limitations, the lack of readily available court documents, and my representation of Vonage in the *AT&T* case. See *supra* note 34 and accompanying text.

54 *Mayor of Balt. v. Vonage Am. Inc.*, 544 F. Supp. 2d 458, 462 n.7 (D. Md. 2008) (“The PSTN is an international system of public circuit-switched telephone networks based on copper wires that carries analog voice data.”); *Sprint Spectrum LP v. Comm’r of Revenue*, Nos. 7299-R, 7308-R & 7309-R, 2003 WL 21246600, at *3 (Minn. Tax Ct. May 23, 2003) (“Sprint Communications employs various items of equipment which were purchased during the tax periods at issue, which have been incorporated into its long distance network. The network is housed at switch complexes and consists of tandem switches, long distance switches, core switches, digital multiplex system switches, international gateway switches, cable, wire, multiplexers, repeaters/regenerators, digital cross connection systems, fiber

nies endeavored to carry voice traffic over that, effectively public, packet-based network.⁵⁵ Early providers, such as the Israeli company, VocalTec, required that all users be on the Internet to place and receive calls.⁵⁶ Yet, in early 1996, VocalTec demonstrated an innovative Internet Protocol (IP)-PSTN gateway that bridged the PSTN and IP worlds.⁵⁷ This sort of gateway allowed callers on a standard telephone network to call someone on the Internet and vice versa.⁵⁸ Soon after VocalTec released its gateway, other manufacturers, such as Cisco Systems, Inc. (Cisco), offered similar gateways.⁵⁹ With a large variety of cost-affordable and reliable gateways available, a number of Internet telephony companies were founded to offer consumers standard telephone services that used the Internet to substantially reduce the costs of carrying long-distance calls.⁶⁰

The fastest growing of these companies in the early 2000s was Vonage Holdings Company.⁶¹ Founded in 2000, by 2005, Vonage had over 1.2 mil-

optic terminals, hardware jack fields, signaling system equipment and frame relay equipment, and internet protocol equipment.”).

55 See Adam Candeb, *Network Interconnection and Takings*, 54 SYRACUSE L. REV. 369, 424 (2004) (“Only recently have companies like Vonage started to offer IP telephony long distance calls. They use the Internet to bypass the long-distance telephone networks—and thus avoid access charges.”).

56 *Multi-Tech Sys., Inc. v. VocalTec Commc’n, Inc.*, 122 F. Supp. 2d 1046, 1047 (D. Minn. 2000) (“[VocalTec companies] make, use, offer for sale, and sell products and services that allow users to engage in telephone calls over communication lines using Internet Protocol.”); Eryn Brown, *VocalTec Software for Internet Phone Calls*, FORTUNE MAG. (July 8, 1996), http://archive.fortune.com/magazines/fortune/fortune_archive/1996/07/08/214359/index.htm (describing VocalTec’s “Internet Phone”).

57 *VocalTec Introduces the Internet Phone Telephony Gateway Linking Traditional and Internet Telephone Networks*, PR NEWSWIRE (Mar. 8, 1996), <http://www.thefreelibrary.com/VOCALTEC+INTRODUCES+THE+INTERNET+PHONE+TELEPHONY+GATEWAY+LINKING...+a018069250>.

58 See *id.* (describing “a system that will enable real-time voice conversations for normal telephone users through the Internet to another local, long-distance or international telephone user”).

59 See *Cisco Announces New Voice Packet Gateway Solution; Offers High-Quality, Reliable Voice; Communication Costs Reduced by Up to 50 Percent*, BUS. WIRE (Oct. 21, 1997), <http://www.thefreelibrary.com/Cisco+Announces+New+Voice+Packet+Gateway+Solution%3B+Offers...+a018912580>.

60 See OLIVIER HERSENT, *IP TELEPHONY: DEPLOYING VOIP PROTOCOLS AND IMS INFRASTRUCTURE*, at xxix (2d ed. 2010) (“Since 1998 Voice over IP, in short VoIP, has been the favorite buzzword of the telecom industry.”); Joe Hallock, *A Brief History of VoIP: Document One – The Past 7* (Nov. 26, 2004) (unpublished manuscript), available at http://www.joehallock.com/edu/pdfs/Hallock_J_VoIP_Past.pdf (documenting the rise of the VoIP industry and noting that “[b]y 1998 some entrepreneurs started to market PC-to-phone and phone-to-phone VoIP solutions”).

61 See *Profile: Vonage Holdings Corporation*, YAHOO! FIN., <http://finance.yahoo.com/q/pr?s=VG> (last visited Nov. 17, 2014); *Timeline*, http://www.vonage.com/corporate/images/vonage_timeline.pdf (last visited Nov. 17, 2014).

lion subscribers, a number that was growing at over 300% per year.⁶² The driver behind Vonage's phenomenal growth and revenue was its ability to offer "unlimited" local and long-distance calling on any ordinary telephone for about \$40 per month.⁶³ Although Vonage's calls are carried over the Internet, a user simply plugs an adapter into an ordinary phone and connects it to a router—and with some minimal installation—starts placing calls in a manner essentially indistinguishable from a traditional phone service.⁶⁴ Thus, Vonage was not simply an add-on, but an entire replacement, for the services offered by the incumbent carriers.⁶⁵ Not only were carriers losing many subscribers and substantial revenue to Vonage in the mid-2000s, they were implicitly funding Vonage's low-cost service because they built and maintained most of the underlying network for the Internet in the United States.⁶⁶ Although the carriers were paid by their subscribers for their use of the Internet, because landline data plans in the United States typically provided (and still provide) for *unlimited* data transmission and downloads, the carriers were effectively subsidizing Vonage's discounts.⁶⁷ Moreover, by providing its services over the "preexisting" Internet, Vonage was able to avoid being classified as a traditional telephone service, which allowed it to escape burdensome regulation and taxes.⁶⁸ As such, the incumbent carriers were presumably highly motivated to find any way to prevent Vonage from expanding its subscriber base.

B. *The Vonage Trilogy*

1. *Sprint v. Vonage*

In October 2005, Sprint filed an infringement suit on seven patents against Vonage in the District of Kansas.⁶⁹ In terms of relative resources—

62 See *supra* Timeline, note 61; THE ASSOCIATED PRESS, *Survey: VoIP Triples in 2005*, REDMOND MAGAZINE (Mar. 1, 2006), <http://redmondmag.com/articles/2006/03/01/survey-voip-triples-in-2005.aspx>.

63 See Ted Hearn, *An Advantage for Vonage? VoIP Rival Rides Cable Pipe*, MULTICHANNEL NEWS (Jan. 6, 2003), <http://www.highbeam.com/doc/1G1-96379036.html>.

64 See Lev Grossman, *On the Internet, Talk Is Cheap*, TIME, Apr. 15, 2002, at 77.

65 See Christopher Williams, *Vonage: Patent Smackdown Won't Bring Shutters Down*, THE REGISTER (Feb. 26, 2007, 11:57 PM), http://www.theregister.co.uk/Print/2007/02/26/vonage_defends_against_verizon/.

66 *In re Vonage Holdings Corp.*, 19 FCC Rcd. 22,404, 22,406 (2004) ("Because Vonage does not offer Internet access services . . . customers must obtain a broadband connection to the Internet from another provider.").

67 See Beth Simone Noveck, *The State of Play*, 49 N.Y.L. SCH. L. REV. 1, 7 (2004) (noting the "[t]he boost in available bandwidth for home users and the increasing penetration of Internet connectivity (helped by a move to flat-rate pricing)").

68 See *Vonage Holdings Corp. v. Minn. Pub. Util. Comm'n*, 290 F. Supp. 2d 993, 999, 1001–02 (D. Minn. 2003) (finding that Vonage did not provide "telecommunications services"), *aff'd*, 394 F.3d 568, 568 (8th Cir. 2004).

69 Complaint, *Sprint Commc'ns Co. v. Vonage Holdings Corp.*, 500 F. Supp. 2d 1290 (D. Kan. 2007) (No. 05-2433-JWL), 2005 WL 3776507.

and using the end of 2005 as a benchmark—Sprint had 430 U.S. patents,⁷⁰ \$35 billion in revenue, \$1.8 billion in net profits, 60,000 employees, and 48 million customers,⁷¹ while Vonage had no issued patents,⁷² \$269 million in revenue, \$262 million in net losses, 1355 employees, and 1.27 million customers.⁷³ Notably, Vonage’s lack of a patent portfolio (by definition) precluded it from the preferred tactic of “defending” against suit by asserting its patents back against Sprint.⁷⁴ Indeed, as recounted in more detail below, Vonage settled the case after purchasing a set of patents that Sprint was accused of infringing in another case.⁷⁵

The seven patents-in-suit all disclosed technological systems and methods to route voice traffic on a traditional telephone network—i.e., the “public switched telephone network” (PSTN)—to and from a digital, packet-based network that uses an “asynchronous transfer mode” (ATM), non-Internet protocol.⁷⁶ Like so-called “patent trolls,” Sprint admitted in its interrogatories that it never practiced the patents, though there was some evidence that Cisco Systems, Inc. was a licensee of the patents-in-suit, and that Cisco sold products that could be used in practicing the patents.⁷⁷ In this regard, one critical fact in the case was that Vonage purchased most of its communica-

70 See *USPTO Patent Full-Text and Image Database*, <http://patft.uspto.gov/netahtml/PTO/search-adv.htm> (last visited Nov. 17, 2014) (showing 430 issued U.S. patents assigned to “Sprint” as of Dec. 31, 2005).

71 See *Investor Quarterly Update: Fourth Quarter and Year-End 2005 Results*, SPRINT (Feb. 21, 2006), <http://newsroom.sprint.com/news-releases/investor-quarterly-update-fourth-quarter-and-year-end-2005-results.htm>; *The Infotech 100 Companies: Sprint Nextel*, BLOOMBERG BUSINESSWEEK (2006), <http://www.businessweek.com/it100/2006/36.htm> (reporting 2005 company information).

72 See *USPTO Patent Full-Text and Image Database*, <http://patft.uspto.gov/netahtml/PTO/search-adv.htm> (last visited Nov. 17, 2014) (showing no issued U.S. patents assigned to “Vonage” as of December 31, 2005).

73 See Vonage Holdings Corp., Amendment No. 1 to Form S-1 (Form S-1/A), (Apr. 7, 2006), available at <http://ir.vonage.com/secfiling.cfm?filingID=1047469-06-4820>.

74 Risch, *supra* note 12, at 100 (“[IBM] is rarely, if ever, sued for patent infringement by its competitors. The reason is simple: any company that might sue IBM for infringing a patent would face counterclaims for infringing several IBM patents. The result is either no action or a cross-license agreement between IBM and the other party.” (citations omitted)).

75 See *infra* notes 172–74 and accompanying text.

76 See Complaint, *supra* note 69, at 2–4 (listing asserted patents, including U.S. Patent Nos. 6,304,572 (filed May 20, 1998), 6,633,561 (filed Nov. 14, 2001), 6,463,052 (filed May 20, 1998), 6,473,429 (filed July 15, 1999), 6,452,932 (filed Feb. 7, 2000), 6,298,064 (filed Feb. 15, 2000), and 6,665,294 (filed Aug. 5, 2002)).

77 See Memorandum in Support of Vonage Holdings Corp. & Vonage Am., Inc.’s Motion Seeking Leave to Amend Their Respective Answers, Affirmative Defenses and Counterclaims Pursuant to FED. R. CIV. P. 15 at 4–5, *Sprint Commc’ns Co. v. Vonage Holdings Corp.*, 500 F. Supp. 2d 1290 (D. Kan. 2007) (No. 05-2433-JWL) [hereinafter Memorandum in Support].

tions equipment from Cisco, which led to potential defenses I explore below.⁷⁸

Because the specifications of the patents-in-suit disclosed carrying voice traffic over an ATM-based network, as opposed to the Internet, claim construction revolved around whether Sprint's patents could cover an IP network.⁷⁹ In this regard—like savvy trolls—Sprint filed an original patent application, which it abandoned, then filed a series of “continuation” applications, including those that resulted in the seven patents-in-suit.⁸⁰ By using continuations, Sprint was able to rely on the filing date of its original application for new claims that purported to cover non-ATM networks.⁸¹ Indeed, Sprint's earliest-issued patent claims are limited to ATM networks,⁸² while its later patents removed this limitation, presumably in an attempt to reach IP networks like those used by Vonage.⁸³ Importantly, because Sprint's later patent applications were entitled to rely on the 1994 filing date of the original application, all of the developments in the field of Internet telephony between then and the late 1990s (the actual filing date of the patents-in-suit)

78 See Memorandum in Support of Vonage Holdings Corp. & Vonage Am., Inc.'s Objections to and Motion for Review of Orders of May 14, 2007 and May 16, 2007 Pursuant to Fed. R. Civ. P. 72 at 2, *Sprint*, 500 F. Supp. 2d 1290 (No. 05-2433-JWL), 2007 WL 5189610. Vonage sought to amend its answer to include the affirmative defenses of “license, express or implied, or other contract” based on facts and documents relating to agreements between Sprint and Cisco initially withheld by Sprint and produced only at the close of discovery, and only in part. See Memorandum in Support, *supra* note 77, at 3. In the parties' proposed pretrial order, Vonage also unsuccessfully asserted these materials as support for those defenses it had alleged in its original pleading, including its affirmative defense of estoppel. See *Sprint*, 500 F. Supp. 2d at 1348.

79 See *Sprint Commc'ns Co. v. Vonage Holdings Corp.*, 518 F. Supp. 2d 1306, 1313 (D. Kan. 2007).

80 *Sprint*, 500 F. Supp. 2d at 1302 (noting that all of the asserted patents were continuations of previously filed applications).

81 See *id.* (“Vonage disputes Sprint's allegations that its [non-ATM] VoIP system infringes any claims of the asserted patents, either literally or under the doctrine of equivalents.”); see also 35 U.S.C. § 120 (2012) (allowing continuations to rely upon the filing date of the original patent application); Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. Rev. 63, 68 (2004) (“The continuation application is treated just like a new application, giving the applicant another set of chances to persuade the examiner to allow the claims, to further amend the claims, or even to hope to get a different examiner.” (citations omitted)).

82 See Vonage's Memorandum in Opposition to Sprint's Motion for Partial Summary Judgment at 7, ¶ 15, *Sprint*, 500 F. Supp. 2d 1290 (No. 05-2433-JWL), 2007 WL 2813950 [hereinafter Vonage's Memorandum in Opposition] (“In the parent application of the patents-in-suit that was filed while Mr. Christie [the inventor] was still alive and whose claims Mr. Christie reviewed, each of the independent claims contained limitations directed to elements described in Mr. Christie's initial disclosure documents, such as an ‘ATM interworking multiplexer.’”).

83 See *id.* at 8, ¶ 16 (“Following Mr. Christie's death, Sprint removed these limitations from its claims.”).

were excluded from the set of potential prior art that could be used to invalidate the patents.⁸⁴

Although Vonage was able to win a key claim construction battle that limited the *literal* scope of many of the asserted claims to ATM networks, as I recount below, it apparently failed to mount arguments that would have probably given it a winning defense of non-infringement for three of the seven patents under the doctrine of equivalents.⁸⁵ In addition to Vonage's failure to limit the patents to ATM networks—despite the seemingly wide array of prior art available to it and strong evidence showing the inventor of the patents never considered his invention to apply to IP networks⁸⁶—it did not move for many defenses of invalidity on summary judgment, including anticipation and obviousness,⁸⁷ and was unsuccessful in showing invalidity at trial.⁸⁸ Finally, Vonage waived the potentially decisive defenses of “implied license” and “exhaustion” by waiting to assert them until the last day of discovery.⁸⁹ Taken together, these omissions arguably turned Sprint's seemingly “weak” case into an effectively “strong” one.

Part of Vonage's failure to mount these defenses presumably stemmed from the inexperience of its experts, who—as I explain below—appeared relatively unfamiliar with the technology-at-issue.⁹⁰ Of course, ultimately it is counsel who is responsible for selecting experts, gathering evidence, and mounting a case. Yet, according to the court and all other indicators, Vonage's counsel was quite experienced in patent litigation matters.⁹¹ Thus, one might surmise that Vonage's omissions and waivers—some of them quite serious—resulted more from a lack of time and resources, rather than skill,

84 See *id.* at 12, ¶ 48 (“Sprint was amending its claims at the same time market analysis predicted industry developments making internet telephony a real challenge.”); see also Lemley & Moore, *supra* note 81, at 66–68 (explaining how continuation applications are entitled to the benefit of the original filing date, thereby excluding prior art between the date the original application is filed and the date the continuation is filed).

85 See *infra* notes 131–34 and accompanying text.

86 See Vonage's Memorandum in Opposition, *supra* note 82, at 6, ¶ 8; *id.* (citing a PowerPoint slide of the inventor stating the invention's purpose was to “describe a new switched ATM/circuit network architecture”).

87 *Sprint*, 500 F. Supp. 2d at 1331–45 (deciding Vonage's various motions for invalidity).

88 Verdict, *Sprint*, 500 F. Supp. 2d 1290 (No. 05-2433-JWL), 2007 WL 2790718 (reporting the jury's findings that none of the asserted patent claims were invalid).

89 *Sprint*, 500 F. Supp. 2d at 1347 (“Vonage contended that the belated amendment was justified because Vonage had only recently come into possession of a contract between Sprint and Cisco, the terms of which include licenses, covenants not to sue, and other terms that Vonage contended may bar Sprint's claims against Vonage. The magistrate judge denied Vonage's motion on the grounds of undue delay and prejudice to Sprint. He noted that Vonage's motion was filed on the last day of discovery in the case over two months after Sprint produced the purportedly ‘newly discovered’ documents, and implicitly rejected Vonage's justification that it had been busy pursuing follow-up discovery.”).

90 See *infra* notes 93–101 and accompanying text.

91 *Sprint*, 500 F. Supp. 2d at 1304 (“Vonage is represented by sophisticated counsel and competent local counsel . . .”).

arguably brought on by a constrained litigation budget.⁹² With these caveats, I now turn to the details of the case.

a. Battle of the Experts (or Not)

Perhaps the first—and, surely, one of the most important—strategic gaffes by Vonage’s counsel was hiring a non-infringement expert who was arguably unqualified and an invalidity expert with very little relevant knowledge in the field. Specifically, for its non-infringement expert, Vonage hired Joel M. Halpern, a consultant in the field of networking.⁹³ Although Halpern had extensive experience in the area of ATM and IP networks,⁹⁴ as Sprint recognized in a motion to exclude his expert opinions, his expertise encompassed data networking but not traditional telephony, including the PSTN.⁹⁵ Because the patents and technology at issue all involved transferring calls between the PSTN and packet networks (such as ATM and IP networks), Vonage’s non-infringement expert only had knowledge of half of the equation.⁹⁶ Although Sprint’s motion to exclude Halpern was not granted,⁹⁷ Vonage arguably suffered from his lack of expertise. As discussed below, it appears Vonage failed to introduce important non-infringement arguments at summary judgment and presented a poor case of non-infringement at trial.⁹⁸

Vonage’s invalidity expert, Frank R. Koperda, had some experience in interfacing traditional telephony platforms with digital networks, but it was in the mid-1980s, more than ten years before the critical date of the patents-in-

92 See Graham, Merges, Samuelson & Sichelman, *supra* note 28, at 1315 (“Another downside of patents in a startup’s competitive environment is the threat of patent disputes and, when negotiation fails, costly litigation. Startups may be particularly sensitive to accusations of infringement because they are likely to experience resource constraints when faced with the costs of funding a suit, estimated for most suits to be between \$3 million and \$6 million per litigant through appeal.”); Malani & Masur, *supra* note 27, at 654 (noting that a startup’s “capital constraints can make a battle with a larger firm very difficult for a startup to win”).

93 *Megisto Systems Appoints Joel Halpern CTO*, TELECOMPAPER (Jan. 15, 2003, 3:02 PM), <http://www.telecompaper.com/news/megisto-systems-appoints-joel-halpern-cto—350936> (noting Halpern’s “more than 24 years of experience in architecting IP networks and service infrastructure”).

94 See *id.* (making reference to Halpern’s experience in both of these areas).

95 Sprint’s Brief in Support of Its Motion to Exclude the Opinions of Vonage’s Expert Joel M. Halpern at 5, *Sprint*, 500 F. Supp. 2d 1290 (No. 05-2433-JWL), 2007 WL 2821679 [hereinafter Sprint’s Brief in Support of its Motion to Exclude] (“[W]hile Mr. Halpern has worked on wireless and cellular networks, this work involved *data* networking, not voice telephony or the Public Switched Telephone Network (‘PSTN’).”).

96 See *id.* (“Mr. Halpern does not have experience with narrowband signaling requirements or with the transmission of voice over the PSTN.”).

97 *Sprint*, 500 F. Supp. 2d at 1331 (“[T]he court will also deny Sprint’s motion to exclude Mr. Halpern’s non-infringement opinions.”).

98 See *infra* notes 129–44, 168 and accompanying text.

suit.⁹⁹ The rest of Koperda's experience—like Halpern's—was mainly in data networking, and his small amount of experience in VoIP did not involve connections between the PSTN and IP networks.¹⁰⁰ Like Halpern, Koperda's inexperience in PSTN-IP internetworking apparently led to Vonage's failure to lodge strong invalidity defenses.¹⁰¹

b. Missed Prior Art and Key Defenses

Vonage was unable to mount a substantial defense of anticipation or obviousness.¹⁰² Although I have not exhaustively searched for or analyzed the prior art relevant to the patents-in-suit, industry observers indicated that Sprint's patents were likely invalid, and the failure of Vonage to lodge substantial prior art likely seems to be a significant oversight.¹⁰³ Despite the ostensive gaps in Vonage's prior art disclosures, because Sprint's patents only disclosed communications technologies in an ATM environment, but the claims in the patents in issue were drafted to cover any type of network—including an IP environment—it should at least have been apparent to Vonage's counsel that lack of written description would be a critical defense.¹⁰⁴ In this regard, recall that the enablement requirement demands that the specification “describe how to make and use the invention,” while the written description requirement mandates that the specification “show that the inventor actually invented the invention claimed.”¹⁰⁵

Although Vonage's counsel apparently recognized the importance of a non-enablement defense—and while Vonage's expert's invalidity report is sealed—other documents show that Vonage's counsel apparently overlooked the lack of written description as a separate defense at summary judgment.¹⁰⁶

99 See *Employment History for Frank R. Koperda*, NEXTGENDC.COM, http://www.nextgencdc.com/resume_employment.htm (last visited Nov. 17, 2014).

100 See *id.*

101 See *infra* notes 103–13 and accompanying text.

102 See *supra* text accompanying notes 87–88 (noting that Vonage did not mount anticipation or obviousness defenses at summary judgment and that the jury ultimately found the patents-in-suit valid).

103 See, e.g., Mike Masnick, *AT&T Joins the Party of Jealous Telcos: Sues Vonage for Patent Infringement*, TECHDIRT (Oct. 22, 2007, 1:03 AM), <http://www.techdirt.com/articles/20071019/184443.shtml> (“[I]t’s just ridiculous piling on against the first company that actually figured out how to market a VoIP telephone replacement service by a bunch of telcos who refused to innovate.”).

104 See *supra* text accompanying notes 79–84.

105 *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1345, 1351, 1358 (Fed. Cir. 2010) (distinguishing between the enablement and written description requirements); see also *In re Gosteli*, 872 F.2d 1008, 1012 (Fed. Cir. 1989) (stating that for written description, the critical question is whether the description “clearly allow[s] persons of ordinary skill in the art to recognize that [he or she] invented what is claimed” (citing *In re Wertheim*, 541 F.2d 257, 262 (C.C.P.A. 1976))).

106 Although the court remarked that “Vonage contends that the asserted patents are invalid pursuant to 35 U.S.C. § 112 for failure to comply with the written description, enablement, and definiteness requirements,” the court only addressed indefiniteness in its summary judgment order, indicating that Vonage did not raise a separate written descrip-

In particular, in a response brief to Sprint's motion to exclude the testimony of Vonage's invalidity expert, Vonage's counsel merely discussed enablement, but not written description.¹⁰⁷ Additionally, Vonage's opposition brief to Sprint's motion for partial summary judgment appeared to confuse the indefiniteness and written description doctrines.¹⁰⁸ In the very likely event that Vonage did not lodge a separate defense of written description at summary judgment, this failure appears to be a critical oversight, because the inventor of the patents-in-suit "regarded his invention as being directed to an ATM system rather than including the Internet as a component."¹⁰⁹ Such a statement seems the essence of a lack of "possession" of the "claimed subject matter."¹¹⁰ In other words, it appears the specification did not describe "the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention."¹¹¹ Although "[t]he subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*)," the patents would have needed to disclose sufficient material to "clearly allow persons of ordinary skill in the art to recognize" that the specification related to any type

tion defense. *Sprint Commc'ns Co. v. Vonage Holdings Corp.*, 500 F. Supp. 2d 1290, 1328–32 (D. Kan. 2007). Vonage apparently raised the defense at trial, but winning a written description argument in front of a jury is arguably a tall order, given the difficulty of conveying the differences between written description and enablement. *See* Sprint's Response in Opposition to Vonage's Trial Brief Regarding Enablement & Written Description at 1, *Sprint*, 500 F. Supp. 2d 1290 (No. 05-2433-JWL), 2007 WL 2821706 (attempting to exclude Vonage's proffered arguments on written description at trial).

107 *See* Vonage Am., Inc. & Vonage Holdings Corp.'s Memorandum in Opposition to Sprint Communications Co., L.P.'s Motion to Exclude the Opinions of Vonage's Expert Frank Koperda, *Sprint*, 500 F. Supp. 2d 1290 (No. 05-2433-JWL), 2007 WL 2821698.

108 Vonage's Memorandum in Opposition to Sprint's Motion for Partial Summary Judgment at 6, *Sprint*, 500 F. Supp. 2d 1290 (No. 05-2433-JWL), 2007 WL 2813950. Specifically, Vonage argued that the fact that "[e]very document authored by Mr. Christie states that his invention was directed to an ATM system for voice communication" supports a rejection under § 112, ¶ 2 (indefiniteness), rather than the much stronger argument for failure to meet ¶ 1 (written description/enablement). *See id.*

109 *Sprint*, 500 F. Supp. 2d at 1332 ("Vonage directs the court to evidence which it contends shows that Mr. Christie regarded his invention as being directed to an ATM system rather than including the Internet as a component. This evidence consists of documents authored by Mr. Christie as well as the deposition testimony of a Sprint employee and one of Sprint's patent attorneys.").

110 *Ralston Purina Co. v. Far-Mar-Co, Inc.*, 772 F.2d 1570, 1575 (Fed. Cir. 1985) (quoting *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983)) (internal quotation marks omitted) (noting that "the test for sufficiency of support in a parent application is whether the disclosure of the application relied upon 'reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter'" (quoting *In re Kaslow*, 707 F.2d at 1375)).

111 U.S. PATENT & TRADEMARK OFFICE, U.S. DEP'T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 2163.02 (9th ed. 2014), available at <http://www.uspto.gov/web/offices/pac/mpep/s2163.html> (citing *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)).

of network, including IP networks.¹¹² Because the patents' disclosure described "the invention" as relating solely to *ATM* networks—which was apparently supported by statements from the inventor and other Sprint engineers—and portions of the patents were construed to cover *non-ATM* networks, it is unlikely that Sprint satisfied the written description requirement.¹¹³

Vonage's apparent failure to mount a solid written description defense was not its only critical omission. In particular, according to the district court, "Vonage built its VoIP telephony system with the technical advice of, and using components purchased from, Cisco."¹¹⁴ Importantly, Sprint and Cisco had executed an "Alliance Agreement" that provided for the "joint development and ownership of products and intellectual property relating to the asserted patents."¹¹⁵ In the agreement, "Sprint agreed to license to Cisco . . . patents," including the patents-in-suit, and "covenanted not to sue Cisco customers for infringement of any [licensed] patent."¹¹⁶ Based on the Sprint-Cisco agreement, Vonage arguably had viable implied license and exhaustion defenses, even before the Supreme Court's opinion in *Quanta v. LG*.¹¹⁷ Yet, inexplicably—although Vonage's counsel had received the Sprint-Cisco agreement two months before the close of discovery—Vonage's counsel waited until the last day of discovery to move to amend its answer to include these defenses.¹¹⁸ As a result, the magistrate judge rejected Vonage's motion to amend its answer, which the district court subsequently upheld.¹¹⁹

112 *Id.* (quoting *In re Gosteli*, 872 F.2d 1008, 1012 (Fed. Cir. 1989)) (internal quotation marks omitted).

113 Moreover, as I describe further below, although there is some basis to believe the specification disclosed a "structure" relating to IP networks—even if this basis were sufficient to support claims over IP networks—it would preclude any theory of infringement under the doctrine of equivalents under the "dedication" rule. *See infra* notes 136–38 and accompanying text. Thus, even if Sprint failed on a written description defense, the same arguments would have very likely knocked out three patents that the court found were not literally infringed. *See infra* notes 136–38.

114 *Sprint*, 500 F. Supp. 2d at 1334.

115 *Id.*

116 *Id.*

117 *See generally* *Quanta Computer, Inc. v. LG Elec., Inc.*, 553 U.S. 617 (2008) (discussing the doctrines of patent exhaustion and implied license).

118 *See Sprint*, 500 F. Supp. 2d at 1347 ("[The magistrate judge] noted that Vonage's motion was filed on the last day of discovery in the case over two months after Sprint produced the purportedly 'newly discovered' documents, and implicitly rejected Vonage's justification that it had been busy pursuing follow-up discovery."); *cf.* Vonage Am., Inc. & Vonage Holdings Corp.'s Memorandum in Opposition to Sprint Communication Co.'s Motions *in Limine* at 16, *Sprint*, 500 F. Supp. 2d 1290 (No. 05-2433-JWL), 2007 WL 5189617 ("Vonage purchased a substantial number of the components in its system from Cisco, [and] any remark that Cisco instructed Vonage how to assemble its system, and any suggestion that the \$1 million per patent royalty evidenced by the Sprint/Cisco agreements is material to the determination of an established royalty for the Asserted Patents.").

119 *Sprint*, 500 F. Supp. 2d at 1348–49.

c. A Meager Summary Judgment Motion (and More Missed Defenses)

Vonage's tactical daftness continued at the summary judgment stage. The court began by stating that it "was struck by many . . . deficiencies in Vonage's brief."¹²⁰ It noted that a substantial portion of Vonage's brief failed to comply with local rules governing motions for summary judgment, because they were "largely cluttered with improper attorney argument and commentary as well as legal conclusions, none of which are 'facts as would be admissible in evidence.'"¹²¹ Indeed, the court lambasted Vonage for its poorly drafted brief, stating:

It contains mostly argument, attorney commentary, and conclusory statements regarding the patents and technology at issue, with only cursory citations to the record. Vonage's purported "factual" description of the Sprint patents in Section II is actually attorney argument that roughly paraphrases the patent disclosures to support Vonage's contentions in this case and, notably, selectively omits those portions of the patents which do not. . . . Additionally, it is even more troubling because it contains paragraphs, some of which are lengthy, which purport to describe Vonage's technologically complex system with nothing more than a single cursory citation to the record at the end of each paragraph. This makes it virtually impossible for the court to determine what, if any, portions of the record Vonage is relying on to support each of the statements which allegedly describes its system. . . .

. . . Vonage has no legitimate excuse for its decision to ignore these rules, as Vonage is represented by sophisticated counsel and competent local counsel who should be familiar with this court's rules governing summary judgment practice. . . . Accordingly, the court will grant Sprint's motion to the extent that it will largely disregard the arguments set forth in Sections II, III, and IV of Vonage's brief.¹²²

With the court predisposed to Sprint's arguments—not to mention the court's decision to "largely disregard" most of Vonage's arguments for procedural reasons—the court decided in favor of Sprint on summary judgment for all but its weakest arguments.¹²³

First, the court incorporated Sprint's hyperbole regarding the importance of the patents-in-suit, stating that the invention in the patents "was significant in that it had the potential to render obsolete major components within the PSTN, breaking the grip that a handful of switch manufacturers held on service providers like Sprint."¹²⁴ In reality, the invention appeared to be well known in the art (see below), and the court failed to note that Sprint never even practiced the putatively "significant" patents-in-suit.¹²⁵

120 *Id.* at 1303.

121 *Id.* at 1304.

122 *Id.* at 1304–05.

123 *See id.* at 1316–45 (analyzing the various motions for summary judgment).

124 *Id.* at 1301.

125 *See id.*; *see also supra* text accompanying note 77 (noting that Sprint never practiced the patents-in-suit).

Second, on claim construction issues, the court pointed out repeatedly that Vonage improperly read limitations from the specification into the claim language.¹²⁶ Nonetheless, Vonage was successful in its effort to limit the scope of the term “interworking device,” which the court interpreted as limited to “an ATM interworking multiplexer.”¹²⁷ In particular, citing the Federal Circuit’s decision in *Honeywell International v. ITT Industries*,¹²⁸ the court narrowed the plain meaning of the term, because it found the common specification of the patents-in-suit described “the invention” as providing “virtual connections through an ATM interworking multiplexer.”¹²⁹

Vonage’s win on “interworking device” set the stage for it to knock out three of seven asserted patents based on non-infringement arguments, because its network operates across IP—not ATM—networks.¹³⁰ Clearly, with such an interpretation, there could be no literal infringement of these three patents, and the court was quick to recognize as much.¹³¹ Yet the court found that material disputes of fact remained on the doctrine of equivalents.¹³² As an initial matter, Vonage missed an opportunity to eliminate the doctrine of equivalents as a theory of infringement. In particular, under the Supreme Court’s decision in *Festo Corp. v. Shoketsu*, amendments made during patent prosecution typically preclude reliance on the doctrine of equivalents.¹³³ However, because Vonage raised this argument only in its

126 See *Sprint*, 500 F. Supp. 2d at 1310–15 (“Given the clarity of the language of the claim terms themselves, then, the court will not import this limitation from the specification into the claims.”). After the summary judgment order issued, in a pretrial order, the court construed a number of additional terms and addressed several other arguments. See *Sprint Commc’ns Co. v. Vonage Holdings Corp.*, 518 F. Supp. 2d 1306, 1310–23 (D. Kan. 2007). I briefly address this order below in the description of the trial phase. See *infra* subsection II.B.1.d.

127 *Sprint*, 500 F. Supp. 2d at 1316 (“Given the clarity of the written description concerning the meaning of the claim term ‘interworking device,’ then, the court construes this claim term to mean *ATM interworking multiplexer*.”).

128 452 F.3d 1312 (Fed. Cir. 2006).

129 See *Sprint*, 500 F. Supp. 2d at 1310–11 (emphasis added).

130 See *id.* at 1300 (“Sprint Communications Company L.P. alleges that the voice over internet protocol telephony system of defendants Vonage Holdings Corp. and Vonage America, Inc. (Vonage) infringes sixty-one claims of seven telecommunications patents owned by Sprint.” (emphasis added)); *id.* at 1310.

131 See *id.* at 1316–18 (“It is undisputed that Vonage’s allegedly infringing system does not use ATM technology and, therefore, does not contain such a device. Thus, a rational trier of fact could not find based on the summary judgment record that Vonage’s system infringes this claim limitation. As such, summary judgment is granted on the issue of literal infringement.”).

132 See *id.* at 1317 (“Nonetheless, summary judgment is not warranted on the issue of infringement of this limitation under the doctrine of equivalents.”).

133 See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 737–38 (2002) (holding that prosecution history estoppel limits the scope of the doctrine of equivalents).

summary judgment reply brief, the court found that it was waived and disregarded it.¹³⁴

With the doctrine of equivalents in play, the court found that “Sprint has raised a genuine issue of material fact” of whether Vonage’s technology satisfied the standard “function/way/result” test typically used to determine whether an accused product is “equivalent” to the asserted patent claims.¹³⁵ Although one could debate whether the court should have held that a reasonable juror could find that the “way” Vonage’s gateways worked were substantially the same as that in Sprint’s claims, the court noticeably failed to consider whether Sprint effectively disclosed, but failed to claim, “IP interworking devices” in the specifications of the patents-in-suit.¹³⁶ This was potentially a critical oversight, because it is black-letter law that “when a patent drafter discloses but declines to claim subject matter . . . this action dedicates that unclaimed subject matter to the public.”¹³⁷ Although the applicable patents-in-suit did not expressly disclose IP interworking devices, they did disclose the use of the Internet “IP” protocol several times.¹³⁸ Moreover, while the advent of full-blown IP gateways was a few years away, IP “interworking devices” were well known in the prior art at the time of the priority date of the patents-in-suit. For example, I located a patent assigned to Motorola filed in 1993 that discloses a telephone that includes an “Interworking Function,” which connects it between a traditional PSTN telephone network and a data network.¹³⁹ The Motorola patent further discloses connecting the telephone to a TCP/IP network.¹⁴⁰ Although these facts are not decisive, Vonage could have likely made a solid argument that one of skill in the art would have read Sprint’s patents at issue to have disclosed, but not claimed, IP interworking devices.¹⁴¹ Because the claim term

134 *Sprint*, 500 F. Supp. 2d at 1318 (“Vonage cannot satisfy its initial summary judgment burden by relying on arguments it did not raise for the first time until its reply brief where Sprint has not had an opportunity to respond to those arguments.”). Assuming Sprint had amended the claims in the patents-in-suit in response to prior art, since IP interworking devices were clearly foreseeable at the time of the amendment, it seems very likely that *Festo* would have precluded doctrine of equivalents. See *Festo Corp.*, 535 U.S. at 738 (“There is no reason why a narrowing amendment should be deemed to relinquish equivalents unforeseeable at the time of the amendment and beyond a fair interpretation of what was surrendered.”).

135 See *Sprint*, 500 F. Supp. 2d at 1316–18 (citing *Aquatex Indus., Inc. v. Technische Solutions*, 419 F.3d 1374, 1382 (Fed. Cir. 2005)).

136 See *id.*

137 *Johnson & Johnston Assocs. Inc. v. R.E. Serv. Co.*, 285 F.3d 1046, 1054 (Fed. Cir. 2002) (en banc).

138 See U.S. Patent No. 6,665,294 col. 4 ll. 20–23, col. 6 ll. 20–25, col. 10 ll. 16–21, col. 11 ll. 19–28, col. 15 ll. 27–31 (filed Aug. 5, 2002).

139 See U.S. Patent No. 5,426,643 col. 3. ll. 12–19 (filed Nov. 1, 1993).

140 See *id.* at col. 1 ll. 25–44.

141 See *PSC Computer Prod., Inc. v. Foxconn Int’l, Inc.*, 355 F.3d 1353, 1360 (Fed. Cir. 2004) (“We thus hold that if one of ordinary skill in the art can understand the unclaimed disclosed teaching upon reading the written description, the alternative matter disclosed has been dedicated to the public.”).

was construed as covering only “ATM interworking devices,” it seems very likely that Vonage did not present such an argument or evidence on summary judgment,¹⁴² but that had it done so,¹⁴³ it might have prevented Sprint from relying on the doctrine of equivalents.¹⁴⁴

As mentioned earlier, it appears that Vonage failed to raise a written description defense on summary judgment.¹⁴⁵ Yet, Vonage likely had a strong defense of lack of written description, because the sole inventor of the patents-in-suit had apparently admitted that he viewed his invention as only applying to ATM, not IP, networks.¹⁴⁶ Although this defense is ultimately a question of fact¹⁴⁷—presumably, the underlying facts were not genuinely disputed. As such, it seems Vonage made a tactical mistake not arguing for summary judgment of invalidity of all asserted patents on this ground. At the very least, evidence of lack of written description would likely have more favorably colored the judge’s findings on non-infringement, particularly the doctrine of equivalents.¹⁴⁸ Of course, the publicly available pleadings indicate that Vonage’s counsel did not even recognize written description as a defense separate from non-enablement and indefiniteness, and this potential oversight may explain Vonage’s failure to lodge it at summary judgment, not to mention its failure to sufficiently develop the facts to do so.¹⁴⁹

Vonage also failed to raise any anticipation or obviousness defenses at summary judgment.¹⁵⁰ Despite the seemingly wide array of available prior art, Vonage was unable to find anything suitable to support a summary judg-

142 Vonage filed its motion for summary judgment and supporting brief under seal. *See* Defendants Vonage Holdings Corp. & Vonage Am., Inc.’s Motion for Summary Judgment, Sprint Commc’ns Co. v. Vonage Holdings Corp., 500 F. Supp. 2d 1290 (D. Kan. 2007) (No. 05-2433-JWL). However, given the apparent strength of the “unclaimed matter” argument—and the notable absence of any discussion of the issue in the court’s summary judgment order—it is very likely it did not present it to the court. *Sprint*, 500 F. Supp. 2d 1290.

143 Vonage’s apparent inability to assert strong arguments on the doctrine of equivalents was also apparent in the court’s opinion for another patent-in-suit, in which it stated: “[Vonage’s] argument is so cursory and undeveloped that the court could not even begin to find that Vonage is entitled to judgment as a matter of law based on this theory.” *Sprint*, 500 F. Supp. 2d at 1324.

144 Sprint also waived other potentially decisive non-infringement defenses. *See, e.g., id.* at 1326 (“Once again, the court will not consider this argument because it was not raised for the first time until Vonage’s reply.”).

145 *See supra* text accompanying notes 106–113.

146 *See supra* text accompanying notes 106–113.

147 *See* Falko-Gunter Falkner v. Inglis, 448 F.3d 1357, 1363 (Fed. Cir. 2006) (“Written description is a question of fact, judged from the perspective of one of ordinary skill in the art as of the relevant filing date.”).

148 *Cf.* Andrew J. Wistrich, Chris Guthrie & Jeffrey J. Rachlinski, *Can Judges Ignore Inadmissible Information? The Difficulty of Deliberately Disregarding*, 153 U. PA. L. REV. 1251, 1251–52 (2005) (“[J]udges are generally unable to avoid being influenced by relevant but inadmissible information of which they are aware.”).

149 *See supra* text accompanying note 108.

150 *See supra* text accompanying note 87.

ment motion.¹⁵¹ This omission is particularly notable because just a few months earlier the Supreme Court had issued its landmark opinion in *KSR International Co. v. Teleflex Inc.*,¹⁵² providing a firm basis for judges to invalidate patents at the summary judgment stage on grounds of obviousness.¹⁵³ If Vonage had further developed what appeared to be a relatively meager collection of prior art, it arguably would have been able to file a strong motion for invalidity due to obviousness. Presumably, part of its failure to do so stemmed from its experts' lack of familiarity with the technology of the patents-in-suit.¹⁵⁴

Vonage's ostensible fumbling at summary judgment is evidenced further by Sprint's success in excluding a number of Vonage's proffered defenses. In particular, the court granted Sprint's motion on Vonage's asserted defense of claim indefiniteness.¹⁵⁵ Indefiniteness at that time was difficult to show because it required that the claims be "insolubly ambiguous,"¹⁵⁶ and for this very reason, it was not usually successful as a defense.¹⁵⁷ Not only was the claim language well outside this narrow standard, the district court found that Vonage's expert "report provided no opinion or analysis on this defense."¹⁵⁸ Next, the court easily rejected Vonage's laches, estoppel, acquiescence, misuse, unclean hands, and patentable subject matter defenses, mainly because Vonage introduced no facts that could support them¹⁵⁹—but

151 See *supra* text accompanying note 103.

152 550 U.S. 398, 401–02, 419–20 (2007) (rejecting the Federal Circuit's "rigid" teaching-suggestion-motivation approach as the core test for obviousness).

153 See *id.* at 427 ("Where, as here, the content of the prior art, the scope of the patent claim, and the level of ordinary skill in the art are not in material dispute, and the obviousness of the claim is apparent in light of these factors, summary judgment is appropriate.").

154 See *supra* subsection I.B.1.a.

155 *Sprint Commc'ns Co. v. Vonage Holdings Corp.*, 500 F. Supp. 2d 1290, 1333 (D. Kan. 2007) ("But, the fact that the parties may disagree on the correct meaning of those claim terms does not render them indefinite. The critical point is that Vonage has not directed the court's attention to any particular claim terms that it contends are not amenable to construction, which as explained above is the applicable legal standard for invalidity under § 112, ¶ 2.").

156 *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1342 (Fed. Cir. 2003) ("[A] claim is indefinite under § 112 ¶ 2 if it is 'insolubly ambiguous, and no narrowing construction can properly be adopted.'" (quoting *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001))). Since that time, the Supreme Court has weakened the standard for indefiniteness, holding that "a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014).

157 UNIV. OF HOUS. LAW CTR., *Decisions for 2005–2009*, PATSTATS.ORG, http://www.patstats.org/2005-2009_composite.htm (last visited Nov. 17, 2014) (showing that, at the district court level, accused infringers raised the defense only in 78 decided cases over the period 2005–2009 and prevailed only 38% of the time).

158 *Sprint*, 500 F. Supp. 2d at 1331.

159 See *id.* at 1333–42.

also because the court prevented Vonage from relying on the Sprint-Cisco licensing agreement.¹⁶⁰ In this regard, the court pointed out Vonage's confusion between a laches defense, which relates to when suit is filed, and a prosecution laches defense, which relates to the amount of time a patentee spends prosecuting its patent.¹⁶¹

Additionally, the court chastised Vonage once again for its failure to meet imposed deadlines:

The court might be willing to put the parties to this inconvenience if Vonage had offered a legitimate justification for its belated reliance on the prosecution histories as the basis for its laches defense. Significantly, however, Vonage has not done so. In this respect, it is important to note that Vonage's approach to this issue is not unique. Rather, it is entirely typical of the manner in which Vonage has approached the entire pretrial phase of this case. Vonage has repeatedly raised arguments in a belated fashion and has engaged in tactics which the court believes are designed to delay the trial of this case. Its overall approach leads the court to believe that either (1) Vonage has not adequately prepared this case for trial, or (2) Vonage is attempting to benefit from "hide-the-ball" tactics. The court discounts the likelihood that Vonage is unprepared, as Vonage is represented by counsel who are undoubtedly well versed in patent litigation as well as the disclosure and supplementation requirements of the Federal Rules of Civil Procedure. Thus, the court can only conclude that Vonage's belated assertion of this patent prosecution defense theory must have been a strategic litigation decision.¹⁶²

As some consolation, the court did leave intact Vonage's marking defense because, although Sprint did not practice the patents, its licensee Cisco possibly did.¹⁶³ Of course, because Vonage could not introduce evidence of the Sprint-Cisco licensing agreement, its win here was essentially moot.¹⁶⁴ And while Vonage's non-infringement expert was perhaps a poor hire—and apparently did not even possess skill in the art that he set out as applicable in *his own* expert report¹⁶⁵—the court, perhaps taking pity on

160 *Id.* at 1335–36 (“Vonage explains that it cannot present this evidence in support of its opposition to Sprint’s motion for summary judgment because Magistrate Judge Waxse struck from the pretrial order all references to the Sprint/Cisco agreements, including Vonage’s contentions in support of its defense of estoppel.”).

161 *See id.* at 1337 (“The court will assume, without deciding, that Vonage’s assertion of a general laches defense in its amended answers was sufficient to also set forth the defense of prosecution laches. Even so, it is important to note that the factual underpinnings of these two defenses are quite distinct.”).

162 *Id.* at 1338–39.

163 *See id.* at 1341–42 (“Indeed, viewing the evidence in the light most favorable to Vonage, as the court must on Sprint’s motion for summary judgment, a rational trier of fact could conclude that Cisco has done so.”).

164 *See id.* at 1334–35 (noting that Vonage relied on the “Sprint/Cisco agreements” in support of its marking arguments).

165 *See* Sprint’s Brief in Support of Its Motion to Exclude, *supra* note 95, at 6. Specifically, Sprint quotes Halpern’s expert report that states:

Vonage at this point in the opinion, decided nonetheless that he passed *Daubert* muster.¹⁶⁶

In sum, Vonage failed to raise or waived not just one, but several seemingly strong defenses at summary judgment. Its behavior was so notable that the court rebuked Vonage for its “cursory citations,” selective omissions, “decision to ignore the[] rules,” “belated” arguments, and “hide-the-ball tactics.”¹⁶⁷ Sprint, on the other hand, won on most of the issues it raised, eliminating a large number of potential defenses from the case. With such a one-sided result, the parties headed into trial with the odds strongly favoring Sprint.

d. Vonage’s Trial Loss and Ultimate Settlement

At trial, Vonage was in a precarious situation. In addition to losing key arguments at summary judgment, Vonage lost potentially decisive issues in an important pretrial order construing further claim terms and rejecting its prosecution history estoppel arguments.¹⁶⁸ Ultimately, the jury found infringement of all fourteen claims at issue in six different patents and held none of the claims were invalid.¹⁶⁹ It awarded \$69.5 million in damages for past infringement at a 5% reasonable royalty rate, which applied to future sales.¹⁷⁰ Sprint then moved to modify the judgment to include an injunction against future infringement.¹⁷¹ Before the court ruled, the parties settled for an estimated \$80 million.¹⁷² Presumably, part of the settlement was driven by a set of patents that Vonage purchased from Digital Packet Licensing, which had a pending infringement suit against Sprint, as well as AT&T and

A person of ordinary skill in the art at the time of the effective filing dates of the Sprint Patents would have had a bachelors degree in electrical engineering, computer engineering or computer science, and at least three years experience in the telecommunications industry. The person would also have some familiarity with narrowband and broadband networks, telecommunications signaling requirements and the Public Switched Telephone Network (“PSTN”).

Id. at 3–4. Halpern did not appear to have familiarity with signaling requirements for the PSTN. *Id.* at 5.

166 *Sprint*, 500 F. Supp. 2d at 1342–45 (noting that the Supreme Court has instructed district courts to perform a “gatekeeping” function by restricting expert testimony to that by witnesses qualified by “knowledge, skill, experience, training, or education” (quoting *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 588, 597 (1993))).

167 *See supra* text accompanying notes 122, 162.

168 *Sprint Commc’ns Co. v. Vonage Holdings Corp.*, 518 F. Supp. 2d 1306, 1323–27 (D. Kan. 2007) (memorandum and order).

169 Verdict at 1–7, *Sprint*, 500 F. Supp. 2d 1290 (No. 05-2433-JWL), 2007 WL 2790718.

170 *Id.* at 6.

171 Sprint’s Motion to Modify Judgment to Include Permanent Injunction, *Sprint*, 500 F. Supp. 2d 1290 (No. 05-2433-JWL).

172 *See* Nathan Eddy, *Vonage, AT&T Agree on Patent Lawsuit Settlement*, CRN (Dec. 26, 2007, 2:14 PM), <http://archive.today/BH6T>.

Nortel Networks.¹⁷³ Before settlement, there were reports that Sprint might purchase Vonage as part of settling the case, but no deal was consummated.¹⁷⁴

2. *Verizon v. Vonage*

The Verizon suit was similar in many ways to the Sprint suit.¹⁷⁵ After Vonage had taken away hundreds of thousands of Verizon subscribers,¹⁷⁶ Verizon sued Vonage for patent infringement in June 2006 in the so-called “rocket docket” of the Eastern District of Virginia.¹⁷⁷ The seven patents at issue covered gateway interfaces between packet-switched networks, like the Internet, and circuit-switched networks, like the PSTN;¹⁷⁸ billing and fraud detection;¹⁷⁹ call forwarding and voicemail;¹⁸⁰ and the use of Wi-Fi cordless handsets on a VoIP network.¹⁸¹

In the midst of discovery and pretrial disputes, the parties briefed claim construction issues.¹⁸² Overall, the district court construed the disputed claim terms broadly.¹⁸³ A few days later the court denied both parties summary judgment.¹⁸⁴ Unfortunately, a copy of the order is neither available

173 Shawn Young, *Vonage Buys Three Internet Phone Service Patents*, WALL ST. J. (July 11, 2006, 12:01 AM), <http://online.wsj.com/news/articles/SB115254076792402306>.

174 Eric Savitz, *Vonage Up on Inexplicable Rumors Sprint May Buy It*, SEEKING ALPHA (Apr. 18, 2007, 4:20 PM), <http://seekingalpha.com/article/32645-vonage-up-on-inexplicable-rumors-sprint-may-buy-it>.

175 However, because of the few available electronic documents in the Verizon case as well as space considerations, I recount this case in much less detail than the Sprint case.

176 See *supra* text accompanying note 66.

177 Complaint for Injunctive & Other Relief, *Verizon Servs. Corp. v. Vonage Holdings Corp.*, No. 06-0682, 2007 WL 528749 (E.D. Va. 2007), 2006 WL 1682996.

178 U.S. Patent Nos. 6,104,711 (filed Mar. 6, 1997), 6,282,574 (filed Feb. 24, 2000), 6,128,304 (filed Oct. 23, 1998).

179 U.S. Patent Nos. 6,430,275 (filed July 28, 1999), 6,137,869 (filed Sept. 16, 1997).

180 U.S. Patent No. 6,298,062 (filed Oct. 23, 1998).

181 U.S. Patent No. 6,359,880 (filed July 30, 1999).

182 Verizon’s Opening Claim Construction Brief, *Verizon*, No. 06-0682, 2007 WL 528749 (E.D. Va. 2007); Defendants’ Opening Claim Construction Brief, *Verizon*, No. 06-0682, 2007 WL 528749 (E.D. Va. 2007).

183 *Verizon*, No. 06-0682, 2007 WL 528749, at *3. For instance, the court construed “maintaining by said unitary logical object of a record of the . . . progress” as “[m]aintaining by a single logical database, which includes related call processing logic and supporting infrastructure, a record of call status (e.g., setup, in progress, termination) that can be used for billing, usage tracking, and other purposes.” *Id.* (internal quotation marks omitted). Because “unitary logical object” was interpreted as a “single logical database,” presumably a distributed database with multiple sub-databases connected “logically” into one database would meet the limitation. See *id.* As the remainder of the limitation concerns standard functions in telecommunications systems, any VoIP system designed to support end-user subscribers would have likely met the court’s interpretation of this claim element. See, e.g., RICHARD SWALE, VOICE OVER IP: SYSTEMS AND SOLUTIONS 248, 317–20, 390 (2001) (describing call status, billing, usage tracking, and service logic).

184 Order Denying Motion for Summary Judgment, *Verizon*, No. 06-0682, 2007 WL 528749.

from the federal courts' PACER database nor Westlaw or Lexis. However, based on a review of the docket in the case, Vonage apparently filed only a summary judgment motion of non-infringement, but not invalidity.¹⁸⁵ In this regard, Vonage hired the same invalidity expert as in the Sprint case, Frank Koperda, who as I recounted earlier had some experience in interfacing traditional telephony platforms with digital networks, but not since the mid-1980s.¹⁸⁶ Like the Sprint case, presumably Koperda's lack of recent experience weakened Vonage's invalidity case.¹⁸⁷

After a several week trial, the jury found that Vonage infringed three of Verizon's patents. Overall, it awarded \$58 million in reasonable royalties for past infringement and a 5.5% royalty rate on future sales.¹⁸⁸ Subsequently, the court granted an injunction against future infringement,¹⁸⁹ which the Federal Circuit subsequently stayed pending appeal.¹⁹⁰ On appeal, the Federal Circuit upheld claim constructions on two of the three patents, affirmed the findings of infringement and validity, and reversed and remanded on one of the patents.¹⁹¹ With the injunction in place from the two infringed patents, Vonage decided to settle the case for between \$80 and \$120 million.¹⁹²

3. *AT&T v. Vonage*

After Vonage had settled the suits filed by Sprint and Verizon, totaling over \$160 million,¹⁹³ less than one month later, AT&T launched a suit against it in another rocket docket, the Western District of Wisconsin.¹⁹⁴ Like the Sprint patents, AT&T's patent disclosed telephony across an ATM network but contained claims not expressly limited to any type of network.¹⁹⁵

185 *Id.*

186 *See supra* text accompanying note 99.

187 *See id.*

188 Verdict Form at 4, *Verizon*, No. 06-0682, 2007 WL 528749 (E.D. Va. 2007), 2007 WL 1751100.

189 *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 228 F. App'x 986, 986 (Fed. Cir. 2007) (per curiam).

190 *Id.*

191 *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1298 (Fed. Cir. 2007).

192 Anne Broache, *Vonage, Verizon Settle Patent Spat for Up to \$120 Million*, CNET (Oct. 25, 2007, 1:47 PM), http://news.cnet.com/8301-10784_3-9804709-7.html. If Vonage were such a competitive threat to Verizon, one might wonder why Verizon did not leave its injunction in place, thereby shutting down Vonage entirely. In this regard, Vonage had stated that it could implement a non-infringing design-around to avoid infringing Verizon's patents. *See id.* Presumably, Verizon decided that a settlement was preferable to the risk that Vonage could switch to a non-infringing alternative.

193 *See Eddy, supra* note 172.

194 Complaint, *AT&T Corp. v. Vonage Holdings Corp.*, No. 07-CV-00585 (W.D. Wis. Oct. 17, 2007).

195 *See generally* U.S. Patent No. 6,487,200 (filed Apr. 4, 1996) (showing that AT&T's patent contained claims not *expressly* limited to any type of network).

(Because I represented Vonage in this matter, I have chosen to refrain from a detailed analysis of infringement, invalidity, and enforceability.) Although at least some industry observers believed that Vonage had a strong defense of non-infringement and invalidity,¹⁹⁶ it quickly settled the case for about \$40 million.¹⁹⁷ Presumably, Vonage had become skeptical by that point of its ability to convince judges and juries that the patents asserted against it were invalid or unenforceable, or that its technology was sufficiently different from traditional packet networks, like ATM networks, so as not to infringe. Assuming as much, Vonage's decision to settle was certainly understandable.

C. *The Aftermath of the Trilogy and Subsequent Cases*

Following the settlements of roughly \$200 million,¹⁹⁸ which was about one quarter of Vonage's annual revenue at the time,¹⁹⁹ Vonage's marketing expenditures decreased and its subscriber growth slowed substantially.²⁰⁰ Indeed, Vonage was almost delisted from the New York Stock Exchange,²⁰¹ and some observers predicted bankruptcy.²⁰² From the time of Vonage's IPO (about seven months after the Sprint suit was filed) through the AT&T settlement, its stock price declined from \$17 per share to about \$2 per share.²⁰³ Although other factors certainly accounted for the decline,²⁰⁴ the trilogy of lawsuits arguably played a major role, particularly given the substantial declines in Vonage's stock price following unfavorable rulings in the cases.²⁰⁵

The highly damaging effects imposed on Vonage by the patent bully carriers stand in contrast to the relative minor effects of a series of suits filed against Vonage before and afterward by a variety of non-practicing entities

196 See Masnick, *supra* note 103.

197 See Eddy, *supra* note 172.

198 See *id.*

199 Vonage Holdings Corp., Annual Report (Form 10-K), at 40, (Mar. 17, 2008), available at <http://ir.vonage.com/secfiling.cfm?filingID=1193125-08-59036>.

200 David Shabelman, *Some Hope for Vonage*, THEDEAL.COM (Nov. 9, 2007), available at LEXIS, News-All file database; see also Seth Wallis-Jones, *Growth Slows but Vonage Trims Losses on Path to Profits*, GLOBAL INSIGHT (Feb. 14, 2008), available at LEXIS, News-All file database.

201 See João-Pierre S. Ruth, *Vonage Faces Hangup from Stock Exchange*, NJBiz (Feb. 16, 2009), available at 2009 WLNR 3234320.

202 See Shabelman, *supra* note 200.

203 See *Vonage Holdings Corporation (VG)*, YAHOO! FIN., <http://finance.yahoo.com/e/charts?s=VG+Interactive#chart3:symbol=vg;range=my;charttype=line;crosshair=on;ohlcv=0;logscale=off;source=undefined> (last visited Nov. 17, 2014).

204 See Blevins, *supra* note 36, at 119–20 (cataloguing technological and regulatory problems that affected Vonage).

205 See *id.* at 120 (“While these [other] problems certainly contributed to Vonage’s problems, the patent litigation threat posed a more serious and even existential threat.”); *id.* at 119 (“News of these decisions drove Vonage’s stock to around one dollar, its historic low at the time.”); Todd R. Weiss, *Vonage CEO Resigns; Company Moves to Cut Costs*, COMPUTERWORLD (Apr. 12, 2007, 1:00 AM), <http://www.computerworld.com/article/2544667/networking/vonage-ceo-resigns—company-moves-to-cut-costs.html> (reporting that Vonage’s stock dropped 24% following the injunction in the *Verizon* case).

(NPEs). Overall, Vonage was involved in three different NPE suits around the time of the trilogy, all of which settled.²⁰⁶ However, unlike the suits filed by the incumbent carriers, none of the NPEs extracted a large toll from Vonage.²⁰⁷ So, at least for Vonage, the “bullies” inflicted much more damage than the “trolls.”

Furthermore, Vonage did not fare so well in the infringement suits involving patents it purchased to fend off Sprint. In those suits, Digital Packet Licensing—the original plaintiff—sued Sprint, AT&T, Nortel, MCI, and others.²⁰⁸ After Vonage acquired the patents, Nortel shrewdly asserted a number of patents of its own against Vonage.²⁰⁹ Ultimately, the cases settled with Vonage and Nortel licensing their patents to each other for no fee,²¹⁰ and Vonage appeared to collect little to nothing from the other defendants.²¹¹ Of course, Vonage likely spent millions in litigation fees on the cases.²¹²

206 *Web Telephony, LLC v. Bell Atl. Commc'ns, Inc.*, No. 07-CV-00085 (E.D. Tex. dismissed June 23, 2008); *Klausner Technologies, Inc. v. Vonage Holdings Corp.*, No. 06-CV-00275 (E.D. Tex. dismissed Oct. 31, 2007); *Rates Tech. Inc. v. Vonage Am., Inc.*, No. 05-CV-04727 (E.D.N.Y. dismissed Mar. 9, 2007).

207 *See Vonage Holdings Corp., Quarterly Report (Form 10-Q)*, at 9, (Nov. 14, 2007), available at <http://ir.vonage.com/secfiling.cfm?filingID=1193125-07-247563> (noting that neither the Rates Technology nor the Klausner Technologies settlements were “material” transactions); 8x8, Inc., Annual Report (Form 10-K), at 29, (May 27, 2010), available at <http://investors.8x8.com/secfiling.cfm?filingID=1136261-10-121> (“As part of the settlement, we agreed to pay eight quarterly payments totaling \$800,000 over the next two years between April 2009 and December 2010. Under the transaction, we expensed \$339,000 of the patent settlement costs during the year ended March 31, 2009 that were related to benefits received by us in and during the periods prior to fiscal year 2009. We recorded the remaining license fee of \$432,000 as other long term assets as of March 31, 2009 and we are amortizing this amount to cost of service revenues in the Consolidated Statements of Operations over the remaining life of the primary patent, which expires in September 2017.”).

208 *Vonage Holdings Corp. v. MCI, Inc.*, No. 05-CV-00451 (E.D. Tex. dismissed June 15, 2007).

209 *Nortel’s Answer and Counterclaims at 7–9, Vonage Holdings Corp. v. Nortel Networks, Inc.*, No. 07-507 (D. Del. Dec. 14, 2007).

210 *See Vonage and Nortel Settle Patent Dispute*, REUTERS (Dec. 31, 2007, 5:10 PM), <http://www.reuters.com/article/2007/12/31/us-vonage-patentdispute-idUSWNAS541520071231> (“Vonage Holdings Corp . . . said it has agreed to settle a patent dispute with Nortel Networks . . . with no payment of damages, sending its share up more than 8 percent.”).

211 I could find no reports of the settlement amounts with these defendants, but presumably if the amounts had been large, they would have been reported in Vonage’s public filings. *See* 17 C.F.R. § 229.103 (2013) (stating that public companies must disclose to the SEC in their annual reports “material pending legal proceedings”).

212 *See AM. INTELLECTUAL PROP. LAW ASS’N, REPORT OF THE ECONOMIC SURVEY 25–26* (2007) (reporting patent infringement suits with more than \$25 million at stake have median defense costs through trial of \$5 million).

CONCLUSION: REFLECTIONS ON THE TRILOGY AND THE NEED
FOR FURTHER STUDY

As I have recounted, Vonage—a startup company providing a highly competitive, low-cost telephone service that drew millions of subscribers away from the incumbent carriers—did not fare well in the U.S. patent system.²¹³ Most importantly, Vonage paid out roughly \$200 million in settlement amounts, plus millions in attorneys’ fees, placing it at the brink of insolvency.²¹⁴ Although Vonage ultimately escaped the “death penalty,” its value decreased precipitously, and the suits very likely caused permanent damage to the health of the company.²¹⁵

One might quip, if Vonage lost its Sprint and Verizon cases, then the payout was deserved. However, as I describe above, much of Vonage’s woes in the Sprint case appeared to stem from tactical errors.²¹⁶ Presumably, those errors were driven in large part by Vonage’s limited litigation budget and inexperience in patent suits, especially compared with Sprint’s very large budget and extensive litigation experience.²¹⁷ These sorts of differentials among litigants highlight a problem in the patent bullying context not present in the patent troll context—namely, that patent bullies not only can force settlements in weak cases, but in fact can win at judgment in weak cases.²¹⁸ The ability of patent bullies to achieve such results, of course, compounds the distortions already present in patent litigation and licensing.²¹⁹ Indeed, the so-called “trolls”—which were much smaller than Sprint and Verizon—did not achieve results as favorable against Vonage.²²⁰ Nor do trolls use litigation to acquire competitors at bargain basement prices—which Sprint apparently considered.²²¹ Furthermore, when Vonage attempted to cash out on its patents against Nortel Networks, it was smacked right back, and ultimately settled for nothing.²²²

Generalizing from the Vonage trilogy, a few important problems for the patent system as a whole emerge. First, like the trolls, patent bullies can take advantage of high litigation costs and the complexity of patent litigation to

213 See *supra* Part I.

214 See *supra* text accompanying notes 198–205.

215 See *supra* text accompanying notes 198–205.

216 See *supra* Sections IA–D.

217 See *supra* text accompanying notes 70–73 (describing the asymmetries between Vonage and Sprint).

218 See Jennifer F. Miller, Note, *Should Juries Hear Complex Patent Cases?*, 2004 DUKE L. & TECH. REV. 4, ¶ 32 (“One byproduct of speculation that juries are unable to comprehend the subject matter of patent infringement cases is the concern that the decisions they render are arbitrary, unpredictable, and based on considerations other than the relevant law.”).

219 See *supra* notes 19–31 and accompanying text.

220 See *supra* text accompanying notes 206–207.

221 See *supra* text accompanying note 174.

222 See *supra* text accompanying notes 209–212.

gain leverage in suits over smaller defendants.²²³ Importantly, this leverage can stem from bullies' increased odds of winning otherwise "weak" suits.²²⁴ And, unlike the troll context, patent bullies will ordinarily be entitled to injunctions.²²⁵ Coupled with the high risk aversion of many small defendants, these advantages can place extreme pressure on defendants to settle, or result in inaccurate judgments, leading to substantial economically distorting effects.²²⁶ Second, also unlike the troll context, settlements and judgments with bullies do not only result in money changing hands. Rather, bullies often desire to acquire a smaller competitor's technology, either through a coerced license or a forced purchase of the competitor's entire company.²²⁷ Arguably, these results can wreak even more damage on the competitive environment than suits by trolls.²²⁸

223 See Stuart Minor Benjamin & Arti K. Rai, *Fixing Innovation Policy: A Structural Perspective*, 77 GEO. WASH. L. REV. 1, 22 (2008) ("[T]he PTO's issuance of broad patents has allowed Verizon and other incumbent providers to pursue via government-granted property rights what they have been unable to achieve via FCC regulation."); Cheryl Milone, *Stopping Abusive Patent Litigants, Not Innovation*, FED. LAW. OCT./NOV. 2013, at 38, 42 (quoting a patent litigator as stating: "It is not easy for a district court judge to stop what trolls rely upon—namely, the use of litigation expense and leverage to extract settlements." (internal quotation marks omitted)).

224 See Meurer, *supra* note 41, at 515 ("[A] weak lawsuit . . . may impose [significant costs] on the defendant. A defendant may settle an opportunistic lawsuit to avoid the nuisance of mounting a defense.").

225 See Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1, 10 (2012) (finding that practicing entities secured injunctions 79% of the time compared to PAEs 26% of the time in district courts from July 2006 through August 2011); Pamela Samuelson, *Are Patents on Interfaces Impeding Interoperability?*, 93 MINN. L. REV. 1943, 2007 (2009) ("[I]t is noteworthy that the Federal Circuit was inhospitable to Vonage's argument that an injunction should not issue to block its use of Verizon's patented interface because of the impacts of the injunction for millions of users of its VoIP services. In the post-*eBay* caselaw thus far, injunctive relief has generally been withheld only in cases that appear to involve 'patent trolls.'" (footnotes omitted)).

226 See Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1993 (2007) ("[T]he threat of an injunction can enable a patent holder to negotiate royalties far in excess of the patent holder's true economic contribution."); cf. Bernard H. Chao, *After eBay, Inc. v. MercExchange: The Changing Landscape for Patent Remedies*, 9 MINN. J.L. SCI. & TECH. 543, 555 (2008) ("If internet telephony is actually superior to traditional landline technology, the public may have been disserved by an injunction even in the presence of direct competition."); David P. Kohn, *The Split: Constitutional and Policy Bases for Establishing Separate U.S. Patent Courts*, 16 INTELL. PROP. L. BULL. 115, 131 (2012) ("Unpredictability causes patent defendants to fear the outcomes of litigation, even in cases when the law may be on their side. Patent trolls have used this unpredictability as leverage to force monetary settlements, and thereby fund their future activities.").

227 See *supra* text accompanying notes 29–30.

228 See Meurer, *supra* note 41, at 512 ("[A]nti-competitive lawsuits . . . exclude the defendant from the market completely . . ."); Kevin Werbach, *Connections: Beyond Universal Service in the Digital Age*, 7 J. TELECOMM. & HIGH TECH. L. 67, 89–90 (2009) ("Vonage had business problems unrelated to the patent litigation, but the fact that it was the company targeted by patent-holders raises the possibility that the patents are being used anti-competitively. In the early days of telephony, AT&T used its patents over key technologies for

Of course, Vonage's story is just one, and it may not be illustrative of suits by large, practicing entities against smaller competitors. One fact is certain, however: the prevalence of large company-small company suits is not low. In a study by Jay Kesan and Gwendolyn Ball of U.S. patent infringement actions, roughly 25% of the cases were filed by a plaintiff that was substantially larger than the defendant.²²⁹ In order to assess whether these suits present a serious public policy problem, a comprehensive determination and analysis of the outcomes and effects of such suits is needed. Only further work can decidedly answer whether these suits truly present a systemic "patent bully" problem. In the meantime—much like the "patent troll" problem—we are left mainly with anecdote to fashion policy.²³⁰

long-distance transmission to maintain its dominance over independent carriers. The current VoIP situation bears some similarities to that behavior." (footnote omitted)); Timothy B. Lee, *Vonage is the Latest Victim of Patent Abuse*, AM. ENTER. INST. (Apr. 24, 2007), <http://www.american.com/archive/2007/april-0407/vonage-is-the-latest-victim-of-patent-abuse> (stating that the U.S. patent system "seems to allow a deep-pocketed incumbent to drive an innovative competitor out of business").

229 See Ball & Kesan, *supra* note 41, at 32 tbl.3. Another study found that 8% of suits in the hardware, software, and financial sectors fit a potential "predation" profile, specifically suits by "public or large companies" against a "small" private company. Chien, *supra* note 1, at 1603 tbl.5. However, this study underestimated the total percentage of potentially predatory suits, because "large" companies were limited to those earning more than \$100 million in revenue per year and "small" companies to those earning less than \$10 million per year, and additionally excluded all small, publicly traded defendant suits. *Id.* at 1614.

230 See John M. Golden, *Principles for Patent Remedies*, 88 TEX. L. REV. 505, 560 (2010) ("[D]espite a wealth of anecdote and speculation about patent trolls, there still seems a dearth of empirical evidence that licensor patentees systematically behave abusively."); Milone, *supra* note 223, at 43 ("One of the problems with today's debate over patent trolls is that all too often it is driven by anecdote rather than by fact and careful analysis and also evinces a troubling lack of historical perspective.").

