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Cover Page Footnote

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Accountability in the Patent Market Part II: Should Public Corporations Disclose More to Shareholders?

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INTRODUCTION

For approximately ten years beginning in the early 2000s and ending somewhat soon after the implementation of the America Invents Act ("AIA") in 2011, all of the "water-cooler talk" was about the expanding patent market and increasing patent values. Since 2011, for business method and software patents, gene patents and medical diagnostic patents, and standard essential patents ("SEP"), the water cooler is no longer full of Kool-Aid and is viewed by some instead as a "glass-half-empty." These types of patents currently hold a fraction of the transaction and enforcement value they once were perceived to hold because of legislative, judicial, and other recent events to be highlighted in this Article. This phenomenon has resulted in a devaluation of these patent assets in general, if even just because a chilling effect has restricted their owners' ability—or willingness—to assert or transact for them in the current patent market environment.

A number of large companies holding vast portfolios of these types of patents, or smaller companies relying on business model protection from smaller portfolios, are public companies with corporate disclosure requirements. The requirements include an obligation to disclose to shareholders and other potential investors the value of their assets, any known risks and liabilities, and other material non-public information, including an ongoing obligation to update previously disclosed information. It is manifest that patents,

their use, and enforcement affect shareholder value.[1] It should be manifest, then, that material changes to patent holdings, their usability, and enforceability, as well as known patent risks and license requirements, constitute information that shareholders need. It is not manifest, however, that companies are under any requirement to disclose this information to current and future investors, or that companies perceive any ethical or other obligation to provide more

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[1] *See* SANGJUN NAM & CHANGI NAM, THE IMPACT OF PATENT LITIGATION ON SHAREHOLDER VALUE IN THE IT INDUSTRY 3 (2012), http://econstor.eu/bitstream/10419/72514/1/742699536.pdf [http://perma.cc/49TL-KK7P] ("Bhagat, Bizjak and Coles (1998), using an event study, showed that the wealth effect of patent litigation is negative for defendant firms and insignificant for plaintiff firms. Lerner (1995) investigated the wealth effect of patent litigation on biotechnology firms and found a negative effect on stock prices. Bessen and Meurer (2007) examined the negative impact of a patent lawsuit on shareholder value using a large sample based on the date of the filing of the lawsuit for US public firms from 1984 to 1999. The results showed that the patent litigation filing announcement has a negative effect on defendant firms, after controlling certain factors pertaining to firm characteristics."). Patent-related events, including litigation, can have a serious impact on corporate health. *See Abusive Patent Litigation: The Impact on American Innovation and Jobs, and Potential Solutions: Hearing Before the Subcomm. on Courts, Intellectual Property, & the Internet of the H. Comm. on the Judiciary*, 113th Cong. 11 (2013); *see also, e.g.*, *Diomed Patent Defendant Files for Chapter 11*, BOS. BUS. J. (Jan. 22, 2008, 2:40 PM), http://www.bizjournals.com/boston/blog/mass-high-tech/2008/01/diomed-patent-defendant-files-for-chapter-11.html [http://perma.cc/2SG7-QW7Q] (reporting that Total Vein Solutions LLC, which Diomed sued for patent infringement in 2004, filed for Chapter 11 bankruptcy protection); Ameet Sachdev, *Football Gear Maker Files for Bankruptcy After Losing Patent-Infringement Suit*, CHI. TRIB. (Sept. 14, 2010), http://articles.chicagotribune.com/2010-09-14/business/ct-biz-0914-chicago-law-20100914_1_schutt-sports-riddell-patent [http://perma.cc/F9VC-B6TW] (noting that Schutt Sports Inc. filed for bankruptcy a month after it was hit with $29 million in damages for violating a rival's patent). Additionally, studies have offered that, at least with regard to the S&P 500, most corporate value is tied to intangible assets. *See Ocean Tomo's Intangible Asset Market Value Study*, OCEAN TOMO (Dec. 9, 2013), http://www.oceantomo.com/2013/12/09/Intangible-Asset-Market-Value-Study-Release/ [http://perma.cc/L3QJ-JWH5]. As Ocean Tomo's Chairman James E. Malackowski explained:

> Within the last quarter century, the market value of the S&P 500 companies has deviated greatly from their book value. This "value gap" indicates that physical and financial accountable assets reflected on a company's balance sheet comprises less than 20% of the true value of the average firm . . . . Our further research shows that a significant portion of this intangible value is represented by patented technology.

Id.

information about these assets or risks other than blanket and boilerplate statements in their disclosures.

This Article identifies the general devaluation and/or increased risk of invalidation of these types of patents only as an example of information that could be important to shareholders. It then describes the impact this devaluation and known patent liabilities could have on corporate value, presents the requirements for particular companies to disclose patent information to shareholders and policy reasons for strengthening these requirements, and proposes that public companies could do more—or could be required to do more—to limit their risk and increase information transparency to investors.

Part I of this Article outlines the recent events that have devalued business method and software patents, gene and medical diagnostic patents, and SEPs. Part II utilizes filtered patent issuance and acquisition data to identify entities that have large or significant holdings of such patents, and explains the impact these occurrences could have on these entities. Emphasis will additionally be given to particular acquisitions by public companies, especially those that were disclosed to investors either through a Securities Exchange Commission ("SEC") filing, press release, or public analyst call. Part III will describe the public disclosure requirements of public companies related to patent assets and the procedures that must be taken to comply with those requirements. This Part will also discuss the policy reasons for carefully considering patent-related disclosures and justifications for requiring additional disclosures related to certain patent information, including potential patent risks and liabilities, such as known licensing obligations otherwise not discoverable by investors. Part IV will review the activities of those entities identified in Part II to provide commentary on those activities in light of the requirements discussed in Part III. Part IV will conclude that current practices may not leave such companies susceptible to risk of statutory penalty or shareholder suit under current precedent and court interpretation of the requirements. Yet, there are defensible reasons for requiring additional patent information disclosures to protect shareholders. Because shareholders are now "awakening" to the importance of pa-

tent information, it may be best for both shareholders and corporations to increase the required disclosures.

I. EMERGENCE OF A CONSTRICTED PATENT MARKET

As I pointed out in a previous publication,[2] four times more patent applications were filed in 2012 than in 1975.[3] This resulted in an increased focus on intellectual property ("IP") protection and enforcement, which is evidenced by the steady rise in patent litigation since 1990.[4] Patent litigation saw an unprecedented thirty percent increase in filings in 2012 to reach 5,000 patent suits filed in a year for the first time in history.[5] The pattern of increased patent and litigation filings also drove new strategic activity in the patent market, highlighted by privateering and collaborative ventures meant to create anonymous network effects and third-party beneficiary advantages to extract value.[6] For example, in January 2012, wireless firm Adaptix sold more than 200 patents to patent licens-

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[2] Ian D. McClure, *Accountability in the Patent Market: A Duty to Monitor Patent Risk from the Boardroom*, 31 SANTA CLARA HIGH TECH. L.J. 217, 218–19 (2015).

[3] *U.S. Patent Statistics Chart Calendar Years 1963–2014*, U.S. PATENT & TRADEMARK OFFICE, http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm [http://perma.cc/VZ48-VJH9] (last visited Nov. 2, 2015). Utility patent application filings actually decreased in 1977, 1978, 1979, 1983, 1991, 1996, 2008, and 2009, but they continued their upward trajectory nonetheless. *See* Robert Sterne & Trevor Chaplick, *Why Directors Must Take Responsibility for Intellectual Property*, IAM MAG., Feb./Mar. 2005, at 16, 20 ("The role of IP in certain industry sectors was much less prominent a decade ago . . . . Today all industry sectors embrace IP.").

[4] *See id.*

[5] *2013 Patent Litigation Study*, PRICEWATERHOUSECOOPERS (2013), http://www.pwc.com/en_US/us/forensic-services/publications/assets/2013-patent-litigation-study.pdf [http://perma.cc/CJ8U-MP65].

[6] In the absence of a central marketplace, third-party entities and syndicates, such as RPX Corporation, Allied Security Trust, LOT Network, and Intellectual Ventures, act as agents on behalf of market participants to provide access, anonymity, and collective network effects in the market. *See generally* ALLIED SECURITY TR., http://www.alliedsecuritytrust.com [http://perma.cc/J23B-SVY6] (last visited Nov. 2, 2015); INTELL. VENTURES, http://www.intellectualventures.com [http://perma.cc/6DRH-DYRK] (last visited Nov. 2, 2015); LOT NETWORK, http://www.lotnet.com/lotnet-solution/index.cfm [http://perma.cc/2EMJ-4M4P] (last visited Nov. 2, 2015); RPX CORP., http://www.rpxcorp.com [http://perma.cc/6BPA-4J4W] (last visited Jan. 8, 2016).

ing firm Acacia.[7] In July 2012, Fujifilm sold 1,200 patents to patent licensing and technology firm Universal Display.[8] On December 16, 2013, Panasonic sold 900 patents to patent licensing firm Wi-Lan, and on January 6, 2014, it sold 500 additional patents to patent licensing firm Inventergy.[9] Nokia has sold its patents to various licensing agent firms more than twenty times since 2008.[10] These represent just a fraction of the similar deals consummated in the past five years.[11] Moreover, AT&T, among other companies, has developed webpages dedicated to offering certain of its patents for sale.[12] To capture defensive value through a network effect, companies have signed up in large droves to join the memberships of companies such as RPX Corporation,[13] Allied Security Trust,[14] or Unified Patents.[15] A goal of all of these activities, it seems, is to maintain brand reputation by limiting identity discovery and blowback, while still generating monetary return and/or clearing the market of risk.

For certain types of patents, however, the abovementioned pattern has stopped. These include business method and software pa-

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[7] *See* Ben Dummett, *Acacia to Acquire Adaptix for $160 Million*, WALL ST. J. (Jan. 12, 2012), http://www.wsj.com/articles/SB10001424052970204409004577157470455118362 [http://perma.cc/Z5N6-VGM4].

[8] *See FUJIFILM Corporation Sells Its Worldwide OLED Patent Portfolio to Universal Display Corporation for US$105 Million*, FUJIFILM (July 24, 2012), http://www.fujifilm.com/news/n120724.html [http://perma.cc/MW2W-WEZB].

[9] Joff Wild, *Panasonic Makes a Major Privateering Play as Japanese Companies Seek to Sweat Their Patents*, IAM BLOG (Jan. 10, 2014), http://www.iam-media.com/Blog/Detail.aspx?g=9375cbd5-7354-41fe-bd18-32a5d392bfde [http://perma.cc/UN6X-3SES].

[10] Susan Decker, *Patent Privateers Sail the Legal Waters Against Apple, Google*, BLOOMBERG (Jan. 10, 2013, 12:00 PM), http://www.bloomberg.com/news/articles/2013-01-11/patent-privateers-sail-the-legal-waters-against-apple-google [http://perma.cc/J6A5-W7GU] (observing that Nokia has transferred its patents to privateers for licensing income more than twenty times since 2008).

[11] For example, Tynax is a full-service patent brokerage representing buyers or sellers in a variety of patent-related transactions and has tens of thousands of patents flagged as potentially available for sale on its market. *Patent Brokering Services for Buyers and Sellers*, TYNAX, http://www.tynax.com/services.php [http://perma.cc/KQ5S-U8SS] (last visited Nov. 2, 2015).

[12] *See Patent Sales*, AT&T, http://soc.att.com/1tOcQQB [http://perma.cc/H3DX-NVW7] (last visited Nov. 2, 2015).

[13] *See generally* RPX CORP., *supra* note 6.

[14] *See generally* ALLIED SECURITY TR., *supra* note 6.

[15] *See generally* UNIFIED PATENTS, http://unifiedpatents.com [http://perma.cc/V4TT-BRWZ] (last visited Nov. 2, 2015).

tents, gene patents, medical diagnostic patents, and SEPs. These types of patents have been devalued by a storm of events since 2011 including new legislation and its impact, proposed legislation and its chilling effect, lobbying efforts and their narrative's uptake, judicial opinions and their downstream application, and a significant standard setting organization's ("SSO") patent policy changes. Specifically, the validity and enforceability of these types of patents have been limited by (1) the federal courts' application of Supreme Court opinions in *Alice Corp. v. CLS Bank International*,[16] *Association for Molecular Pathology v. Myriad Genetics, Inc.*,[17] and *Mayo Collaborative Sources v. Prometheus Labs, Inc.*;[18] (2) the implementation of the AIA's inter partes review ("IPR") system;[19] (3) the proposed Innovation Act and other similar bills to reform patent eligibility and enforcement;[20] (4) the efforts of "super-coalition" lobbyist organizations such as United for Patent Reform;[21] and (5) a string of court decisions determining a reasonable and non-discriminatory ("RAND") rate for licensing SEPs, capped by the Institute of Electrical and Electronics Engineers' ("IEEE") recent IP policy change heeding the calls of technology standard implementers to codify those decisions.[22] The sudden impact on the validity and enforceability of these types of patents has, without question, negatively affected their value in the current environment in terms of transaction value and ability to exclude competitors from practicing those inventions.

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16 134 S. Ct. 2347 (2014).

17 133 S. Ct. 2107 (2013).

18 132 S. Ct. 1289 (2012); *see infra* Part I.A.

19 *See infra* Part I.B.

20 Innovation Act, H.R. 9, 114th Cong. (2015). Other bills will be discussed later in this Article, but a quick summary and link to these bills is provided by Patent Progress. *Patent Progress's Guide to Federal Patent Reform Legislation*, PAT. PROGRESS, http://www.patentprogress.org/patent-progress-legislation-guides/patent-progresss-guide-patent-reform-legislation/ [http://perma.cc/4FXQ-CKEP] (last visited Nov. 2, 2015) [hereinafter *Patent Progress Guide*].

21 *See* Brian Fung, *Patent Reform Advocates are Launching a 'Super-coalition' to Whack Patent Trolls*, WASH. POST (Jan. 15, 2015), https://www.washingtonpost.com/news/the-switch/wp/2015/01/15/patent-reform-advocates-are-launching-a-super-coalition-to-whack-patent-trolls/ [http://perma.cc/9K4S-HQVP]; *see generally* UNITED FOR PAT. REFORM, http://www.unitedforpatentreform.com/ [http://perma.cc/MJF2-R7BK] (last visited Nov. 2, 2015).

22 *See infra* Part I.D.

A. The Supreme Court's Holdings and Their Application by Lower Courts

For nearly thirty years prior to 2010, the U.S. Supreme Court generally ignored cases involving patent subject matter eligibility. However, since 2010, the Court has made patent eligibility a focus with four different decisions.[23] In *Bilski v. Kappos* and *Alice*, the Court focused on whether business or information processing methods related to financial activities, such as hedging trading risk or transferring funds to and from intermediary accounts, were abstract ideas or patentable subject matter.[24] In *Mayo*, the Court focused on medical diagnostics and, in particular, whether a patent directed to drug-delivery methods that do nothing more than provide a method for deciding when to increase the provision of treatment is preempting the application of a law of nature or claiming patentable subject matter.[25] In *Myriad*, the Court decided that isolated human genetic sequences were not "new," and thus not patentable.[26]

While there has been much debate about whether the Court has set a clear precedent providing predictability or not with these cases, a couple of things are very clear for abstract ideas and laws of nature: (1) after *Alice*, a patent that claims a basic economic or business norm but includes to "do it on a computer" or "do it on the Internet" is not patentable, and (2) after *Mayo*, a patent that is directed to a law of nature without specific inventive application and that preempts other unidentified applications is not patentable.[27] As we have discovered in their wake, there are many more patents out there that U.S. courts believe fall within these categories.

Despite the much-maligned coherence of its opinions, one thing is clear: the Supreme Court appears to believe its opinions all

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[23] Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 134 S. Ct. 2347 (2014); Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 133 S. Ct. 2107 (2013); *Mayo*, 132 S. Ct. 1289; Bilski v. Kappos, 561 U.S. 593 (2010).

[24] *Alice*, 134 S. Ct. at 2351; *Bilski*, 561 U.S. at 792.

[25] *Mayo*, 132 S. Ct. at 1294.

[26] *Myriad*, 133 S. Ct. at 2109.

[27] Jeffrey Lefstin, *The Three Faces of Prometheus: A Post-Alice Jurisprudence of Abstractions*, 16 N.C. J.L. & TECH. 647, 649–50 (2015).

fall in line with each other.[28] Perhaps more importantly for the purpose of this Article is that the lower courts have applied these decisions with a very common outcome: broad invalidation of patents.[29] Whether the precedent is coherent or not, the lower courts are taking a patchwork of the decisions that suits them to effectuate a desired outcome.[30] The collective outcomes have, in aggregate, shifted a patent market towards an environment where such patents are presumed invalid instead of valid. The below two tables provided by Robert Sachs, writing for the *BilskiBlog* in January 2015,[31] demonstrate a clear picture of the aligned Federal Circuit and District Court activity in the six months following *Alice*:

	Federal Circuit Decisions	*Patents*	*Claims*
Not Invalid	1	1	27
Invalid	6	12	344[32]

	District Court Decisions	*Patents*	*Claims*
Not Invalid	11	20	535
Invalid	29	56	1,488[33]

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[28] *Id*. at 650. ("Moreover, while in other fields the Court readily acknowledges the disorder of its jurisprudence, over the last four decades, the Court has pretended that its subject-matter jurisprudence is a coherent whole.").

[29] Robert Sachs, *#Alicestorm: Patent Invalidations and USPTO Practice After Alice*, BILSKIBLOG (Jan. 13, 2015), http://www.bilskiblog.com/blog/2015/01/alicestorm.html [http://perma.cc/MN8V-JFW2] ("Looking at the number of patents that have been invalidated in the six-plus months since the Supreme Court's decision in *Alice Corp. v. CLS Bank*, the only thing that adequately describes the situation is *#Alicestorm*.").

[30] Lefstin, *supra* note 27, at 650.

[31] Sachs, *supra* note 29.

[32] *Id.*; *see, e.g.*, buySAFE, Inc. v. Google, Inc., 765 F.3d 1350, 1351 (Fed. Cir. 2014); Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass'n, 776 F.3d 1343, 1345 (Fed. Cir. 2014); Digitech Image Techs., LLC v. Elecs. for Imaging, Inc., 758 F.3d 1344, 1347 (Fed. Cir. 2014); *In re* BRCA1- & BRCA2-Based Hereditary Cancer Test Patent Litig., 774 F.3d 755, 757 (Fed. Cir. 2014); Planet Bingo, LLC v. VKGS LLC, 576 F. App'x 1005, 1006 (Fed. Cir. 2014); Ultramercial, Inc. v. Hulu, LLC, 722 F.3d 1335, 1337 (Fed. Cir. 2013), *vacated sub nom.* WildTangent, Inc. v. Ultramercial, LLC, 134 S. Ct. 2870 (2014).

[33] Sachs, *supra* note 29; *see, e.g.*, Bascom Research, LLC v. LinkedIn, Inc., 77 F. Supp. 3d 940 (N.D. Cal. 2015); *see also, e.g.*, Card Verification Sols., LLC v. Citigroup Inc., No.

While business method patents have been invalidated the most (twenty-three patents), the below table shows the range of technologies affected during this six months:[34]

Patent Type	*Number of Invalidated Patents*
3D computer animation	2
Medical records	2
Database architecture	2
Networking	4
Digital image management	7
Document management	10

It is clear that not just financial services-related patents have been affected, and lower courts have painted the Supreme Court's "abstract ideas" holding in *Alice* with a broad brush across all technical fields.[35]

B. The America Invents Act and Its Inter Partes Review Machine

Like the lower courts, the United States Patent and Trademark Office ("USPTO") has been equally as, if not more, effective at invalidating patents it believes should not have been issued in the first place.[36] The below table demonstrates the Patent Trial and Appeal Board ("PTAB") activity during the same six-month period following *Alice*:[37]

	PTAB Decisions	*Patents*	*Claims*
Not Invalid (decision)	2	2	38
Invalid (decision)	8	8	151
Likely invalid (institution)	28	28	135

13 C 6339, 2014 WL 4922524 (N.D. Ill. Sept. 29, 2014); Cloud Satchel, LLC v. Amazon.com, Inc., 76 F. Supp. 3d 553 (D. Del. 2014) .

[34] Sachs, *supra* note 29.

[35] *Id*. ("This suggests that the courts are aggressively expanding the zone of 'abstract ideas' from the fundamental 'building blocks' of 'human ingenuity' that the Supreme Court has focused on in *Alice*, to just about any technological field.").

[36] *See, e.g.*, *id*.

[37] *Id*.

In total, 2,732 IPRs have been filed since 2012.[38] Of the 986 filed in fiscal year 2015, the below table demonstrates the technology break down:[39]

Technology and Class	*Number of Petitions*	*Percentage*
Electrical/Computer—TCs 2100, 2400, 2600, 2800	625	63.4%
Mechanical/Business Methods—TCs 3600, 3700	245	24.8%
Chemical—TC 1700	36	3.7%
Bio/Pharma—TC 1600	77	7.8%
Design—TC 2900	3	0.3%

The month that *Alice* was decided in June 2014, 184 IPRs were filed, the most of any month since the AIA was enacted.[40] According to a study conducted by Brian Love and Shawn Ambwani, the PTAB has instituted a petition to challenge at least one claim on eighty-four percent of IPR filings, and for all challenged claims seventy-four percent of the time.[41] There have been 322 final decisions on the merits and 436 settlements through April 2015.[42] Assuming the same rate of results through mid-2014, more than seventy-seven percent of the final decisions have resulted in invalidation or disclaimer of all challenged claims.[43]

The effectiveness, if we can call it that, of the IPR system has been clear, but perhaps predictable, in light of the general sentiment about patent quality that has permeated the patent world and Congress during the same time frame.

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[38] U.S. PATENT & TRADEMARK OFFICE, PATENT TRIAL AND APPEAL BOARD: AIA PROGRESS (April 9, 2015), http://www.uspto.gov/sites/default/files/documents/aia_statistics_04-09-2015.pdf [http://perma.cc/CA7A-EGDM].

[39] *Id.*

[40] *Id.*

[41] Brian J. Love & Shawn Ambwani, *Inter Partes Review: An Early Look at the Numbers*, 81 U. CHI. L. REV. DIALOGUE 93, 94 (2014).

[42] U.S. PATENT & TRADEMARK OFFICE, *supra* note 38.

[43] Love & Ambwani, *supra* note 41; *cf.* Scott McKeown, *IPR Final Decisions Track Reexamination Outcomes*, PATENTS POST-GRANT (Oct. 1, 2014), http://www.patentspostgrant.com/ipr-final-decisions-two-year-retrospective [http://perma.cc/CM9B-NEKL] ("A[ll] claims were cancelled in 45% of *inter partes reexamination* cases.").

C. Proposed Legislation, Lobbying, and the Development of a General Anti-Patent Narrative

The AIA was enacted, among other reasons, to fix an inefficient patent issuance system and provide additional channels for technology users and operating companies to challenge patents of questionable quality with less expense and time.[44] It created the new IPR and Covered Business Method ("CBM") procedures for patent challenges.[45] In 2012 and early 2013, no one yet knew the abovementioned effectiveness of the IPR system, and certain lobbyists felt that Congress had not gone far enough with the AIA.[46] On February 26, 2013, the Saving High-Tech Innovators from Egregious Legal Disputes ("SHIELD") Act was introduced as what would be the first of many new patent reform bills offered to fix a purported abusive patent litigation problem.[47] It was sponsored by Rep. Peter DeFazio (D-OR), along with Reps. Jason Chaffetz (R-UT), Kerry Bentivolio (R-MI), Tim Walberg (R-MI), and Peter Welch (D-VT).[48] A key to the SHIELD Act, and the sentiment behind it and other bills to follow, was that it:

> Direct[ed] courts making [a judgment of invalidity or noninfringement where the plaintiff is not the inventor, an operating entity, or a university technology transfer office] to award the recovery of full

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[44] *President Obama Signs America Invents Act, Overhauling the Patent System to Stimulate Economic Growth, and Announces New Steps to Help Entrepreneurs Create Jobs*, WHITE HOUSE (Sept. 16, 2011), https://www.whitehouse.gov/the-press-office/2011/09/16/president-obama-signs-america-invents-act-overhauling-patent-system-stim [http://perma.cc/WZ9M-9HD9] ("[AIA] will give a boost to American companies and inventors who have suffered costly delays and unnecessary litigation, and let them focus instead on innovation and job creation . . . . The Patent and Trademark Office will offer entrepreneurs new ways to avoid litigation regarding patent validity, at costs significantly less expensive than going to court.").

[45] U.S. PATENT & TRADEMARK OFFICE, RESPONSE TO PATENT TRIAL AND APPEALS BOARD: REQUEST FOR COMMENTS ON TRIAL PROCEEDINGS UNDER THE AMERICA INVENTS ACT BEFORE THE PATENT TRIAL AND APPEAL BOARD, http://www.uspto.gov/sites/default/files/ip/boards/bpai/sas.pdf [http://perma.cc/7FXT-6XGK] (last visited Nov. 2, 2015).

[46] *See, e.g.*, Ryan Davis, *Senate Bill Tips Scales for Patent Owners in AIA Reviews*, LAW360 (June 5, 2015, 8:45 PM), http://www.law360.com/articles/664373/senate-bill-tips-scales-for-patent-owners-in-aia-reviews [http://perma.cc/UGC7-BGXZ].

[47] *See* H.R. 845, 113th Cong. (2013–2014).

[48] *Id.*

> costs to any prevailing party asserting invalidity or noninfringement, including reasonable attorney's fees, other than the United States, unless exceptional circumstances make an award unjust.[49]

In other words, it was intended to provide a chilling effect that, coupled with the line of court decisions and the "effectiveness" of the PTAB highlighted above, implicitly targeted those same classes of patents: abstract ideas related to business methods and software patents, laws of nature related to drug diagnostics and delivery, and gene patents. As if the trend of court decisions and PTAB results were not enough, certain lobbyist groups described below believed we needed to go further to effectuate the chilling effect, developing an incredibly strong anti-patent system narrative that focused on persuading anybody without knowledge that most of these patents, if not all, are invalid and are likely to be used in litigation in an abusive manner. For the purpose of this Article, it is important to realize that this lobbyist effort has worked up a very believable and effective story.[50] Since the SHIELD Act, thirteen additional such bills were introduced during the 113th Congress, involving scores of legislators attempting to make it their issue:[51]

- Innovation Act (H.R. 3309);
- Patent Transparency and Improvements Act (S. 1720);
- Patent Quality Improvement Act (S. 866);
- Patent Abuse Reduction Act (S. 1013);
- Patent Litigation Integrity Act (S. 1612);
- Transparency in Assertion of Patents Act (S. 2049);
- Patent Fee Integrity Act (S. 2146);
- Trade Protection Not Troll Protection Act (H.R. 4763);

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[49] *Id*.

[50] *See* Gene Quinn, *Will Congress be Misled on Patent Reform Again?*, IP WATCHDOG (Jan. 5, 2015), http://www.ipwatchdog.com/2015/01/05/will-congress-be-misled-on-patent-reform-again/id=53021/ [http://perma.cc/77NB-7DVS]. *But see* Tom Risen, *How the Tech Lobby Got Beat*, U.S. NEWS & WORLD REP. (Sept. 16, 2014), http://www.usnews.com/news/articles/2014/09/16/how-the-tech-lobby-got-beat [http://perma.cc/Q2ZK-26EM].

[51] *See Patent Progress Guide*, *supra* note 20.

- Demand Letter Transparency Act (H.R. 3540);
- Innovation Protection Act (H.R. 3309);
- Patent Litigation and Innovation Act (H.R. 2639);
- Stopping the Offensive Use of Patents Act (STOP Act) (H.R. 2766); and
- End Anonymous Patents Act (H.R. 2024).

Two additional bills have been introduced thus far during the 114th Congress; a revamped Innovation Act (H.R. 9) and the Strong Act (S. 632), the first bill proposed by an opposition group that perceives the pendulum to have swung too far as a result of the activities described above.[52] According to Patent Progress, a website dedicated to following the progress of such bills, the focus of the majority of these bills includes (1) making the CBM review program available to more industries than just financial services, (2) curbing "abusive litigation tactics," (3) protecting end-users, and (4) adding transparency to identify third-party beneficiaries of litigation and suppliers of patents and financing to non-practicing entities ("NPE").[53] From my perspective, all of this boils down to three main intended results: (1) leveraging the judicial and PTAB sentimentality and environment with respect to those identified classes of patents to make it still easier to invalidate them; (2) developing an even stronger chilling effect to discourage even attempts at asserting or extracting value from these patents that, like all other patents, are presumed valid from issuance; and (3) rendering the value of these patents in the transaction market to be significantly reduced or eliminated as a result of third-party beneficiary transparency rules and the special treatment of NPEs to remove a large component of liquidity from the market.[54] All of this creates a chilling effect on these classes of patents, in filing for them, transacting for them, or asserting them, which has been evidenced in 2014 in part by a lower rate of increase in patent application filings and fewer year-over-year litigation filings.[55]

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[52] *Id.*

[53] *Id.*

[54] *Id.*

[55] Gene Quinn, *Sharp Decline in US Patent Litigation So Far in 2014*, IP WATCHDOG (Mar. 10, 2014), http://www.ipwatchdog.com/2014/03/10/sharp-decline-in-us-patent-litigation-so-far-in-2014/id=48442/ [http://perma.cc/73F6-CQ3X] ("The obvious

The lobbying effort behind this new patent reform push is led by Silicon Valley Internet-based juggernauts Google, Facebook, and Adobe, and supported by large corporate members of the restaurant, hotel and retail industry, such as JCPenney and Macy's.[56] They have developed a narrative summarized by a message read on the homepage of their group, United for Patent Reform's website: "American businesses large and small across many industries are being held hostage by patent trolls. This must change."[57] The effort has pushed literature and data evidencing purportedly abusive patent litigation, a significant portion of which has taken place in the technical areas that are the focus of this Article.[58] The largest piece of marketing behind this group's agenda has seemed to be a study and article by James Bessen and Michael Meurer claiming that assertions made and patent lawsuits filed by NPEs have caused the economy $29 billion in direct costs.[59] Without regard for the accuracy or legitimacy of the Bessen and Meurer study and article,[60] it is important, for the purposes of this Article, to under-

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question this leads to is whether the patent litigation centric patent reforms presenting [sic] pending in the Congress are required if the number of patent infringement cases being brought is declining."); *see also* Lisa Shuchman, *Fewer Patent Litigation Filings So Far in 2014*, CORP. COUNS., Oct. 14, 2014. There were only about one percent more patent applications filed in 2014 than in 2013, whereas the previous year-on-year increase had been more than five percent. *See U.S. Patent Statistics Chart Calendar Years 1963–2014*, *supra* note 3. The rate of increased filings in 2014 was the lowest since 2009. *See id.*

[56] Fung, *supra* note 21.

[57] UNITED FOR PAT. REFORM, *supra* note 21.

[58] *See, e.g.*, Michael Loney, *US Patent Litigation Surges in February, Driven by Software Cases*, MANAGING INTELL. PROP. 1 (2015), http://www.unitedforpatentreform.com/files/mip_us_litigation_update_april_2015271373446.pdf [http://perma.cc/HFW3-R6L8] (explaining that litigation is up over 2014, despite 2014 being a relatively down year for litigation filings, as evidenced above, and noting that the numbers are still down compared to 2013).

[59] James Bessen & Michael J. Meurer, *The Direct Costs of NPE Disputes*, 99 CORNELL L. REV. 387, 389 (2014).

[60] *See* David Schwartz & Jay Kesan, *Analyzing the Role of Non-Practicing Entities in the Patent System*, 99 CORNELL L. REV. 425 (2014); *see also* Adam Mossoff, *Junk Science Still Front and Center in Push to Weaken Patents*, HILL (Feb. 13, 2015), http://thehill.com/blogs/congress-blog/technology/232699-junk-science-still-front-and-center-in-push-to-weaken-patents [http://perma.cc/8AD9-Q5Y4]; Gene Quinn, *Patent Reformers Resort to Misrepresentations in WSJ Op-Ed*, IP WATCHDOG (Feb. 17, 2015), http://www.ipwatchdog.com/2015/02/17/patent-reformers-resort-to-misrepresentations-in-wsj-op-ed/id=54863/ [http://perma.cc/8Z3Q-L8BF]; Joff Wild, *Deconstructing Bessen and Meurer—Paper Raises Big Questions over Their NPE Claims*, IAM BLOG (July 27, 2012),

stand that these and other similar efforts have caused fifteen patent reform bills since 2013.[61] All of these bills aim to make it more difficult to enforce and transact certain patents otherwise enjoying a presumption of validity, especially those patents owned by certain types of entities and patents in the subject classes that are the focus of this Article.[62] This phenomenon perpetuates a chilling effect on the enforceability of these patents, as their cause has been heeded by courts and patent owners. Until there is certainty about what will be the law, and as long as there is optimism that some form of these bills will be passed, users of these patents are not willing to transact, eliminating the monetizable value of these patents without litigation.[63]

D. Standard Essential Patents and the Decreasing RAND Value

Another class of patents has been devalued recently by a string of decisions by federal courts. Additionally, one of the largest SSOs in the world has joined the campaign and recently decided to change its IP policy in a manner that puts owners of SEPs at a disadvantage to their counterparty in any licensing negotiation.[64] SEPs

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http://www.iam-media.com/blog/Detail.aspx?g=454c1adc-52c3-4c2d-8981-e4716361f219 [http://perma.cc/65LC-L4VE].

[61] *See Patent Progress Guide*, *supra* note 20.

[62] *See* James E. Bessen, *What the Courts Did to Curb Patent Trolling—For Now*, ATLANTIC (Dec. 1, 2014), http://www.theatlantic.com/business/archive/2014/12/what-the-courts-did-to-curb-patent-trollingfor-now/383138/?single_page=true [http://perma.cc/V8CS-UZKK] ("While it's true that the Patent Office is granting several hundred fewer business method patents each month, it is still granting record numbers of software patents overall. Most of the litigation is over software patents, not just business method patents."); *see also* Dennis Crouch, *Patent Reform: Impact of Alice on Business Method Patents*, PATENTLY-O (Dec. 2, 2014), http://patentlyo.com/patent/2014/12/patent-business-method-patents.html [http://perma.cc/UZ7A-NUNB] ("The point here, according to Bessen is that, although the Supreme Court has done some work, there is still plenty of room for Congressional action to further reduce or eliminate patents covering software.").

[63] *See, e.g.*, Corporate Announcement, Intellectual Property Exchange Intl., Inc. (Mar. 23, 2015) (on file with author) (expressing that with respect to its licensing programs, licensees refused to transact or even negotiate when IPXI declined to litigate); *see also* Joff Wild, *IPXI Demise Caused by a US Patent System That Offers No Incentive for Good-faith Licensing, Says Exchange's CEO*, IAM BLOG (Apr. 7, 2015), http://www.iam-media.com/blog/Detail.aspx?g=93e8d407-b24c-4d9a-a59c-da9fe9e3f578 [http://perma.cc/N3M6-JXUU].

[64] William C. Powell, *Will New IEEE Standards Policy Devalue Standards Essential Patents?*, BAKER HOSTETLER (Feb. 12, 2015), http://www.bakerlaw.com/alerts/will-new-

have widely been regarded as having automatic value because they claim a technology that is incorporated into a technology protocol that is adopted by an entire industry, and patent owners have historically desired to own SEPs because they can extract royalties more easily.[65] Some research has shown that the value of any single SEP may be tied to the owner of the patent, as well as the number of patents essential to the same standard that are owned and offered for license by that same entity.[66] Regardless of these and other factors in determining the value of each SEP, no factor is more important than whether they are encumbered by a contractual commitment to license under RAND terms. Many SSOs, like the IEEE, include a contractual commitment with membership that obligates each member to license their essential patents to all entities demanding a license in a reasonable and non-discriminatory manner.[67] To be complete, the IEEE includes four options for each member ranging between open-source licensing without compensation to the most commonly chosen option—a member will make a license available for its essential patent claims "'under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination,'" to an unrestricted number of applicants for uses implementing the standard (the "RAND Commitment").[68] Prior to its recent IP policy change described in more detail below in this Article, the IEEE has previously not defined or

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ieee-standards-policy-devalue-standards-essential-patents [http://perma.cc/C4Z3-5YYM] ("The new IEEE policy may reduce the licensing value of patents that are essential to implement a product compliant with future IEEE standards.").

[65] Josh Lerner & Jean Tirole, *Standard-Essential Patents* 2 (Harvard Bus. School, Working Paper No. 14-038, Nov. 5, 2013), http://www.hbs.edu/faculty/Publication%20Files/14-038_c030ca39-5339-4447-b952-8132110260bf.pdf [http://perma.cc/4UEV-8BRX] ("Intellectual property (IP) owners vie to have their technologies incorporated into standards, so as to collect royalty revenues . . . .").

[66] Peter Quies, *Valuing Standard Essential Patents: An Examination of Announced Royalty Rates for LTE Patents*, MICRONOMICS (Dec. 2012), http://www.americanbar.org/content/dam/aba/publications/litigation_committees/intellectual/012413-valuing-standard-essential-patents-memo.authcheckdam.pdf [http://perma.cc/B58L-5W8W].

[67] *See* INST. ELEC. & ELECS. ENG'RS, INC., IEEE-SA STANDARDS BOARD BYLAWS § 6.2 (Dec. 2015), http://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf [http://perma.cc/J3P4-G9XM].

[68] *See* Letter from Renata B. Hesse, Acting Asst. Att'y Gen., to Michael A. Lindsay, Esq. (Feb. 12, 2015), http://www.justice.gov/sites/default/files/atr/legacy/2015/02/02/311470.pdf [http://perma.cc/M5HP-6SBP].

offered help to define what "reasonable terms" or "conditions that are demonstrably free of any unfair discrimination" actually means.

Before this Article describes the IEEE policy change, it is important to understand the driving force behind the IEEE's decision. Over the past four years, the value of SEPs and the meaning of the RAND Commitment have been hotly contested through lawsuits. Given the opportunity, and without benchmarks for methodology or valuation, courts have taken it upon themselves to determine RAND royalty rates and the proper approach to take in that determination.[69] As a result, these rates have decreased significantly over the last few years.[70] The primary decisions since 2012 involve wireless standards and include *Microsoft Corp. v. Motorola*

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[69] Gregory K. Leonard & Mario A. Lopez, *Determining RAND Royalty Rates for Standard Essential Patents*, 29 ANTITRUST 86, 86 (2014) ("SSOs generally have left these questions unanswered for various reasons, including not wanting to be responsible for policing patent licensing terms . . . . The appropriate definition of RAND and appropriate approaches for determining a RAND royalty are the subject of litigation between SEP owners and product manufacturers in various venues around the world.").

[70] Kat Greene, *Calif. Jury Sets RAND Rate for Licensing Wi-Fi Patents*, LAW360 (Feb. 27, 2014, 6:35 PM), http://www.law360.com/articles/514100/calif-jury-sets-rand-rate-for-licensing-wi-fi-patents [http://perma.cc/CA2B-4XJ5] ("'Not only is this the first trial in which district court jurors have determined the RAND rate for a patent, we believe these royalties are the lowest ever to be set for comparable technologies related to declared standard-essential patents,' Steven S. Baik, attorney for Realtek, said . . . ."); *see Royalty Rates for Standard Essential Patents*, SULLIVAN & CROMWELL (Apr. 30, 2013), http://www.sullcrom.com/siteFiles/Publications/SC_Publication_Royalty_Rates_for_Standard_Essential_Patents_414F.pdf [http://perma.cc/S4QN-6BH3] ("[T]he amount of the RAND royalty was substantially less than 1% of the rate that Motorola had originally sought . . . . Judge Robart's decision in *Microsoft* v. *Motorola* is the first to set out and apply a methodology for determining a RAND royalty rate for standard-essential patents. As such, it is likely to be at least addressed if not followed by other trial courts . . . to the extent that it can be read to limit the royalty available for a standard-essential patent subject to a RAND commitment . . . Judge Robart's decision may well affect the valuation of such patents in the secondary market. Parties considering the purchase or sale of standard-essential patents subject to a RAND commitment should carefully consider Judge Robart's decision in evaluating the likely return on their investment."); *see also* Roger Brooks, *SSO Rules, Standardization, and SEP Licensing: Economic Questions from the Trenches*, Remarks prepared for the Research Roundtable on Innovation and Technology Standards, Searle Center on Law, Regulation, and Economic Growth, Northwestern University School of Law, (Feb. 7–8, 2013) ("[C]umulative royalties for new entrants . . . have actually proven to be lower for 3G handsets than for handsets introduced under the 2G GSM standard.").

Inc.,[71] *In re Innovatio IP Ventures, LLC*,[72] and *Realtek Semiconductor Corp. v. LSI Corp.*[73] These courts seriously considered royalty stacking and patent hold-up arguments by technology implementers, including by amicus brief.[74] Although their methodologies were a bit different, it is generally noted that these findings have devalued SEPs by setting a low benchmark for RAND rates in all contexts.[75] These decisions come subsequent to very large damages calculations and settlement figures from other assertions of SEPs related to wireless standards by entities such as Commonwealth Scientific and Industrial Research Organization ("CSIRO"), an Australian national laboratory, and Wi-Lan.[76] As a result, for patents like SEPs where the largest component of value is the potential royalty stream they may generate, these federal court decisions have significantly devalued these patents from their potential royalty position enjoyed not even five years ago.[77]

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[71] Microsoft Corp. v. Motorola Inc., No. C10-1823JLR, 2013 WL 2111217 (W.D. Wash. Apr. 25, 2013).

[72] *In re* Innovatio IP Ventures, LLC Patent Litig., No. 11 C 9308, 2013 WL 5593609 (N.D. Ill. Oct. 3, 2013).

[73] Realtek Semiconductor Corp. v. LSI Corp., No. C-12-03451 RMW, 2012 WL 4845628 (N.D. Cal. Oct. 10, 2012).

[74] *See, e.g.*, *In re Innovatio*, 2013 WL 5593609; *Microsoft*, 2013 WL 2111217.

[75] *See* Leonard & Lopez, *supra* note 69.

[76] *See* Mark Summerfield, *The Story Behind CSIRO's Wi-Fi Patent 'Windfall,'* PATENTOLOGY (Apr. 5, 2012, 2:03 AM), http://blog.patentology.com.au/2012/04/story-behind-csiros-wi-fi-patent.html [http://perma.cc/9UHU-X8FW] (noting that CSIRO has collected over $420 million from one SEP prior to 2012). *Compare* Ben Grubb, *CSIRO's Wi-Fi Patent Victory Earns $200m and Counting*, CRN (Oct. 15, 2009, 9:11 AM), http://www.crn.com.au/News/158194,csiros-wi-fi-patent-victory-earns-200m-and-counting.aspx [http://perma.cc/FF5D-4RJ5] (showing that fourteen CSIRO settlements occurred in or prior to 2009 for a total $200 million, equaling an average of approximately $14 million per settlement for one patent), *with* Mark Chandler, *Innovatio Case: Victory for Cisco Customers Makes the Case for Patent Reform*, CISCO BLOGS (Feb. 6, 2014, 9:48 AM), http://blogs.cisco.com/news/innovatio-case-victory-for-cisco-customers-makes-the-case-for-patent-reform [http://perma.cc/8VAB-VDB6] (explaining that Innovatio IP Services, LLC (also an NPE) only collected $2.7 million from Cisco in a settlement for nineteen SEPs that were similarly identified to be within the "top 10%" of technologies with respect to importance to the 802.11n standard). The main difference between these settlements is that the *Microsoft* and *In re Innovatio* decisions had come down, decreasing the RAND rate for SEPs in general.

[77] Leonard & Lopez, *supra* note 69 ("In the case of a patent for which the primary driver of value is licensing, the expected future cash flows are the royalty revenues minus the incremental costs of efforts to license the patent. Thus, for such patents, including SEPs where the patent owner has made a commitment to license on RAND terms, there

In February 2015, the IEEE heeded these decisions, the arguments being made by technology implementers that make up a large portion of its membership, and a call to define RAND by the Department of Justice ("DOJ"), Federal Trade Commission, and European Commission was initiated.[78] The IEEE announced that its board had approved an IPR policy change that, among other things, limits the definition of "reasonable rate" to a "smallest salable compliant implementation" and further limits the availability of an SEP owner to obtain an injunction.[79] It also limits the rate to the entire stack of patents held by that SEP owner applicable to the licensee's product.[80] This policy change, although endorsed by the DOJ as potentially having procompetitive effects, should decrease the potential royalty stream for all SEPs related to IEEE standards, as an injunction will no longer be scary to licensees (a large motivator for device "original equipment manufacturers" to license without litigation), and the general bargaining position balance between SEP owners and technology implementers has now been shifted heavily in favor of the implementers.[81] What is clear is that SEPs, once having significant potential to earn a reasonable return on research investment, are now worth a fraction of that value because

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should be a close relationship between a patent's value and the size of the royalty stream it is expected to generate.").

[78] *See* Kaie-Uwe Kuhn, Fiona Scott Mortion & Howard Shelanski, *Standard Setting Organizations Can Help Solve the Standard Essential Patents Licensing Problem*, CPI ANTITRUST CHRON., Mar. 2013, at 1, https://www.competitionpolicyinternational.com/assets/Free/ScottMortonetalMar-13Special.pdf [http://perma.cc/22FL-4MJ5].

[79] *See IEEE Statement Regarding Updating of Its Standards-Related Patent Policy*, IEEE (Feb. 8, 2015), http://www.ieee.org/about/news/2015/8_february_2015.html [http://perma.cc/N7PP-HCHH]; *see also* Powell, *supra* note 64 (noting that "[t]he prior policy largely left 'reasonable rate' undefined, and it could have been based, for example, on a percentage of an entire product containing the compliant implementation rather than the smallest salable compliant implementation").

[80] *Id*.

[81] *See* Susan Decker & Ian King, *Qualcomm Says It Won't Follow New Rules on Patents*, BLOOMBERG BUS. (Feb. 11, 2015, 11:23 AM), http://www.bloomberg.com/news/articles/2015-02-11/qualcomm-says-new-wi-fi-standard-rules-unfair-may-not-take-part [http://perma.cc/RZ3C-SSPY]; *see also* Letter from Lawrence F. Shay to David Law, Patent Committee Chair, (Mar. 24, 2015), http://wpuploads.interdigital.com.s3.amazonaws.com/uploads/2015/03/Letter-to-IEEE-SA-PatCom.pdf [http://perma.cc/3HS9-YA2X].

of the trend of court decisions since 2012 and the recent IEEE IP policy change that could spur other SSOs to follow suit.[82]

II. A LOOK AT THE PATENT LANDSCAPE: DEVALUED PATENTS AND LICENSING OBLIGATIONS

In order to identify companies holding patents that may be susceptible to the general devaluation described in Part I, I looked at two types of data: (1) acquisition data, to determine which companies had recently, but prior to important devaluation events, acquired similar assets, and (2) patent assignment data, to determine generally which companies own the most patents that are similar to those that are susceptible to devaluation. To define "patents susceptible to devaluation," for business method and software patents and medical diagnostic and gene patents, I targeted only patents in the same Cooperative Patent Classification ("CPC") as those patents that were invalidated in *Alice* (CPC G06Q), *Mayo* (CPC A61K), and *Myriad* (CPC C07K). To find acquisition data for these types of patents, I used filtered data and analytics from 2011–2014 from TerraCaptus, LLC, a patent auction, consulting and data firm, using its proprietary data engine.[83] To find general assignment data, I used the Innography patent data tool and searched by CPC class.[84] For SEPs, I used a research report, the Sunlight Report, that has been accepted by at least one federal court as identifying the entire potential "stack" of patents for IEEE 802.11.[85]

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[82] Vin Gurrieri, *AIPLA Rip Landmark RAND Ruling in 9th Circ.*, LAW360 (Sept. 23, 2014), http://www.law360.com/articles/580211/qualcomm-aipla-rip-landmark-rand-ruling-in-9th-circ [http://perma.cc/QEK2-3ZF9] ("Qualcomm Inc. and the American Intellectual Property Law Association told the Ninth Circuit Monday that a Washington federal judge used a flawed methodology to determine royalty rates in a suit between Motorola Inc. and Microsoft Corp. that, if endorsed, could devalue all standard-essential patents."); *see* Powell, *supra* note 64.

[83] *See* TERRACAPTUS, http://terracaptus.com/ [http://perma.cc/4QXE-NK4D] (last visited Nov. 2, 2015).

[84] *See* INNOGRAPHY, https://www.innography.com [http://perma.cc/WEF2-GKMX] (last visited Nov. 2, 2015).

[85] SCHWEGMAN, LUNDBERG & WOESSNER, P.A., TECH. PAT. REP., 802.11n WLAN (on file with author). This report provides a panoramic claims-level analysis of issued United States patents that may relate to IEEE 802.11n standard for wireless local area networks. *Id.* The report provides an Intellectual Property Rights landscape and identifies, among other things, the distribution of patent holdings and the major competitors in the field. *Id*;

Based on essentiality evaluation of a sample of more than one hundred patents in the Sunlight Report, I found an attrition rate of approximately fifty percent.

Using this information, I found that, between 2011–2014, the following companies acquired the most patents in the subject CPCs after AIA and prior to *Alice*, *Mayo*, or *Myriad*, respectively:

CPC A61K

Company Name	*Number of 1,338 Total Pre-*Mayo *Transactions Between 2011–2012*
Novartis	125
Roche[86]	104
Abbvie Inc.	49
Pfizer	19
Astrazeneca	19

CPC C07K

Company Name	*Number of 309 Total Pre-*Myriad *Transactions Between 2011–2013*
Roche	55
Novartis	29
Abbvie Inc.	21
Medimmune[87]	11
Abbott	4

see In re Innovatio IP Ventures, LLC Patent Litig., No. 11 C 9308, 2013 WL 5593609, at *42–43 (N.D. Ill. Oct. 3, 2013) ("Dr. Lynde relied on another report by Sunlight Research and concluded that there are 3,266 patents aside from Innovatio's patents that are potentially essential to the 802.11 standard. Taking into account all of the evidence and Judge Robart's findings on this question, the court determines that the PA Report's number of approximately 3,000 is a credible account of the number of potentially standard-essential patents. Nonetheless, there is no guarantee that all of those approximately 3,000 potentially essential patents are in fact essential." (internal citations omitted)).

[86] Roche is only listed on the SIX Swiss Exchange. *See Roche Holding AG*, SWISS EXCHANGE, http://www.six-swiss-exchange.com/shares/security_info_en.html?id=CH0012032048CHF1 [http://perma.cc/83TY-AADG] (last visited Nov. 2, 2015).

[87] MedImmune is wholly owned by AstraZeneca. *See generally* MEDIMMUNE, https://www.medimmune.com [http://perma.cc/VWH5-KH8F] (last visited Nov. 2, 2015).

CPC G06Q

Company Name	*Number of 336 Total Pre-*Alice *Transactions Between 2011–2014*
Accenture	28
eBay	23
Western Union	9
Facebook	6
Roche	5

The following demonstrates the companies that are currently assigned the most patents within each of the CPCs, without regard for (1) whether those patents were acquired or granted to the assignee and (2) when the patent was issued or assigned to the assignee:

CPC A61K

Company Name	*Number of Patents*
Isis Pharmaceuticals, Inc.	164
Merck & Co. Inc.	157
Nektar Therapeutics	113
Johnson & Johnson	110
Roche Holding Ltd.	109
Sanofi SA	106
Novartis AG	105
Bristol Myers Squibb Co.	82
Eli Lilly & Co.	67
Amgen, Inc.	65

CPC C07K

Company Name	*Number of Patents*
Roche Holding Ltd.	735
Merck & Co. Inc.	177
E.I. du Pont de Nemours & Co.	166
GlaxoSmithKline plc	150
Novartis AG	134
Bristol Myers Squibb Co.	133
Astellas Pharma, Inc.	128
Amgen, Inc.	119
Takeda Pharmaceutical Company Ltd.	105
Johnson & Johnson	98

CPC G06Q

Company Name	*Number of Patents*
IBM	1,899
Microsoft Corporation	1,102
SAP SE	1,032
Google	637
Oracle Corporation	528
AT&T Inc.	453
Amazon.com, Inc.	450
Hewlett-Packard Company	398
eBay Inc.	371
Accenture Plc	361
Bank of America Corporation	357

Based on data provided by the Sunlight Research Report, the following are the ten companies holding the most patents that are potentially essential to the IEEE 802.11n standard:[88]

IEEE 802.11n	*Number of Patents*
Qualcomm, Inc.	1,519
Intel Corporation	923
Samsung Group	854
Interdigital, Inc.	824
Broadcom Corporation	491
Telefonaktiebolaget LM Ericsson	383
Panasonic Corporation	371
Nokia Corporation	354
Alcatel-Lucent	319
Sony Corporation	294

This representation does not mean that all, or any, of these patents are invalid or essential. The patents are, however, subject to much higher scrutiny in the past three years and, as a result, are much more difficult to enforce or transact. The reduced enforceability of these patents renders their value decreased, both in the

[88] SCHWEGMAN, LUNDBERG & WOESSNER, P.A., *supra* note 85.

context of enforcing to protect products or for transacting in the patent market.[89] The purpose of showing the information above is to demonstrate that, because these patents are encumbered by a chilling effect, a limited enforceability, and/or an increased risk of invalidation, at the least, the public companies that own them could be sharing more information about them to shareholders or potential investors. For example, Google's 637 patents in the *Alice* CPC makes up nearly 2.5% of all of its granted patents.[90] Similar to the online advertising patent that was invalidated by the Federal Circuit recently in *Ultramercial v. Hulu*,[91] what if proprietary and important search algorithms and online advertising methods invented by Google and relied upon to maintain competitive advantage over competitor search engines are found in this batch of 637 patents? Should that be something that investors need to know? Similarly, Qualcomm makes most of its profits from licensing standard essential patents.[92] Should it disclose to investors that its SEPs would earn lower royalties in the future?

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[89] *See* Louis Carbonneau, *Toxic Asset: The Gradual Demise of the American Patent*, IP WATCHDOG (Dec. 10, 2014), http://www.ipwatchdog.com/2014/12/10/toxic-asset-the-gradual-demise-of-the-american-patent/id=52571/ [http://perma.cc/UMU9-MRYH] ("Recently, we have been witnessing the gradual erosion of our patent system, which culminated last week with a decision in *Ultramercial v. Hulu* by the Court of Appeals for the Federal Circuit; looking at the same patent for the third time (yes, really), the court reversed itself from a previous finding of validity and declared a patent related to Internet advertising to be invalid, based on the recent Supreme Court in Alice . . . . All of these decisions have collectively made it harder for patent owners to: i) maintain the validity of duly issued patents (previously presumed by law), ii) pursue infringement claims, iii) prove damages (let alone treble damages), iv) have open discussions with potential infringers prior to litigating, and have left the unsuccessful patent owner at risks of paying millions in legal fees to the other side if the judges so decides.").

[90] Per Innography, Google owns 27,449 issued patents as of April 15, 2015. *See* Search Performed Using Innography (on file with author).

[91] Ultramercial, Inc. v. Hulu, LLC, 722 F.3d 1335, 1337 (Fed. Cir. 2013), *vacated sub nom.* WildTangent, Inc. v. Ultramercial, LLC, 134 S. Ct. 2870 (2014).

[92] *See* Noel Randewich, *Qualcomm's Quarterly Revenue Growth Dwindles, Shares Fall*, REUTERS (Apr. 23, 2014, 5:52 PM), http://www.reuters.com/article/2014/04/23/us-qualcomm-results-idUSBREA3M1WU20140423 [http://perma.cc/442V-79ZX].

III. CORPORATE DISCLOSURE REQUIREMENTS: THEIR INTERPRETATION AND APPLICATION

Boards of directors of all corporations have fiduciary duties owed to the shareholders of the organization that are governed by the laws of the jurisdiction in which they are incorporated.[93] Since the early 2000s, however, additional disclosure requirements for public companies have been codified in federal law in response to financial, accounting, and other ethical scandals that have caused harm to investors.[94] For companies listed on either the New York Stock Exchange ("NYSE") or the Nasdaq Global Market ("NASDAQ"), the following are some of the rules and regulations imposed on boards and their committees:

- the Sarbanes-Oxley Act of 2002, as amended ("SOX");[95]
- the Securities Exchange Act of 1934, as amended (the "Exchange Act");[96]
- rules of the SEC;
- the corporate governance listing standards of the NYSE and NASDAQ; and
- the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank").[97]

For the purpose of this Article, we will focus on requirements under the Exchange Act and SOX, which primarily govern the on-

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[93] *Requirements for Public Company Boards*, WEIL, GOTSHAL & MANGES (Dec. 2013), http://www.weil.com/~/media/files/pdfs/Chart_of_Board_Requirements_December_2013.pdf [http://perma.cc/7ZCW-UX6S].

[94] *Id*.

[95] Pub. L. No. 107-204, 116 Stat. 745 (codified in scattered sections of 11, 15, 18, 28 and 29 U.S.C.).

[96] 48 Stat. 881 (codified at 15 U.S.C. §§ 78a–78pp).

[97] Pub. L. 111–203, 124 Stat. 1376 (codified in scattered sections of 12, 15 U.S.C.); *see also Requirements for Public Company Boards*, *supra* note 93; *SEC Disclosure Laws and Regulations*, INC. MAG., http://www.inc.com/encyclopedia/sec-disclosure-laws-and-regulations.html [http://perma.cc/79VR-U6MY] (last visited Nov. 2, 2015) ("For example, in 2000 the SEC imposed new regulations to eliminate the practice of 'selective disclosure,' in which business leaders provided earnings estimates and other vital information to analysts and large institutional shareholders before informing smaller investors and the rest of the general public.").

going disclosure of information to shareholders and potential investors related to the assets and activities of the company.

A. Disclosures Required Under the Exchange Act and SOX

The three primary SEC filings for a public company include Form 10-K, an annual filing; Form 10-Q, a quarterly filing; and Form 8-K, a filing triggered by certain circumstances or material events.[98] In either case, public companies are required to disclose significant information to investors on a regular basis.[99] Form 10-K is one of two annual reports prepared by a public company.[100] While Form 10-K is filed with the SEC and governed solely by federal statute, an annual report is also prepared for distribution directly to shareholders, by direct mail and by placement on the company website.[101] The annual report for shareholders has historically enjoyed less regulation, but the SEC has begun to control the content in annual reports more closely.[102] The SEC offers the following clarity in distinguishing between the annual report on Form 10-K and the annual report prepared for distribution to shareholders:

> The annual report to shareholders is a document used by most public companies to disclose corporate information to their shareholders. It is usually a state-of-the-company report, including an opening letter from the Chief Executive Officer, financial data, results of operations, market segment information, new product plans, subsidiary activities, and research and development activities on future programs. Reporting companies must send annual reports to their shareholders when they hold annual meetings to elect directors. Under the proxy rules, reporting companies are required to post their proxy

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98 *Fast Answers, Form 10-K*, U.S. SEC. EXCHANGE COMMISSION, http://www.sec.gov/answers/form10k.htm [http://perma.cc/Z35L-5QU6] (last visited Nov. 2, 2015).

99 *See id.*

100 *See id.*

101 *SEC Disclosure Laws and Regulations*, *supra* note 97.

102 *Id.*

> materials, including their annual reports, on their company websites.
>
> The annual report on Form 10-K, which must be filed with the SEC, may contain more detailed information about the company's financial condition than the annual report and will include the annual financial statements of the company. Companies sometimes elect to send their annual report on Form 10-K to their shareholders in lieu of, or in addition to, providing shareholders with a separate annual report to shareholders.[103]

The annual Form 10-K and quarterly Form 10-Q require a public company to disclose, among other things, audited financial statements and evidence of controls and processes for information reporting.[104] The financial statements must include information about total assets and long-term obligations.[105] In addition, they must include "risk factors" or "information about the most significant risks that apply to the company or to its securities."[106] The goal of these disclosure requirements is to provide transparency to investors and potential investors about the business operations, financial condition, management, and business and legal risks of the corporation.[107] As the SEC has stated:

> [A]ll investors, whether large institutions or private individuals, should have access to certain basic facts about an investment prior to buying it, and so long as they hold it. To achieve this, the SEC requires public companies to disclose meaningful financial and other information to the public. This provides a common pool of knowledge for all investors to use

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[103] *Annual Report*, U.S. SEC. EXCHANGE COMMISSION, http://www.sec.gov/answers/annrep.htm [http://perma.cc/VXD5-QN9F] (last visited Nov. 2, 2015).

[104] ERNST & YOUNG, 2011 SEC ANNUAL REPORTS—FORM 10-K (2011), http://www.ey.com/Publication/vwLUAssets/SECAnnualReports10K_CC0337_November2011/$FILE/SECAnnualReports10K_CC0337_November2011.pdf [http://perma.cc/7G9P-6C8L].

[105] *SEC Disclosure Laws and Regulations*, *supra* note 97.

[106] *How to Read a 10-K*, U.S. SEC. EXCHANGE COMMISSION (Oct. 13, 2015), http://www.sec.gov/answers/reada10k.htm [http://perma.cc/QK2Z-6FYB].

[107] *See id.*

> to judge for themselves whether to buy, sell, or hold a particular security. Only through the steady flow of timely, comprehensive, and accurate information can people make sound investment decisions.
>
> The result of this information flow is a far more active, efficient, and transparent capital market that facilitates the capital formation so important to our nation's economy . . . .[108]

Accountability is not limited to the corporation, but also extends to the board and executives themselves. For example, section 906 of SOX requires the chief executive officer and chief financial officer to provide a certification accompanying each periodic report, stating, among other things, that the report fully complies with the requirements of sections 13(a) or 15(d) of the Exchange Act.[109] Section 906 provides for criminal penalties for an officer who knowingly provides a false certification, including harsher penalties for willful violations.[110]

Form 8-K serves the purpose of a time-sensitive and ongoing requirement to disclose information triggered by significant corporate events and circumstances. Examples of significant events or circumstances requiring disclosure that could be potentially relevant to patent-related information include:

- Item 2.01—Completion of Acquisition or Disposition of Assets, which requires disclosure if a company, "or any of its majority-owned subsidiaries[, has acquired or disposed] of a significant amount of assets, otherwise than in the ordinary course of business." Item 2.01 includes a bright-line reporting threshold that a company need only report a completed acquisition or disposition of assets if the transaction meets the significant asset test, which deems an acquisition or disposition is

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[108] *The Investor's Advocate: How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation*, U.S. SEC. EXCHANGE COMMISSION (Oct. 13, 2015), http://www.sec.gov/about/whatwedo.shtml [http://perma.cc/7NQU-MEAP].

[109] Sarbanes-Oxley Act of 2002 § 906, 18 U.S.C. § 1850.

[110] *Id.*

deemed significant if (1) the company's "and its other subsidiaries' equity in the net book value of [the] assets or the amount paid or received for the assets . . . exceeded 10% of the total assets of the [company] and its consolidated subsidiaries[,]" or (2) the transaction involved a business that is significant under Regulation S-X.[111]

- Item 2.02—Results of Operations and Financial Condition, which includes public announcements or releases of "material non-public information regarding [a company's] results of operations or financial condition . . . ."[112]
- Item 2.03—Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant.[113]
- Item 2.06—Material Impairments, including a disclosure when a company's "board of directors, a committee of the board of directors, or [an authorized] officer or officers of the [company] . . . if board action is not required, concludes that a material charge for impairment to one or more of its assets, including, without limitation, [an impairment] of securities or goodwill, is required under generally accepted accounting principles applicable to the [company]." The company must disclose: (a) the date of the conclusion that a material charge is required and describe the impaired asset or assets and the facts and circumstances leading to the conclusion that the charge for impairment is

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[111] *See* U.S. SEC. & EXCH. COMM'N, FORM 8-K, at 6–7, https://www.sec.gov/about/forms/form8-k.pdf [http://perma.cc/G29N-F6SE] (last visited Nov. 2, 2015) [hereinafter FORM 8-K]; *see also* U.S. SEC. & EXCH. COMM'N, INVESTOR BULLETIN: HOW TO READ AN 8-K (May 2012), http://www.sec.gov/investor/pubs/readan8k.pdf [http://perma.cc/DZM5-79N4].

[112] FORM 8-K, *supra* note 111, at 7.

[113] *Id.* at 8.

> required; (b) the company's estimate of the amount or range of amounts of the impairment charge; and (c) the company's estimate of the amount or range of amounts of the impairment charge that will result in future cash expenditures.[114]
>
> - Item 4.02—Non-Reliance on Previously Issued Financial Statements or a Related Audit Report or Completed Interim Review.[115]
> - Item 8.01—Other Events, under which "the registrant may, at its option, disclose under this Item 8.01 any events, with respect to which information is not otherwise called for by this form, that the registrant deems of importance to security holders."[116]

Importantly, for this Article, the SEC periodically expands the list of items requiring disclosure on Form 8-K and changes the period of time within which a Form 8-K must be filed.[117]

B. Materiality is the Key

Whether a public company is required to disclose certain information in a Form 8-K filing often depends on the significance, or materiality, of the event or information. Materiality has been defined by the Supreme Court as "a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of information made available."[118] More recently, in *Matrixx Initiatives, Inc. v. Siracusano*,[119] the Supreme Court clarified that there is no "bright-line" test requiring "statistical significance," and that any undisclosed information—statistically measurable or other-

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[114] *Id.* at 11.

[115] *Id.* at 13.

[116] *Id.* at 21.

[117] Edward M. Welch, *Frequently Asked Questions About Form 8-K*, MORRISON & FOERSTER (2015), http://media.mofo.com/files/Uploads/Images/FAQ-Form-8-K.pdf [http://perma.cc/BE2G-WVH7].

[118] Basic v. Levinson, 485 U.S. 224, 232 (1988) (quoting TSC Industries v. Northway, 426 U.S. 438, 449 (1976)).

[119] Matrixx Initiatives, Inc. v. Siracusano, 563 U.S. 27 (2011).

wise—that would "significantly alter[] the 'total mix' of information made available" in the eyes of a reasonable investor could well be material.[120] In a case where the company has made some disclosure, this includes an evaluation of the connection between the company's actual statement and the quality and nature of the information about adverse events that is omitted.[121]

In *Matrixx Initiatives, Inc.*, the Court considered whether a plaintiff bringing a securities fraud claim under the Exchange Act section 10(b)2 and SEC Rule 10b-53 must show that a pharmaceutical company's undisclosed adverse event reports are statistically significant.[122] The Court unanimously decided that statistical significance is not required, but "[s]omething more" is.[123] Because the Court did not provide any guidance on what "something more" may be, some authors have commented that the decision "may initiate unnecessary disclosures of non-material information, hindering an investor's informed decision-making."[124]

Others have stated that, for corporations, deciding what to disclose is "one of the most difficult determinations. And it's going to remain[] that way . . . I think the Supreme Court decision [in *Matrixx Initiatives*] is saying, 'Go out there and struggle, and best of luck for the next few years.'"[125]

C. Scienter is a Key

It should be noted here that scienter is generally required to prove securities fraud under the disclosure requirements, and SOX certifications do not permit an inference of scienter.[126] Moreover,

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120 *Id.* at 43–44.

121 *See* Erik J. Olson, Stephen Thau & Stefan J. Szpajda, *In* Matrixx Initiatives, Inc. v. Siracusano*, the United States Supreme Court Reaffirms That Materiality Depends on a Contextual Analysis of What a Defendant Says*, MORRISON & FOERSTER (Mar. 22, 2011), http://media.mofo.com/files/Uploads/Images/110322-Securities-Fraud.pdf [http://perma.cc/S2K7-98JL].

122 *Matrixx Initiatives*, 563 U.S. at 30.

123 *Id*. at 44.

124 Marcie Brecher, Matrixx Initiatives, Inc. v. Siracusano*: Nasal Spray Decision Throws Corporations off the Scent of "Materiality" Definition*, 7 J. BUS. & TECH. L. PROXY 1, 1–2 (2012).

125 *Id*. at 11–12 (internal citations omitted).

126 *See* Cent. Laborers' Pension Fund v. Integrated Elec. Servs. Inc., 497 F.3d 546, 555 (5th Cir. 2007).

because of the heightened pleadings standard of the Private Securities Litigation Reform Act ("PSLRA"), most security fraud litigation fails at the scienter stage.[127] Courts have held that an inference of scienter is only proper "if the person signing the certification had reason to know, or should have suspected, due to the presence of glaring account irregularities or other 'red flags,' that the financial statements contained material misstatements or omissions."[128] Predictably, then, "red flags" are where a corporation should begin to determine what is "material" for reporting purposes, because knowledge of information and its materiality is also generally required. Essentially red flags are "those facts which come to the attention of an auditor which would place a reasonable auditor on notice that the audited company was engaged in wrongdoing to the detriment of its investors."[129] A "red flag" must be something more than just an incidental accounting violation.[130] Red flags include untrue or misleading statements and drastic overstatement of financials or forecasted projections.[131]

Two things seem to be in common between material corporate information generally required to be disclosed on a Form 8-K and a company's patent information, including a portfolio's value and enforceability as well as known licensing obligations. First, as the next Part will demonstrate, shareholder value and investor decisions are impacted by both, and investors want and need the information but have a hard time getting it.[132] Second, as the next Part

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[127] *See, e.g.*, Glazer Capital Mgmt., LP v. Magistri, 549 F.3d 736, 747 (9th Cir. 2008) (holding that investors' securities fraud claims required pleading of individual, not collective, scienter); Indiana Elec. Workers' Pension Trust Fund IBEW v. Shaw Grp., Inc., 537 F.3d 527, 545 (5th Cir. 2008); Mizzaro v. Home Depot, Inc., 544 F.3d 1230, 1236 (11th Cir. 2008).

[128] *See* Garfield v. NDC Health Corp., 466 F.3d 1255, 1266 (11th Cir. 2006).

[129] *Id.* at 1268 (citing *In re* Sunterra Corp. Sec. Litig., 199 F. Supp. 2d 1308, 1334 (M.D. Fla. 2002)).

[130] *In re* Spear & Jackson Sec. Litig., 399 F. Supp. 2d 1350, 1363 (S.D. Fla. 2005) (citing Holmes v. Baker, 166 F. Supp. 2d 1362, 1379 (S.D. Fla. 2001)).

[131] *See Garfield*, 466 F.3d at 1267–68.

[132] *See* Steven Davidoff Solomon, *In Corporate Disclosure, a Murky Definition of Material*, N.Y. TIMES: DEALBOOK (Apr. 5, 2011, 5:57 PM), http://dealbook.nytimes.com/2011/04/05/in-corporate-disclosure-a-murky-definition-of-material/ [http://perma.cc/B2HC-HKHZ] ("Why all the secrecy? It seems that each day brings a new revelation of a company tardily disclosing something important. Goldman Sachs was slow to disclose that there was an investigation into the Abacus transaction; Goldman, as well as Procter

will also demonstrate, more information is known by corporations than is disclosed to shareholders.[133] Whether this knowledge meets the scienter standard or not, corporations likely make a conscious decision not to take on unnecessary risk by making additional patent-related disclosures. Certainly, there are good reasons for this that will be discussed in the next Part of this Article. Still, there are good policy reasons why this information, or at least more information than is currently being disclosed, should be provided to shareholders and potential investors. Corporations should recognize that shareholders are becoming much more knowledgeable about the impact that patent events have on the value of their equity, and this will eventually lead to a debate, and lawsuits, about the disparity of information that is known by corporations and disclosed to investors.[134] I believe that the information highlighted in Part I of this

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& Gamble and AMR, all said nothing when one of their directors, Rajat K. Gupta, became ensnared in the Galleon Group insider trading investigation. There is the debate about what Apple should say publicly about Steve Jobs's health. Most recently, Berkshire Hathaway said a senior executive, David L. Sokol, had bought shares of a company before that company was acquired by Berskshire—a revelation it made only when it announced Mr. Sokol's resignation. It is all a matter of materiality . . . . It's here where companies have gotten into trouble. A company's disclosure of controversial information is run past the lawyers, who look at it through a legal perspective. Since materiality is a legal concept to them, the lawyers too often find ways to judge it not material. It's not directly related to the business (Mr. Jobs), no official allegations have been made (Mr. Gupta) or it's not relevant to judging business performance (Abacus).").

[133] *Id.* ("This is the problem with the current disclosure scheme and its definition of materiality. It is increasingly disconnected from the desires of investors and the marketplace. Investors live in a digital world of real-time communication. Information is a commodity whose value rapidly deteriorates—the faster a company discloses, the better, from an investor's perspective. The definition of materiality is from the 1980s, another time. Companies have not kept up and too often view disclosure as a game, with the goal to avoid disclosure.").

[134] *See* Joe Walker & Rob Copeland, *New Hedge Fund Strategy: Dispute the Patent, Short the Stock*, WALL ST. J. (Apr. 7, 2015), http://www.wsj.com/articles/hedge-fund-manager-kyle-bass-challenges-jazz-pharmaceuticals-patent-1428417408 [http://perma.cc/6FAA-UTVS]; *see also* Bruce Berman, *Battle Between Tessera and Activist IP Investor is Heating Up*, IP CLOSE UP (May 9, 2013), https://ipcloseup.wordpress.com/2013/05/09/battle-between-tessera-and-activist-ip-investor-is-heating-up/ [http://perma.cc/C9LU-EUEF] ("Activist investors have been around for decades. Carl Icahn, among others, have made them famous (or is that infamous?), and many shareholders rich. Icahn, as you may recall, put pressure on Motorola to sell its patents, before the entire company was sold to Google for $12.5 billion. Starboard has brought the challenge of higher value to businesses with significant IP holdings. It played an important role in the AOL's $1.05 billion portfolio sale to Microsoft, which was in turn partially sold to Facebook."); *Shareholder Activism*:

Article is only an example of the type of information that investors may desire and that corporations should consider providing. As a result, this leaves corporations and investors with a need to more clearly define materiality as it relates to patent information. As shareholders become increasingly concerned with patents and their impact on investment, companies should err on the side of precaution so as to avoid having to "[g]o out there and struggle."[135] In addition, the investor perspective and interests should also be considered in determining what needs to be disclosed. As another author has offered: "For investors' sake, companies need to view materiality from a broader perspective. It is not just about whether the SEC could bring an action, but what investors will find important—in other words, will it move the market price?"[136]

IV. THE CURRENT DISCLOSURE ENVIRONMENT: PATENT INFORMATION AND PUBLIC COMPANIES

As an overarching statement that will be fleshed out in this Part, public companies don't disclose much, if anything, to shareholders about their patents, patent portfolio value, or patent risk. A review of the SEC filings, press releases and transcripts of investor analyst conference calls made by some of the companies identified in Part II of this Article found that those entities disclosed very little or no information about the acquired assets, at the time of the assignment or since. One such public company, Pandora, made a statement about the cost of its acquisition ($8 million) on an investor conference call.[137]

Capitalism's Unlikely Heroes, ECONOMIST (Feb. 7, 2015), http://www.economist.com/news/leaders/21642169-why-activist-investors-are-good-public-company-capitalisms-unlikely-heroes [http://perma.cc/V3Q6-JLS9].

135 Brecher, *supra* note 124, at 1–2.

136 Solomon, *supra* note 132.

137 Ben Sisario, *Ad Revenue from Mobile for Pandora Increases*, N.Y. TIMES (Aug. 22, 2013), http://www.nytimes.com/2013/08/23/business/media/ad-revenue-from-mobile-for-pandora-increases.html [http://perma.cc/LGT2-CSUN] ("In a conference call with journalists and investors, Pandora announced that it had recently spent $8 million on 'a broad patent portfolio' from Yahoo.").

A. Form 10-Ks and Patent Information

To provide additional color on the situation with actual examples that differ greatly in the amount of information disclosed, a review of Form 10-K filings from three public companies—Avaya, Google, and General Electric—is discussed in the order of most information disclosed to the least information disclosed.

Avaya, in its Form 10-K filed on September 30, 2011, regarding its patent holdings, stated the following:

> As of September 30, 2011, *we had approximately 5,600 patents* and pending patent applications, including foreign counterparts . . . .
>
> *Our intellectual property holdings include those assigned to us by Lucent Technologies (now Alcatel-Lucent) at Avaya's inception*, which included a number of patents, trademarks, copyrights, trade secrets and other intellectual property directly related to and important to our business. *Lucent and its subsidiaries also granted certain rights and licenses to specified patents, trademarks, copyrights, trade secrets and other intellectual property needed for the manufacture, use and sale of our products. Rights to these patents were granted through a cross license entered into with Lucent. In addition, Lucent conveyed to Avaya numerous licenses and sublicenses under patents of third parties.*
>
> We will obtain patents and other intellectual property rights used in connection with our business when practicable and appropriate. Historically, we have done so organically or through commercial relationships as well as in connection with acquisitions, *including the acquisition of NES. For example, in the acquisition of NES, we acquired over 800 patents and patent applications and were licensed a significant number of patents, trademarks, copyrights, trade secrets and other intellectual property*.[138]

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[138] Avaya Inc., Annual Report (Form 10-K), at 20 (Sept. 30, 2011) [hereinafter Avaya 2011 Annual Report] (emphasis added).

Compare the above to Avaya's Form 10-K filed September 30, 2014. Regarding its patent holdings, Avaya stated the following:

> As of September 30, 2014, *we had approximately 5,400 patents* and pending patent applications, including foreign counterpart patents and foreign applications. Our patents and pending patent applications cover a wide range of products and services involving a variety of technologies, including, but not limited to, unified communications (including video, social media, telephony and messaging), contact centers, wireless communications and networking. The durations of our patents are determined by the laws of the country of issuance. For the U.S., patents may be 17 years from the date of issuance of the patent or 20 years from the date of its filing, depending upon when the patent application was filed. In addition, we hold numerous trademarks, both in the U.S. and in other countries.
>
> *We will obtain patents and other intellectual property rights used in connection with our business when practicable and appropriate. Historically, we have done so organically or through commercial relationships as well as in connection with acquisitions*.[139]

Noticeably, Avaya does not disclose any information in its 2014 Form 10-K about licenses it has received from other entities, which is a difference from its 2011 Form 10-K in which it discloses that it received licenses to Lucent Technologies' patents and third-party patents.[140] Likewise, the 2014 Form 10-K doesn't include any information about patent acquisitions.[141] The omission means either (a) Avaya received licenses or acquired patents in 2013–2014 that it believed were not material, or (b) Avaya did not receive any licenses or acquire any patents.

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[139] Avaya Inc., Annual Report (Form 10-K), at 19 (Sept. 30, 2014) [hereinafter Avaya 2014 Annual Report] (emphasis added).

[140] *See generally id.*; *see* Avaya 2011 Annual Report, *supra* note 138, at 20.

[141] *See generally* Avaya 2014 Annual Report, *supra* note 139.

In its 2011 Form 10-K, Avaya stated the following regarding patent-related risks:

> *From time to time, assertions of infringement of certain patents or other intellectual property rights of others have been made against us*. In addition, certain pending claims are in various stages of litigation. *Based on industry practice, we believe that any licenses or other rights that might be necessary for us to continue with our current business could be obtained on commercially reasonable terms. However, we cannot assure you that any of those licenses or other rights will always be available on acceptable terms or that litigation will not occur*. The failure to obtain necessary licenses or other rights, or litigation arising out of such claims, could adversely affect our business.
>
> For more information concerning the risks related to patents, trademarks and other intellectual property, please see . . . "Risk Factors—Risks Related to Our Business—*We may be subject to litigation and infringement claims, which could cause us to incur significant expenses or prevent us from selling our products or services*."[142]

Compare the above quotation with Avaya's 2014 Form 10-K, in which it stated the following regarding license obligations and other patent risks:

> *We also have licenses to intellectual property for the manufacture, use and sale of our products*.
>
> . . . .
>
> *We are dependent on our intellectual property*. If we are not able to protect our proprietary rights *or if those rights are invalidated or circumvented, our business may be adversely affected*. We may be subject to litigation and infringement claims, which could cause us to incur significant expenses or prevent us from selling our products or services.

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142 Avaya 2011 Annual Report, *supra* note 138, at 20 (emphasis added).

> *. . . [N]or can assurances be made that any of our patents, patent applications or our other intellectual property or proprietary rights will not be challenged, invalidated or circumvented* . . . . Patent litigation and other challenges to our patents and other proprietary rights are costly and unpredictable and may prevent us from marketing and selling a product in a particular geographic area. If we are unable to protect our proprietary rights, we may be at a disadvantage to others who did not incur the substantial time and expense we incurred to create our products.[143]

The noticeable addition in 2014 is with regard to a general susceptibility to patent challenges or invalidations that could affect the business. Although only a general statement, this information is seemingly more relevant, or material, in 2014 than in 2011, given the trend of activities highlighted in Part I.[144] Avaya is more direct about the channels through which it intends or does obtain patent rights, and that they do not rely solely on its own organic efforts. Similarly, Avaya adds that while it believes it can obtain licenses it needs under reasonable terms, it cannot promise that to investors.[145] While this level of detail may not be what investors need or desire, in comparison to other public companies this is actually a lot of information.

Compare Avaya's Forms 10-K with that of Google. Google did not provide as much information about its own patent portfolio as does Avaya, such as the number of patents it holds.[146] Instead, Google offered the following as it relates to its own patents:

> Our patents, trademarks, trade secrets, copyrights, and other intellectual property rights are important assets for us. *Various events outside of our control pose a threat to our intellectual property rights, as well as to our products, services and technologies*. For example, effective intellectual property protection may not be

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143 Avaya 2014 Annual Report, *supra* note 139, at 19–23 (emphasis added).

144 *See supra* Part I.

145 *See* Avaya 2014 Annual Report, *supra* note 139, at 19.

146 *See* Google Inc., Annual Report (Form 10-K), at 10–11 (Feb. 2015) (emphasis added).

> available in every country in which our products and services are distributed or made available through the Internet. *Also, the efforts we have taken to protect our proprietary rights may not be sufficient or effective*.[147]

Noticeably, Google did not offer any information about the manner in which it grows or intends to grow its portfolio, whether it relies solely on organic growth or acquisition.[148] Moreover, Google did not provide any information about licenses or acquisitions, despite the fact that we know they have been very active in that manner.[149] Regarding patent risks and licensing obligations, Google offered a bit more transparency:

> New laws and regulations (or new interpretations of existing laws and regulations) may also impact our business. For example, *current and new patent laws such as U.S. patent laws and European patent laws may affect the ability of companies, including us, to protect their innovations and defend against claims of patent infringement*. The costs of compliance with these laws and regulations are high and are likely to increase in the future.
>
> . . . .
>
> . . . [P]atent holding companies may continue to seek to monetize patents they have purchased or otherwise obtained. As we have grown, the intellectual property rights claims against us have increased and may continue to increase as we develop new products, services, and technologies.

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147 *Id*. at 11.

148 *See id*. at 10–11.

149 *See id*.; *see also* Antonio Regalado, *Google's Growing Patent Stockpile*, MIT TECH. REV. (Nov. 29, 2013), http://www.technologyreview.com/news/521946/googles-growing-patent-stockpile/ [http://perma.cc/8KL5-U7LD] ("Last year, in its largest acquisition ever, Google spent $12.5 billion to buy Motorola Mobility, mostly to grab its trove of 17,000 patents and 7,000 patent applications. It has also purchased more than a thousand patents from IBM and picked up others from telephone companies and auto parts makers."); Tom Simonite, *Google's Troubled Search for Valuable Patents*, MIT TECH. REV. (Oct. 7, 2011), http://www.technologyreview.com/news/425678/googles-troubled-search-for-valuable-patents/ [http://perma.cc/B7E8-RUNF].

> *We have had patent, copyright, and trademark infringement lawsuits filed against us claiming that certain of our products, services, and technologies infringe the intellectual property rights of others . . . . Adverse results in any of these lawsuits may include awards of substantial monetary damages, costly royalty or licensing agreements (if licenses are available at all) . . . .*
>
> . . . .
>
> Although we seek to obtain patent protection for our innovations, it is possible we may not be able to protect some of these innovations. Moreover, *we may not have adequate patent or copyright protection for certain innovations that later turn out to be important. Furthermore, there is always the possibility, despite our efforts, that the scope of the protection gained will be insufficient or that an issued patent may be deemed invalid or unenforceable.*[150]

One omission of note, compared to Avaya, is that Google fails to mention a need or potential need to license patents, or that it believes reasonable licensing terms may always be obtainable.[151] Recall that Avaya offered that it "[has] licenses to intellectual property for the manufacture, use and sale of our products" and it "believe[s] that any licenses or other rights that might be necessary for us to continue with our current business could be obtained on commercially reasonable terms."[152] Google, on the other hand, provides no disclosure about licenses it has obtained or may need to continue its business.[153] It only references a need to pay money for use of third-party patent rights in the context of an adverse judgment in a lawsuit or other claim against them.[154]

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[150] *See* Google Inc., *supra* note 146, at 10–11 (emphasis added). Despite recognizing "the costs of compliance with these laws and regulations are high and are likely to increase in the future," Google does not mention the hefty costs it has itself spent to lobby patent law changes which directly affect the ability to enforce patents based on the identity of the patent holder or type of patent. *See id.*

[151] *See id*.

[152] Avaya 2011 Annual Report, *supra* note 138, at 20.

[153] *See* Google Inc., *supra* note 146.

[154] *See id*. at 13.

Compare Avaya and Google's disclosures with that of General Electric. In its Form 10-K filed on June 30, 2014, General Electric only mentions patents while listing its "Intangible Assets subject to Amortization," and even then it is titled "patents and technology" generally.[155] There is no mention of the company's dependence upon patented technology or obligations or potential risks related to licensing third-party patents or invalidation of its own patents.[156]

B. Form 8-Ks and Patent Information

As discussed in Part III, the questions of whether information should be disclosed in a Form 8-K generally involves a determination of materiality of the information or event, and the risk of having to endure a securities fraud allegation also depends on whether the officers that signed off on certain disclosures knew or should have known that they were omitting certain material information.

The materiality of patent information and whether an investor would consider it to change the "total mix" of information it needs or has depends a lot on how important patents really are to the value of a company. A determination about information specific to certain patents only, however, would likely be a case-by-case determination that includes factors such as (a) the number of total patents held by the company and the number of patents that are relevant to the information, and (b) the importance or relevance of the patents in question to the core business operations of the company. Under the language of Item 2.01 of Form 8-K—Completion of Acquisition or Disposition of Assets of the Company—most patent acquisitions or sales by a company as large as and with a patent portfolio the size of IBM will likely not meet the ten percent of assets threshold.[157] For example, even if all of IBM's 1,899 patents in CPC G06Q were invalid, which they are not, it would not come close to equaling ten percent of its assets, or even its patent assets.[158] However, since the value of all patents are not equal, and the value of any particular patent to a company can be critical (con-

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155 Gen. Elec. Co., Annual Report (Form 10-K), at 167 (June 30, 2014).

156 *Id*.

157 FORM 8-K, *supra* note 111, at 6–7.

158 According to Innography, IBM has 94,260 granted U.S. patents as of April 17, 2015. *See* Search Performed Using Innography (on file with author).

sider Apple's "swipe-to-unlock" patent), such an acquisition or disposition event should not be based solely on the number of patents.

Consider Item 2.02 of Form 8-K and its requirement to disclose "material non-public information."[159] Assuming that we would be able to determine that the hypothetical invalidation of 1,899 IBM patents would be material information, the next question is whether their susceptibility to invalidation, or even to a reduced enforceability, is already public information or information that IBM knows but would not dare tell anyone else. The *Alice* decision is public, as is all of the literature discussing its impact on software, information processing business method patents.[160] However, IBM's patent holdings that are particularly susceptible to invalidation or a lack of enforceability as a result of the ruling and the current IPR environment is not readily accessible information. I was able to determine that IBM had 1,899 patents in the *Alice* CPC, but I did so using Innography, a software tool that is not free or cheap. Further, only IBM patent experts, and not the public or potential investors, know which of its patents within this group are particularly valuable or to be relied upon for current or future business operations. If IBM has promoted a new product or software, and that product or software relies on patent protection from a patent that is now more susceptible to invalidation because of recent court rulings or the current IPR environment, should that be information disclosed to shareholders or potential investors?

With regard to knowledge and the scienter element, consider information related to licensing obligations and patent risk. As it relates to director fiduciary duties to monitor patent risk taking, I have already proposed that a higher accountability to shareholders may be worthwhile for both the corporation and the shareholder.[161] As demonstrated in this Part, not all companies disclose patent licensing obligations. However, many companies know they have potential licensing obligations that are only unmaterialized at the moment because the patent owner has not asserted the patents or offered a license yet. For example, as demonstrated in this Part,

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159 FORM 8-K, *supra* note 111, at 7.

160 *See, e.g.*, Carbonneau, *supra* note 89.

161 *See* McClure, *supra* note 2.

there are thousands of patents that are essential to the IEEE 802.11n standard. If we take just the patents at issue in the *In re Innovatio* case, nineteen essential patents, which were determined essential to the standard by Judge Holderman, any company that produces or sells 802.11n compliant products and which is unlicensed under the patents—directly or by exhaustion—knows it has a patent risk and potential licensing obligation related to these patents. Indeed, Innovatio IP Ventures, LLP filed a new case against public company Marvell (NASDAQ: MRVL) on March 16, 2015.[162] When the patents were determined essential by Judge Holderman in 2013, should Marvell—who knows it makes 802.11n compliant products[163]—have disclosed the fact that it was infringing these patents without a license and that it could have a license obligation in the future? The importance of the information to potential investors and shareholders is undoubtedly critical. After all, when a federal jury in Pittsburgh ordered Marvell to pay a $1.17 billion award for infringing Carnegie Mellon patents covering integrated circuits in 2013, Marvell's stock price fell to its lowest point of $6.98 per share, resulting in an approximate market capitalization of around $3.4 billion dollars—half of what it is today.[164] License information is also not available to investors, as only Marvell knows which patents it holds a license to and which it does not. Executed licenses are typically confidential, and publicly stating that a company does not hold licenses to the patents it is likely infringing poses obvious risks that would be enough to drive any attorney up the wall. But the answer cannot just be that investors get the short end of the stick, can it? Marvell could rely on the fact that the essentiality of the Innovatio patents and the compliance of its products with

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[162] *See* Stephen R. Freeland, *Innovatio Files Three New SEP Cases Against WiFi Chip Manufacturers*, ESSENTIAL PAT. BLOG (Mar. 19, 2015), http://www.essentialpatentblog.com/2015/03/innovatio-files-three-new-sep-cases-against-wifi-chip-manufacturers/ [http://perma.cc/YA2C-SLGY].

[163] *Marvell Announces Industry's First 802.11n 450 Mbps Solution for Highest Wi-Fi Throughput and Extended Range*, MARVELL (Jan. 2, 2008), http://www.marvell.com/products/wireless/wi-fi_450mbps_802.11n/release/972/ [http://perma.cc/8KLE-N6FD] ("*Compliant with the 802.11n specification*, the new Marvell TopDog 11n-450 chip also offers . . . .") (emphasis added).

[164] *See* Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., No. 09-290, 2014 WL 1320154, at *15–16 (W.D. Pa. Mar. 31, 2014), *rev'd in part*, *vacated in part*, 807 F.3d 1283 (Fed. Cir. 2015).

the 802.11n standard are both public pieces of information, and investors should put this information together to assume there *could* be a licensing obligation *if* Marvell is not licensed. The "could" and "if" of that determination, however, were incredibly expensive bets to be on the wrong side of in Marvell's loss against Carnegie Mellon.

The formula for determining materiality and what is "non-public" related to any patent information is not clear, nor do I believe it could be proscribed by a bright-line-rule. What is clear, however, is that more information than what is currently being offered is owed to investors and should be required by statute or the courts. The main reason for this is twofold: (1) patent information is important, if not critical, to accurate investment decisions, and (2) most patent information is not easily obtainable by shareholders and, in many cases, is not obtainable at all.

C. Patent Information is Important to Shareholders

In general, empirical studies have proven that patent information such as patent litigation events do affect shareholder value.[165] Other studies have offered that as much as eighty percent of corporate value may be attributable to intangible assets.[166] The Marvell example already highlighted in this example puts it in perspective—a public company stock that hit an all-time low as a result of a patent litigation loss, when information known by Marvell and not disclosed to investors could have prevented the bath that some investors had to take. The importance of information related to the potential devaluation of a patent portfolio, however, cannot be a "one-size-fits-all" determination. For small pharmaceutical or biotech companies that rely on one or a few families of patents for exclusive rights to build market share, the devaluation of a portfolio is a significant event. If, for example, the investors of Acorda Therapeutics (NASDAQ: ACOR) could have been given some warning that their patent was susceptible to invalidation before activist shareholder Kyle Bass filed his IPR, it could have saved them sig-

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165 *See* NAM & NAM, *supra* note 1.

166 *Ocean Tomo's Intangible Asset Market Value Study*, *supra* note 1.

nificant money. Share prices fell almost ten percent following the IPR filing.[167]

D. Important Patent Information is Not Available to Shareholders

To guard against rampant securities fraud allegations and protect business judgment decisions, courts have established an interpretation of the scienter pleading requirement that is "the most demanding in the country."[168] This heightened standard has its merits. The question becomes this: as it relates to patent information such as knowledge of patent infringement, where do we draw the line between a risk preventative business strategy and a conscious decision not to disclose important information to investors? Patent licensing information is not available to shareholders, and so they could never know for sure if a company has a patent infringement risk or not. Similarly, the importance of certain patents to current and future business prospects, as well as the potential for certain patents to be invalid, is information that experts inside of a company know and (not without good reason) do not disclose publicly.

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[167] Julia La Roche, *Kyle Bass' War Against the US Pharmaceutical Industry Has Officially Begun*, BUS. INSIDER (Feb. 10, 2015), http://www.businessinsider.com/kyle-bass-files-first-ipr-petition-2015-2 [http://perma.cc/6RLJ-A47D].

[168] *In re* Silicon Graphics, Inc. Sec. Litig., 183 F.3d 970 (9th Cir.1999); *see also* Berger v. Ludwick, C-97-0728-CAL, 2000 WL 1262646, at *3, *7 (N.D. Cal. Aug. 17, 2000), *aff'd*, 15 Fed. Appx. 528 (9th Cir. 2001); George A. Markel & Francis S. Chlapowski, *Life After Silicon Graphics: Will the PSLRA be Enforced?*, 1151 PRAC. L. INST. 809, 813 (1999).