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J. Jonas Anderson

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Nontechnical Disclosure

*J. Jonas Anderson**

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INTRODUCTION

One of the primary goals of the patent system is the broad dissemination of technical knowledge.¹ Patent law forces inventors to

* Associate Professor of Law, American University Washington College of Law. Many thanks for comments on previous drafts and presentations of this article to Paul Gugliuzza, Andres Sawicki, Clark Asay, Jake Linford, Jason Rantanen, Kevin Collins, Sean Seymore, Tim Holbrook, Dan Burk, Jeanne Fromer, and Dmitry Kharstedt. As always, a special thank you to my wife, Jenn, for supporting me in every way.

1. See *Eldred v. Ashcroft*, 537 U.S. 186, 224 (2003) (Stevens, J., dissenting) (“Complete disclosure as a precondition to the issuance of a patent is part of the *quid pro quo* that justifies the limited monopoly for the inventor as consideration for full and immediate access by the public when the limited time expires.” (citing *Gibbons v. Ogden*, 22 U.S. (9 Wheat.) 1, 175 (1824))).

disclose how their inventions work.² Inventors seeking a patent are required to describe “the manner and process of making and using” the patented invention.³ Additionally, a patent must “enable any person skilled in the art . . . to make and use” the invention.⁴ Despite this explicit statutory disclosure requirement, patent law could do better at ensuring that patents convey useful information to the public.⁵ Academics have vigorously debated about whether and to what degree the patent system performs its disclosure function.⁶ Many academics claim that “disclosure” of inventions is less effective than courts presume, with scientists either not caring about or actively ignoring patents and the technical information they contain.⁷ These academics argue that the patent document is not a useful source of information for scientists and innovators.⁸ Other academics take the opposite position, arguing that the disclosure mandated by the patent system leads to valuable dissemination of information.⁹

This Article argues that both positions, counterintuitively, may be correct in some cases. Patent law may fail to inform skilled artisans of the patented invention’s technical details to the degree we would desire,¹⁰ yet still provide valuable *nontechnical* information to people who are in a position to invest in the invention.¹¹ The patent document’s ability to disclose is not coextensive with its ability to teach about the invention, a fact often ignored in the academic literature. This underappreciated insight about patent disclosure broadens discussion of the disclosure function’s role in information

2. 35 U.S.C. § 112 (2012).

3. *Id.*

4. *Id.*

5. *See, e.g.*, Jeanne C. Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539, 560–62 (2009) (making the case that the patent document is irrelevant as a means of disclosure).

6. *See id.*; Timothy Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123, 139–46 (2006) (arguing that patent law does a poor job of teaching); Jason Rantanen, *Peripheral Disclosure*, 74 PITT. L. REV. 1, 39–41 (2012) (defending patent disclosure by pointing out that “peripheral disclosure” allows patents to disseminate their information in areas other than the patent document).

7. Fromer, *supra* note 5, at 560–62; Mark A. Lemley, *Ignoring Patents*, 2008 MICH. ST. L. REV. 19, 21–25 (claiming that patents are largely ignored by scientists and innovators).

8. Fromer, *supra* note 5, at 560–62; Lemley, *supra* note 7, at 21–25.

9. *See* Lisa L. Ouellette, *Do Patents Disclose Useful Information?*, 25 HARV. J.L. & TECH. 545, 585 (2012) (finding that “patents can be useful as sources of technical information” in the nanotechnology industry); Rantanen, *supra* note 6, at 39–44 (arguing that patents allow “peripheral disclosure” to occur).

10. Either because the patent document itself is unhelpful for scientists or because the search costs might be too high for an interested researcher to locate a specific patent.

11. Investment can be through purchasing products from a company, investing in the company that makes patented products, or some other means.

transfer: a patent can inform innovators, investors, and consumers about the value of an inventive idea; a patent can advertise new technologies to fellow technologists; a patent can promote useful embodiments of the invention to investors. All of these are examples of what this Article terms “nontechnical disclosure.”

Information divulged by this nontechnical disclosure might include the patent owner’s identity, a company’s innovative nature, or the very existence of patent rights. Nontechnical disclosure does not meet the statutory requirement for enablement—that a patent inform a skilled artisan how to make or use the invention.¹² Despite this, it can be highly useful and valuable to individuals seeking information about the technology. Essentially, nontechnical disclosure is information from the patent document about aspects of an invention *other than* how the invention is made or used.¹³

Including nontechnical disclosure in debates about patent law’s disclosure function can help us better understand the patent system in two primary ways. First, this form of disclosure provides an additional explanation for why people seek to patent inventions even though the value for most inventions is less than the cost of obtaining the patent. Nontechnical disclosure can be valuable to the implementers or commercializers of the invention—the same people who may choose not to read the more formal disclosure in the patent document. Nontechnical disclosure is also valued by individuals who purchase the patent rights in the new invention. Consumers are rarely skilled in the art of a patent, and therefore some type of disclosure is necessary to convince them that an invention is worth spending money on. Further, nontechnical disclosure is valuable to investors or venture capitalists who are less concerned with how an invention works than with its market potential, appeal to consumers, or other nontechnical promise. While a patent may not be worth obtaining when simply considering the right to exclude gained by patenting, the decision to seek patent protection makes more sense when one considers the wider range of audiences for the patent document (consumers, investors, etc.).

Second, nontechnical disclosure should color our understanding of the patent system and, more precisely, the patent document’s role in disclosure. Nontechnical disclosure can lend support to the prospect theory of patents, explaining, at least partially, how follow-on

12. 35 U.S.C. § 112(a) (2012).

13. See Clark D. Asay, *The Informational Value of Patents*, 31 BERKELEY TECH. L.J. 259, 265 (2016) (arguing that disclosure facilitates information signaling, which is a form of nontechnical disclosure).

innovators discover the patented invention in the first place. Much has been written about the patent system's teaching function, by which the patent informs a person of ordinary skill in the art of the technical workings of the patented invention.¹⁴ But much less has been written about the nontechnical type of disclosure.¹⁵ Nontechnical disclosure's relevance to patent theory is best illustrated by focusing on the commercialization theory¹⁶ and the prospect theory¹⁷ of patent law. These theories hold that the patent system benefits society by centralizing an invention in the hands of a small group of people (the patent owner(s)). Once armed with a patent, the patent owner coordinates the search for partners that have the ability to commercialize the invention.¹⁸ For commercialization theorists, nontechnical disclosure has special relevance: it helps to explain how patent owners are able to attract others with whom to collaborate.¹⁹ The recognition of nontechnical disclosure leads to a more robust understanding of what patent disclosure is and what role it has in commercializing patented inventions.

But we should also be wary of assigning too much importance to nontechnical disclosure. There are good reasons to doubt nontechnical disclosure's value. For instance, marketers may use this type of disclosure in a manner that attempts to convince customers that their company is innovative. However, the patents on which this marketing is based may be invalid or technically useless. Or

14. See *supra* notes 5–6 and accompanying text.

15. See Ted Sichelman, *Commercializing Patents*, 62 STAN. L. REV. 341, 349 (2010):

Even the prospect theory of patents, which analogizes the innovation process to mining a rich vein of ore, never quite explains how the vein is initially discovered. This oversight can be critical, because identifying the specific problem to be solved can create information that free riders can exploit, potentially diminishing *ex ante* incentives to discern areas in need of innovation.

16. See F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 707–08 (2001) (“The invention must be developed into some commercial embodiment.”).

17. See Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977). Both the commercialization theory and the prospect theory posit that broad property-like patents are needed in order to spur innovation. See Sichelman, *supra* note 15, at 375–76.

18. Kitch, *supra* note 17, at 277–78 (“[A] patent system lowers the costs for the owner of technological information of contracting with other firms possessing complementary information and resources.”); Sichelman, *supra* note 15, at 375–76.

19. See Sichelman, *supra* note 15, at 364. Many academics separate the commercialization theory from the prospect theory, and with good reason: the commercialization theory is focused on bringing inventions into commerce, while the prospect theory is focused on early disclosure of inventions. For purposes of this Article, however, they will be treated interchangeably because both theories are interested in achieving the same goal: locating the best intermediary to bring the patented invention to market.

commercializers may make boastful claims in their patent in an attempt to attract the broadest range of partners. In short, nontechnical disclosure should be looked at warily for the precise reasons that make it valuable: it is aimed at the person *unskilled* in the art, so the information contained in nontechnical disclosure is often vague, misleading, or cannot be verified. Despite its questionable value, the existence of nontechnical disclosure tells us something about why people seek patents.

This Article will proceed as follows. Part I will describe patent disclosure as it has been largely understood by judges and academics: by the requirements found in § 112 of the Patent Act. Part II will analyze what place disclosure has in the three main theories for the existence of the patent system: the incentive to invent theory, the incentive to disclose theory, and the prospect (or commercialization) theory. It ultimately concludes that all three of these theories fail to account for nontechnical aspects of disclosure. Part III will introduce nontechnical disclosure and examine three possible targets of nontechnical disclosure—consumers, venture capitalists, and follow-on innovators—in working through nontechnical disclosure in practice. Part IV then speculates on what nontechnical disclosure theory can contribute to broader discussions of patent disclosure theory.

I. THE LEGAL REQUIREMENTS OF PATENT DISCLOSURE

Courts in the United States have consistently emphasized that the public is the ultimate beneficiary of the patent system.²⁰ While the patentee receives twenty years of exclusive rights to practice the invention, the public benefits by learning how the patent works. This is the basic patent quid pro quo: the exclusive right to practice an invention in exchange for disclosure of the invention.²¹ Without the patent system to protect an invention, an inventor is likely to keep the

20. See, e.g., *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 63 (1998) (stating that the patent system should be thought of as “a carefully crafted bargain that encourages both the creation and the public disclosure of new and useful advances in technology, in return for an exclusive monopoly for a limited period of time”); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150–51 (1989); *United States v. Dubilier Condenser Corp.*, 289 U.S. 178, 186–87 (1933) (“In consideration of [an invention’s] disclosure and the consequent benefit to the community, the patent is granted.”).

21. Timothy R. Holbrook, *The More Things Change, the More They Stay the Same: Implications of Pfaff v. Wells Electronics, Inc. and the Quest for Predictability in the On-Sale Bar*, 15 BERKELEY TECH. L.J. 933, 937 (2000).

invention as a trade secret, or worse, not invent at all.²² Information about inventions would likely remain hidden from the public or never be discovered in the first place. Either way, innovation would be slowed.²³ But with the patent system (and the disclosure that such a system mandates), the public is able to enjoy the new technical knowledge as soon as the patent is published, although they may not practice the invention until the twenty-year patent term expires.

The legal requirements for what a patent must disclose are found in 35 U.S.C. § 112(a).²⁴ There are three main, somewhat overlapping, disclosure requirements under the current U.S. regime:²⁵ enablement, written description, and best mode.²⁶ Specifically, the patent act describes the following requirements:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.²⁷

The primary way that a patent discloses information is found in the enablement requirement established in §112.²⁸ The former Chief Judge of the Federal Circuit, Judge Rader, has stated that enablement is “arguably the most important patent doctrine after obviousness.”²⁹ Enablement requires that a patent teach a person skilled in the relevant art how to make and use the invention.³⁰ It ensures that once the patent term expires, others will be able to

22. Vincenzo Denicolo & Luigi A. Franzoni, *The Contract Theory of Patents*, 23 INT'L REV. L. & ECON. 365, 365–66 (2004); see Petra Moser, *How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World's Fairs*, 95 AM. ECON. REV. 1214 (2005) (demonstrating that countries with patent laws generated more and more varied innovations than those that lacked a patent system).

23. See Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 268–69 (2007); Fromer, *supra* note 5, at 548 (“Disclosure of information about inventions stimulates productivity . . . [by] permit[ing] society at large to apply the information by freely making or using the patented invention after the expiration of the patent.”).

24. Holbrook, *supra* note 6, at 127.

25. Prior to the creation of the U.S. patent system, the U.K. had a more voluntary system of disclosure. Adam Mossoff, *Rethinking the Development of Patents: An Intellectual History, 1550–1800*, 52 HASTINGS L.J. 1255, 1289–91 (2001).

26. 35 U.S.C. § 112(a) (2012).

27. *Id.*

28. Jason Rantanen, *Patent Law's Disclosure Requirement*, 45 LOY. U. CHI. L.J. 369, 370 n.2 (2014) (noting that disclosure is a “meta-principle” that is the overarching goal enacted by the more formal doctrinal incantations of § 112).

29. *Enzo Biochem, Inc. v. Gen-Probe Inc.*, 323 F.3d 956, 982 (Fed. Cir. 2002) (dissenting from denial of rehearing en banc).

30. Holbrook, *supra* note 6, at 128.

practice the invention.³¹ The Federal Circuit has determined that a patent needs to teach the basic functioning of the invention, although that functioning may require a bit of experimenting from a person of ordinary skill.³² Enablement allows for some experimentation to occur, but once that experimentation becomes “undue” the patent has not sufficiently disclosed the invention under 35 U.S.C. § 112.³³ The enablement requirement, therefore, is conceptually simple; the inventor must teach how to make and use the invention to someone skilled in the art of the patent.³⁴ But in practice making such judgments is fact-intensive and fraught with difficulty.³⁵ Whether a disclosure is enabling is one of the thorniest areas of patent law.³⁶

The written description requirement further complicates things. For years this doctrine was used largely to police applicants who added “new matter” to an already filed application by amending their claims (which is permissible)³⁷ in ways that had no written description in the specification (which is impermissible).³⁸ But the Federal Circuit has expanded the role of the written description requirement, applying it to originally filed claims as well as after-arising amendments.³⁹ The result has been a further hurdle to

31. *Id.*

32. *In re Wands*, 858 F.2d 731, 736–37 (Fed. Cir. 1988).

33. *Id.*; see also Sean B. Seymore, *Heightened Enablement in the Unpredictable Arts*, 56 UCLA L. REV. 127, 147–50 (2009) (explaining the Federal Circuit’s jurisprudence regarding what constitutes “undue experimentation”).

34. Holbrook, *supra* note 6, at 129 (“Enablement, while conceptually simple, is legally and factually complex.”).

35. *Id.*

36. Some commentators note that the fact-intensive and therefore high cost of mounting an enablement or written description challenge may explain the general reluctance of accused infringers to make such challenges. John R. Allison & Lisa L. Ouellette, *How Courts Adjudicate Patent Definiteness and Disclosure*, 65 DUKE L.J. 609, 645 (2016) (“This may . . . reflect a reluctance to bring weaker enablement and written-description challenges, perhaps due to greater costs in raising these defenses.”).

37. For more on how patentees can use (and abuse) the PTO’s system of amendments, see Tun-Jen Chiang, *Fixing Patent Boundaries*, 108 MICH. L. REV. 523, 531–39 (2010).

38. See, e.g., *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1158 (Fed. Cir. 1998) (stating that the parent application “must reasonably convey to one of skill in the art that the inventor possessed the later-claimed subject matter at the time the parent application was filed” in order to meet the written description requirement); Holbrook, *supra* note 6, at 127–28.

39. *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336 (Fed. Cir. 2010) (en banc). The Federal Circuit has a long history of engaging with other branches of government and being spurred to action by threatened legislative action; *Ariad* was likely such a case. See J. Jonas Anderson, *Patent Dialogue*, 92 N.C. L. REV. 1049, 1050–55 (2014) (theorizing that Congress, the Supreme Court, and the Federal Circuit have a form of dialogue that is unique); J. Jonas Anderson, *Congress as a Catalyst of Patent Reform at the Federal Circuit*, 63 AM. U. L. REV. 961, 962–68 (cataloging the Federal Circuit’s reactions to proposed legislative patent reform); see also

patentability for certain technologies. Patents for technologies in which the function of the invention is sometimes apparent before the details of how the invention works (like biotechnology) are more susceptible to written description challenges. It is for this reason that many commentators argue that only certain technologies, like biotechnology, are impacted by the written description requirement.⁴⁰

The last requirement, best mode, requires the patentee to subjectively disclose what he or she believes is the best method of practicing the invention, if there is one.⁴¹ Its objective is to force the inventor to disclose the best method of practicing the invention known to the inventor, rather than keeping that method a secret. In this way, the best mode requirement seeks to avoid patentees disclosing inferior methods of practicing an invention while keeping the superior methods secret.⁴² However, with the America Invents Act of 2011, best mode is no longer a means of invalidating a patent once it has issued.⁴³ This change in the law effectively took the bite out of best mode as a patentability standard.⁴⁴

Thus, the three requirements of § 112—enablement, written description, and best mode—are the doctrinal elements behind disclosure.⁴⁵ Judicial opinions often cite to the three-part disclosure requirements of § 112 as the quid pro quo of patent law: in exchange for a patent an inventor discloses how to make and use his invention and the best method for carrying it out.⁴⁶ Almost all scholarly discussion on patent disclosure focuses on these three principles.⁴⁷

J. Jonas Anderson, *Judicial Lobbying*, 91 WASH. L. REV. 401, 432–35 (2016) (describing the federal circuit's lobbying efforts).

40. Janice Mueller, *The Evolving Application of the Written Description Requirement to Biotechnological Inventions*, 13 BERKELEY TECH. L.J. 615, 636–46 (1998). *But see* Michael Risch, *A Brief Defense of the Written Description Requirement*, 119 YALE L.J. ONLINE 127, 144 (2010) (“This does not mean that written description need be ‘super-enablement.’”).

41. *Bayer AG v. Schein Pharm., Inc.*, 301 F.3d 1306, 1314 (Fed. Cir. 2002).

42. Holbrook, *supra* note 6, at 130.

43. 35 U.S.C. § 282(b)(3)(A) (2012) (“[F]ailure to disclose the best mode shall not be a basis on which any claim of a patent may be cancelled or held invalid or otherwise unenforceable.”).

44. *See, e.g.*, Brian J. Love & Christopher B. Seaman, *Best Mode Trade Secrets*, 15 YALE J.L. & TECH. 1, 8–11 (2012) (describing the debates about the best mode requirement in Congress).

45. Rantanen, *supra* note 28, at 372.

46. *See, e.g.*, *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150–51 (1989).

47. *See, e.g.*, Fromer, *supra* note 5, at 546–47; Holbrook, *supra* note 6; Sean B. Seymore, *The Teaching Function of Patents*, 85 NOTRE DAME L. REV. 621, 628–29 (2010) [hereinafter Seymore, *The Teaching Function of Patents*]; Sean B. Seymore, *The Null Patent*, 53 WM & MARY L. REV. 2041, 2089–92 (2012). The requirement that patent claims be definite also monitors how much a patent discloses about the invention. 35 U.S.C. § 112(2) (2012).

II. DISCLOSURE'S ROLE IN PATENT LAW'S DOMINANT EXPLANATORY THEORIES

Academic theories about patent disclosure center on § 112.⁴⁸ Most commentators feel that § 112 fails to achieve the goals of disclosure, such as disseminating scientific information, teaching other technologists how to perform the invention, and advancing scientific knowledge.⁴⁹ Others believe that § 112 is useful, resulting in a patent system that conveys useful information to other innovators.⁵⁰ Regardless of one's position on patent disclosure's effectiveness, the academic debate has been centered on how much technical information about the patented invention gets delivered to the public.⁵¹

Yet a more fundamental question about patent disclosure exists: Why do we have it in the first place? Academics and courts differ on why we have patent disclosure.⁵² Some think it is to further scientific and technological knowledge.⁵³ Some feel that it is to place boundaries on the invention.⁵⁴ Some feel that it is to establish prior

Definiteness, however, is typically not considered part of patent "disclosure," and for that reason I will focus more on 35 U.S.C. § 112(a).

48. See, e.g., Kitch, *supra* note 17, at 265–90.

49. See Fromer, *supra* note 5, at 563–94 (describing the "systematic inadequacies" of patent disclosure); Holbrook, *supra* note 6, at 146 ("[T]he courts have grossly overstated the true extent of [the teaching] function."); Ben Roin, *The Disclosure Function of the Patent System (Or Lack Thereof)*, 118 HARV. L. REV. 2007, 2026–27 (2005) ("If the Supreme Court is correct that 'the ultimate goal' of the patent system is to facilitate the disclosure of information that would otherwise be kept secret, then our patent system appears to be in trouble."); Seymore, *The Teaching Function of Patents*, *supra* note 47, at 641 (suggesting changes to bring patent doctrine more in line with the goals of patent law).

50. See Ouellette, *supra* note 9, at 585 (finding that "patents can be useful as sources of technical information" in the nanotechnology industry).

51. See Fromer, *supra* note 5, at 550 (explaining that disclosure can be useful to technologists by teaching or inspiring them); Rantanen, *supra* note 6, at 44–45 (arguing that § 112 gives inventors the freedom to use their invention in a number of ways).

52. Compare this basic dispute about the role of disclosure with academics' disputes about the fundamental role of patent-eligible subject matter doctrine. See J. Jonas Anderson, *Applying Patent-Eligible Subject Matter Restrictions*, 17 VAND. J. ENT. & TECH. L. 267, 279–86 (2015) (listing academic theories about patentable subject matter).

53. See Dan L. Burk, *The Role of Patent Law in Knowledge Codification*, 23 BERKELEY TECH. L.J. 1009, 1012 (2008) (arguing that patents help to codify scientific knowledge); Mark D. Janis, *On Courts Herding Cats: Contending with the 'Written Description' Requirement (and Other Unruly Patent Disclosure Doctrines)*, 2 WASH. U. J.L. & POL'Y 55 (2000) ("Patent systems aspire to stimulate technological progress by eliciting disclosure.").

54. See Oskar Liivak, *Rescuing the Invention from the Cult of the Claim*, 42 SETON HALL L. REV. 1, 2 (2012) (using a teaching example that demonstrates the confluence of the disclosure requirements with patent claiming).

art.⁵⁵ This Part will briefly address how disclosure impacts the three main patent theories: the incentive to invent theory, the incentive to disclose theory, and the prospect or commercialization theory. By evaluating disclosure's role in the theories used to explain the existence of the patent system, one can better understand the role of nontechnical disclosure.

A. *Incentive to Invent*

A majority of patent scholars believe that the patent system's ability to incentivize invention is the primary benefit that the public derives from the patent system.⁵⁶ The incentive to invent theory rests on the idea that inventors will develop more inventions with the promise of a patent than they would absent such protection.⁵⁷ Although scholars differ greatly on whether they think patents are necessary to induce invention,⁵⁸ and the cost of inducing such inventions,⁵⁹ there is general agreement that patents do provide an incentive to inventors, and thus encourage the invention of new technologies.⁶⁰

So what is disclosure's role in the incentive to invent theory? Under the incentive to invent rationale, disclosure is more of a positive side effect than a goal.⁶¹ If the patent system induces someone

55. See Douglas Lichtman et al., *Strategic Disclosure in the Patent System*, 53 VAND. L. REV. 2175, 2175–76 (2000) (arguing for disclosure as a strategy for establishing the prior art).

56. See, e.g., J. Jonas Anderson, *Hiding Behind Reciprocity: The Temporary Presence Exception and Patent Infringement Avoidance*, 15 MICH. TELECOMM. & TECH. L. REV. 1, 5 (2008) (“The patent system, particularly the exclusive right to practice an invention, is designed to encourage inventors to create, patent, and commercialize new inventions.”); Roberto Mazzoleni & Richard R. Nelson, *Economic Theories About the Benefits and Costs of Patents*, 32 J. OF ECON. ISSUES, 1031, 1033–35 (1998) (discussing the four broad theories about the purpose of patents and calling the invention theory “unquestionably . . . the most familiar one”); Sichelman, *supra* note 15, at 344 (“[P]atent law is primarily designed to induce invention.”).

57. Sichelman, *supra* note 15, at 344.

58. Cf. MICHELE BOLDRIN & DAVID K. LEVINE, *AGAINST INTELLECTUAL PROPERTY passim* (2008) (finding that patents are “an unnecessary evil” in incentivizing invention); Letter from Fifty-One Law Professors to Senators Grassley and Leahy and Congressmen Goodlatte and Conyers (Mar. 10, 2015), <http://cpip.gmu.edu/wp-content/uploads/2015/03/Economists-Law-Profss-Letter-re-Patent-Reform.pdf> [<https://perma.cc/6W3W-B5M9>] (stating that Congress should tread carefully when reforming patent laws as the U.S patent system is “the engine of innovation” in the country).

59. See generally J. Jonas Anderson, *Secret Inventions*, 26 BERKELEY TECH. L.J. 917, 917–78 (2011).

60. *Id.*

61. See Alan Devlin, *The Misunderstood Function of Disclosure in Patent Law*, 23 HARV. J.L. & TECH. 401, 401–46 (2010).

to invent, then the patent has largely achieved its purpose.⁶² For incentive to invent theorists, disclosure is peripheral to the goals of the patent system and is not the primary function. Only when disclosure leads to further innovation (and it does on occasion, per the incentive theory) do we care about disclosure.⁶³

Katherine Strandburg has recognized the tension between the incentive to invent theory of patent law and the doctrine of disclosure.⁶⁴ She has noted that disclosure only plays a role in the incentive to invent theory when two conditions are met: first, the invention must not be self-disclosing—that is, it cannot be reverse engineered—and second, there are alternative incentives to invent besides the patent system (i.e., trade secrecy).⁶⁵ It is these inventions (non-self-disclosing inventions that can be kept secret) in which disclosure requires justification from incentive to invent theorists, for it is these inventions which would have been incentivized without a patent system.

The first condition (non-self-disclosing invention) is a necessary condition for an invention to implicate disclosure's value to incentive to invent theorists because with self-disclosing inventions, the public enjoys the knowledge of how to make and use the invention even absent the formal patent requirements. Simply placing self-disclosing inventions in the marketplace makes apparent how to create them. Therefore, the disclosure requirements are irrelevant when the invention itself reveals its operation—we would have the information with or without the patent. No additional disclosure requirements are needed for self-disclosing inventions.

The second condition (that the invention could have been incentivized absent the patent system) is a necessary condition to implicate disclosure's value to incentive to invent theorists because such inventions need some alternative justification for why society grants a patent on them: If the invention would have come about anyway, why does society need to give it twenty years of exclusivity? The answer to that question by the courts has typically been

62. See Holbrook, *supra* note 6, at 132–34 (“The disclosure requirements, and particularly enablement, therefore run counter to the incentive theory of patent law.”).

63. See Fromer, *supra* note 5, at 550 (“The disclosed information can be useful for other technologists . . .”).

64. Katherine J. Strandburg, *What Does the Public Get? Experimental Use and the Patent Bargain*, 2004 WIS. L. REV. 81, 110–11; see also Holbrook, *supra* note 6, at 133.

65. Holbrook, *supra* note 6, at 133–34.

“disclosure.”⁶⁶ In these cases (non-self-disclosing invention in which trade secrecy provides an alternate way to profit from the invention), some incentive to invent theorists have been somewhat skeptical of patent disclosure’s value.⁶⁷

What is striking about all of this is how limited the situations are in which incentive to disclose theory has anything at all to say about disclosure. Given the limited situations in which disclosure impacts the incentive to invent theory, it should come as no surprise that disclosure has been downplayed by incentive to invent theorists.⁶⁸ It is largely from incentive to invent theorists that we hear many of the criticisms of the current patent system’s lack of disclosure. They criticize the disclosure function of the patent system as being too weak to be useful as a means of disseminating information.⁶⁹ Further, they criticize the overplayed role that courts assign to disclosure in light of the evidence that scientists rarely look at patents.⁷⁰ This, they say, is evidence that the patent system should really be about trying to encourage people to invent rather than mandating disclosure. If anything, patent disclosure dampens the incentives to innovate.⁷¹ The academic literature has treated patent disclosure as something that is a cost to patent owners. Disclosure can, on the margins, lead to follow-on innovations, but many scholars doubt that disclosure generally has this effect.⁷²

Generally, the incentive to invent theory tends to downplay the impact of patent law’s teaching function. To incentive to invent theorists, patents don’t tend to teach very well, thus the role of patent disclosure is minimal. But this view mistakenly equates the teaching function with disclosure. Disclosure can be much larger than the teaching function, as I will demonstrate in Part III. For now, it is

66. I have disagreed with Professor Strandburg on what we should do with nondisclosing inventions of this sort. See Anderson, *supra* note 59, at 955–56. The crux of our debate centers around the teaching value of disclosure (Professor Strandburg thinks we get a lot from it; I’m generally doubtful). See also Holbrook, *supra* note 6, at 134 n.56 (“Professor Strandburg’s response would be that social welfare may yet be enhanced if the patent system encouraged disclosure of the invention so as to facilitate greater innovation . . .”).

67. See Anderson, *supra* note 59, at 940–45 (summarizing academic critiques of the value of patent disclosure).

68. *Id.*

69. See Holbrook, *supra* note 6, at 139.

70. See, e.g., *id.* (“[T]he courts have grossly overstated the teaching function of patent disclosures.”).

71. See Devlin, *supra* note 61, at 419 (claiming that the disclosure doctrines “create a disincentive” to patent protection).

72. Holbrook, *supra* note 6, at 134 n.56 (“The value of such disclosure [to teach other innovators], however, appears to be minimal.”).

sufficient merely to recognize the distinction between the teaching function and disclosure more broadly. An individual patent's disclosure might be limited to the patent's ability to teach, but it need not be so limited in every case. Disclosure can encompass a range of functions (teaching, informing, marketing, signaling, etc.), all of which may or may not be useful to a given patentee. The teaching function is the statutorily mandated element of the disclosure function, but patents can (and do) disclose nontechnical information as well.

B. Incentive to Disclose

The incentive to disclose theory—also known as the patent quid pro quo—assumes a well-functioning patent disclosure system.⁷³ According to disclosure theorists (not to mention judges who have heavily relied on the disclosure rationale), the patent system is designed to bring inventions out into public view.⁷⁴ Without the patent system, inventors would have to resort to alternate means of monetizing their inventions, and many would rely on trade secrecy, depriving the public of the knowledge of how inventions are produced and function.⁷⁵ In exchange for a patent, the inventor must disclose how the invention is practiced, thereby forming the quid pro quo of the patent system—the inventor discloses his invention in exchange for a twenty-year exclusivity period in which no one else can practice the invention.⁷⁶

Disclosure theorists are among the strongest defenders of the patent disclosure system. They have confronted evidence of disinterest in patents by scientists with evidence that in particular industries the opposite is true. Biotech and nanotechnology are among the industries where the disclosure function of the patent system appears to operate well.⁷⁷ Therefore, according to disclosure theorists, the patent system can be justified by how much information it brings to the public that otherwise would be private. In this way disclosure theorists differ from incentive to invent scholars, who view patent law as primarily concerned with encouraging innovation. Disclosure theorists put the

73. Kitch, *supra* note 17, at 287 (“The reward theory has tended to emphasize the disclosure role of the patent.”).

74. *Integra Lifesciences I, Ltd. v. Merck KGaA*, 331 F.3d 860, 873 (Fed. Cir. 2003) (Newman, J., dissenting) (“The purpose of a patent system . . . serves to add to the body of published scientific/technologic knowledge.”).

75. See Anderson, *supra* note 59, at 919.

76. See Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. CHI. L. REV 1017, 1022 (1989).

77. See Ouellette, *supra* note 9, at 585.

primary emphasis on disclosing new inventions and the further innovation that comes from that disclosure.

But disclosure theorists run into trouble in attempting to explain the patent system as a large system of information transfer and nothing more. That is why there are very few “pure” disclosure theorists. A pure disclosure theorist must account for the fact that patent disclosure is essentially ignored by major industries, like the computer and electronics industries.⁷⁸ If disclosure is society’s payment for granting a patent, it appears that society is getting the raw end of the bargain, at least in those industries that ignore patents. The lack of patent disclosure is blamed on various things, including the thick verbiage of the patent document itself,⁷⁹ the unusable amount of information disclosed in the patent system,⁸⁰ and an unclear boundary scope for patents in general.⁸¹ Others argue that the patent system succeeds at the disclosure of new inventions, pointing out that scientists do read patents (at least in certain industries) and that patents give parties the freedom to negotiate freely knowing that the invention is protected, leading to greater disclosure.

Disclosure theorists argue that patents teach future innovators. This is the foundation of the disclosure theory. Yet few disclosure theorists recognize the fact that patents may perform disclosure apart from their role in teaching how the patent operates. In this, disclosure theorists and incentive to invent theorists are similar. Both groups tend to emphasize disclosure’s teaching function, while virtually ignoring the fact that patents have a nontechnical disclosure function.

78. See Lemley, *supra* note 7, at 22 n.18. Both the computer and electronics industry have a reputation for avoiding patents. This is for many reasons: they have (or had in the past) reason to fear being hit with treble damages if they knew that a patent existed that they were later found to infringe; there are so many patents in the industry that it is impossible to keep up; the patents in these industries do not tend to coalesce around key terms—it is difficult to know what to look for; patent claims on these areas are vague, written in a style inaccessible to technologists, or written in functional language that makes deciphering what these inventions cover very difficult, if not impossible, to discover before trial.

79. See Fromer, *supra* note 5, at 543.

80. Jeffrey M. Kuhn, *Information Overload at the U.S. Patent and Trademark Office: Reframing the Duty of Disclosure in Patent Law as a Search and Filter Problem*, 13 YALE J.L. & TECH. 90, 95 (2011).

81. See JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 9 (2008).

C. Prospect Theory/Commercialization Theory

A third theory for why we have a patent system posits that the main benefit of a patent system is the centralization that occurs when granting property-like rights in information.⁸² Unlike the other two main theories of the patent system, the prospect theory supposes that a patent will attract those interested in collaborating on, investing in, or commercializing the invention. These partners will know that without the patent holder's consent they cannot make or commercialize the product.⁸³ First proposed by Edward Kitch, the prospect theory likens the patent system to the early American system of granting mining rights in western land.⁸⁴ The most productive users (be they researchers, marketers, producers, etc.) have an incentive to obtain or acquire a patent.⁸⁵ Thus, the patent system is a means of centralizing rights in the invention and then coordinating development.⁸⁶

Prospect theory has an unstable position with patent disclosure. Many advocates believe that disclosure plays a minor role in prospect theory.⁸⁷ Kitch himself had a dim view of disclosure's role in the patent system. Kitch felt that patent disclosure was not concerned with teaching the technology to others, but rather was concerned about defining legal rights in technology.⁸⁸ Patent disclosure, to Kitch, served the public only in defining the invention and announcing to the world what was and was not within the invention's ambit. Similar to modern claim construction, Kitch felt that disclosure was best viewed as a means of precisely stating what property was owned by the patentee.⁸⁹ Inventors, according to Kitch,

82. See generally John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 441 (2004); Kitch *supra* note 17.

83. See Duffy, *supra* note 82, at 441 (stating that the prospect theory is the search for coordination of research).

84. See Kitch, *supra* note 17, at 271–75.

85. See *id.*

86. *Id.*

87. *Id.* at 287–88.

88. *Id.* at 287 (“The purpose of the description in the patent is not to disclose the commercially relevant technology, but to provide a context in which legal limits of the claim acquire meaning.”).

89. For more on claim construction as a means of defining claim scope, see J. Jonas Anderson & Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim Construction*, 108 NW. U. L. REV. 1 (2014); J. Jonas Anderson & Peter S. Menell, *Empirical Studies of Claim Construction*, in 2 RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW: ANALYTICAL METHODS (Peter S. Menell & David

would be sufficiently incentivized to spread information about their inventions to the people who were the most interested in collaborating. This, Kitch thought, was best done “directly,” without reliance on the patent document itself.⁹⁰ Thus, according to Kitch, there is little to be gained from patent disclosure other than defining the invention.

John Duffy, on the other hand, has proposed that one of the most beneficial aspects of the prospect theory is disclosure, or more precisely, the early disclosure of inventions.⁹¹ In Duffy’s view, the prospect theory views the patent system as the carrot that entices inventors to patent early, and thus disclose their inventions as soon as possible.⁹² This in turn facilitates traditional prospecting (collaboration), but it also brings inventions to light at the earliest possible time, thereby furthering knowledge and innovation.⁹³ Yet the key to Duffy’s insight was that the early grant of patent rights often led to patent races with a winner-take-all patent; it was just this sort of technological competition that could constrain patent monopolies, because early grant also meant early expiration of the rights obtained in the patent.⁹⁴ To Duffy, disclosure has a big role to play in managing such patent races.⁹⁵ Thus, to Duffy, the prospect theory relies on disclosure for its explanatory power.⁹⁶

Others have critiqued prospect theory for not explicitly explaining how commercialization proceeds. Ted Sichelman has said, “[T]he prospect theory of patents, which analogizes the innovation process to mining a rich vein of ore, never quite explains how the vein is initially discovered.”⁹⁷ For him, prospect theory has done a poor job of describing how patentees and producers, investors, and innovators become aware of one another. Similarly, Robert Merges and Richard

L. Schwartz eds., forthcoming 2017) (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2661005) [<https://perma.cc/TNX4-SKEV>].

90. Kitch, *supra* note 17, at 287.

91. Duffy, *supra* note 82.

92. *Id.* at 493–96 (analogizing patent races to Demsetzian auctions).

93. *Id.*

94. *Id.* at 510.

95. *See id.* at 497–99 (“Moreover, even if a firm *could* investigate technological prospects in secrecy, disclosure may be in the firm’s best interest in the early stages of research . . .”).

96. *Id.*

97. Sichelman, *supra* note 15, at 349.

Nelson have questioned how prospectors inform others of their inventions.⁹⁸

Prospect theorists generally take a dim view of information disclosed in the patent, with notable exceptions like John Duffy. This aspect of prospect theory—the downplaying of disclosure—has been cited by scholars as a flaw with the theory.⁹⁹ Prospect theory views patent disclosure as only adding value in its ability to delineate legal rights—specifically, to define the scope of the patent.¹⁰⁰ Delineating rights is undoubtedly of great value; trade secrecy, for example, suffers from the failure to properly delineate rights, lowering the value of trade secrets generally.¹⁰¹ But if rights delineation is the end-all-be-all of patent disclosure, disclosure is less about teaching follow-on innovators and more about creating legal entitlements. This is fine, although that is not the typical way that courts talk about patent disclosure.¹⁰² Thus, the prospect theory (like the incentive to invent theory) discounts much of the teaching function of the patent system.¹⁰³ Kitch's prospect theory relies on the inventors' own efforts (and not the patent document itself) to find partners for commercialization.¹⁰⁴

98. Robert Merges & Richard Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 873 (1990) (“But with the technological ‘prospects’ . . . no one knows for sure what possible inventions are in the technological pool.”).

99. See Gregory N. Mandel, *Promoting Environmental Innovation with Intellectual Innovation: A New Basis for Patent Rewards*, 24 TEMP. J. SCI. TECH. & ENVTL. L. 51, 63 (2005).

100. Kitch, *supra* note 17, at 287–88.

101. See James Pooley, *The Top Ten Issues in Trade Secret Law*, 70 TEMP. L. REV. 1181, 1182 (1997) (stating that defining a trade secret is one of the main problems with trade secret law).

102. See, e.g., *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481:

When a patent is granted and the information contained in it is circulated to the general public and those especially skilled in the trade, such additions to the general store of knowledge are of such importance to the public weal that the Federal Government is willing to pay the high price of 17 years of exclusive use for its disclosure, which disclosure, it is assumed, will stimulate ideas and the eventual development of further significant advances in the art.

103. See, e.g., Kitch, *supra* note 17, at 287–88 (stating that the purpose of patent disclosure is not “to disclose the commercially relevant technology, but to provide” legal limits to the scope of the rights).

104. See *id.*

III. NONTECHNICAL DISCLOSURE

A. *Towards a Broader Theory of Patent Disclosure*

Despite what the previous two Parts may have led you to believe, patent disclosure is not monolithic. There are various ways in which the patent system can disclose information.¹⁰⁵ In addition to telling the reader how to make and use the invention, patents can contain other useful information that does not seek to “teach” the invention. Academics have devoted a lot of attention to the teaching function of disclosure.¹⁰⁶ They have written about whether disclosure achieves its teaching goals,¹⁰⁷ whether disclosure is the ultimate goal of the patent system,¹⁰⁸ whether § 112 is sufficient to achieve the teaching ambitions of the patent system,¹⁰⁹ how disclosure factors into litigated cases,¹¹⁰ and a host of other questions.

Much less academic attention has been paid to the nontechnical aspects of patent disclosure. Nontechnical disclosure is the ability of a patent to disclose information that is not related to the traditional disclosure goal of teaching. Nontechnical disclosure informs the reader of something nontechnical about the invention. Often (though not always), nontechnical disclosure is directed at the non-artisan: someone unfamiliar with the technology behind the patent. In certain instances, nontechnical disclosure can lead to opportunities for collaboration.

Disclosure has always been focused around the PHOSITA: the person having ordinary skill in the art.¹¹¹ This makes sense, as technical knowledge of a patent’s operation is valuable only to someone with skill and knowledge in the art.¹¹² Therefore, patent

105. See Rantanen, *supra* note 6, at 44–45 (demonstrating that the patent system permits inventors to teach through means other than their patent, including scientific publications and product marketing).

106. See *supra* notes 5–6; see also Seymore, *The Teaching Function of Patents*, *supra* note 47, at 641–43.

107. See, e.g., Fromer, *supra* note 5, at 544 (making “the case that the patent document is effectively irrelevant in practice for informing scientific and technological research”).

108. See Rebecca S. Eisenberg, *Analyze This: A Law and Economics Agenda for the Patent System*, 53 VAND. L. REV. 2081, 2093 (2000).

109. Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29, 40–41 (1991).

110. See Allison & Ouellette, *supra* note 36.

111. See generally Rebecca S. Eisenberg, *Obvious to Whom? Evaluating Inventions from the Perspective of PHOSITA*, 19 BERKELEY TECH. L.J. 885 (2004); Arti K. Rai, *Allocating Power over Fact-Finding in the Patent System*, 19 BERKELEY TECH. L.J. 907, 907 (2004).

112. Eisenberg, *supra* note 111, at 886; Rai, *supra* note 111.

doctrine requires that an inventor describe in sufficient detail that one skilled in the art can practice the invention without undue experimentation.¹¹³ However, there are numerous nonskilled audiences that a patent can reach. The dissemination of important information to a consumer may not allow the consumer to make the invention himself, but that is beside the point. The consumer may need to know other information before deciding to purchase a patented device: How much does the patented product cost? Does it work? Is it better than what came before? Is it technologically innovative? Very little of the information needed to make a purchasing decision will be contained in a patent. But the patent (even the very existence of the patent) may encourage a consumer to purchase, even though that information is not technical in nature. Ultimately, for someone attempting to profit from an invention, the purchasing decision is of supreme importance.

Nontechnical disclosure conveys information about the patent itself, not the invention's technical specifications. Indeed, nontechnical disclosure is more about the existence of a patent than what the patented invention covers. For example, a venture capitalist may not initially know all of the science behind a portfolio of biotech patents that his company is considering investing in, but the existence of a patent may enable him to more accurately estimate the company's value.¹¹⁴ Indeed, numerous economic studies of patents held by start-up companies reach similar conclusions: patents can signal invention quality and value to investors, regardless of the technical details.¹¹⁵

There are other scholars who have written about ideas similar to nontechnical disclosure. Jason Rantanen has written about alternative types of disclosure.¹¹⁶ He focuses on disclosure of information that would not have occurred absent a patent.¹¹⁷ He gives several examples, such as scientific publications, marketing materials, and self-disclosing inventions, in which this "peripheral disclosure"

113. 35 U.S.C. § 112(a) (2012).

114. Of course, no venture capitalist worth her salt would just count the number of patents in deciding whether to invest. Investment decisions are usually made after thoughtful evaluation of the company's assets. However, patents are public documents that can allow investors a quick and dirty substitute for innovation activity.

115. Annamaria Conti et al., *Patents as Signals for Startup Financing*, 61 J. INDUS. ECON. 592 (2013) (conducting an empirical study on Israeli companies between 1994–2011); Annamaria Conti et al., *Show Me the Right Stuff: Signals for High-Tech Startups*, 22 J. ECON. & MGMT. STRATEGY 341 (2013).

116. See Rantanen, *supra* note 6.

117. *Id.* at 16.

occurs.¹¹⁸ The theory of peripheral disclosure is attractive and one with which I largely agree. Rantanen is dealing with a form of disclosure that differs from nontechnical disclosure, however. Peripheral disclosure is “information that an inventor could not share with the public without losing the ability to monetize the invention.”¹¹⁹ This is *technical* disclosure that emanates from somewhere other than the patent.¹²⁰ What this Article is concerned with, on the other hand, is *nontechnical* disclosure that emanates from the patent itself.

Similarly, Clarisa Long has theorized about patents as signals. She views disclosure as a proxy for harder-to-quantify qualities such as the innovative nature of a firm, rather than as a teacher of scientists and engineers.¹²¹ Her “patents as signals” theory has many similarities with nontechnical disclosure: both are more concerned with the signaling function of a patent and less concerned than most academic treatments about the technical details in the patent; both theories hold that there is a substantial benefit to such information and that patenting is the only way to get such information. Yet her theory is focused on the non-teaching value owners place in patents, not disclosure per se.¹²² Long is more concerned with how patents are valued and is less concerned with theories of how and why disclosure occurs. Signaling theory is in agreement with technical nondisclosure, but they have a different focus.¹²³ Signaling theory is focused on patent valuation while nontechnical disclosure is concerned with disclosure. But Long’s signaling theory is a valuable insight that is discussed more fully in Part IV.

B. Examples of Nontechnical Disclosure

Nontechnical disclosure has less relevance than traditional disclosure for scientists or others looking to understand how an invention operates. However, information about the patent (aside from the technical specifications) can be valuable to certain kinds of

118. *Id.* at 21–30.

119. *Id.* at 16.

120. *Cf.* Fromer, *supra* note 5, at 544 (“In theory, disclosure can occur in many different ways, but in reality, . . . the patent document is the primary situs of technical information about a patented invention.”).

121. Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625 (2002).

122. *Id.* at 627 (“I challenge the traditional assumption that exclusivity is the alpha and omega of the private value of patent rights.”).

123. *See* Asay, *supra* note 13, at 265.

audiences.¹²⁴ Those audiences, in turn, might find certain nontechnical information useful. This Section highlights three of those types of nontechnical information—marketing information, the nature of the firm/inventor, and the owner of the patent—in an attempt to illustrate how nontechnical disclosure operates. This is hardly a comprehensive list; rather, these examples demonstrate how the patent system discloses information that is not necessarily technical information. It will also show that the audience for such information is much broader than the typical PHOSITA audience, although the reliability of such disclosure is questionable.

1. Marketing Information

Disclosure is designed for people that are skilled in the technology of the patent.¹²⁵ For example, a patent on the touch screen functions of a phone would likely be written with an eye towards informing an electrical engineer or computer scientist about how the touch screen works. Conversely, the typical consumer of a phone covered by that patent is unlikely to understand how the phone operates, the electronic connections that power the phone, or the software code that underlies the phone's functionality. Traditional disclosure doctrine is unconcerned with the consumer. As long as the PHOSITA can make or use the invention without undue experimentation, the patent is enabled.¹²⁶

Despite being ignored by disclosure doctrine, consumers can glean information from patents. The most basic type of information that can be conveyed by a patent is that a patent has, in fact, been issued. This can be useful for consumers deciding whether to purchase a particular product. Consumers of patented products are rarely PHOSITAs. But companies care greatly about these non-PHOSITAs. Companies use their patents as a type of advertising, extolling the virtues of a product or company.¹²⁷ This form of disclosure is targeted to a nontechnical audience and conveys primarily nontechnical

124. For more about the various audiences to which patents may be directed, see Timothy R. Holbrook & Mark D. Janis, *Patent Law's Audience*, 97 MINN. L. REV. 72 (2012).

125. See Jonathan J. Darrow, *The Neglected Dimension of Patent Law's PHOSITA Standard*, 23 HARV. J.L. & TECH. 227, 236 (2009) (noting that § 112 is directed at persons skilled in the art of a particular patent).

126. *In re Wands*, 858 F.2d 731 (Fed. Cir. 1988).

127. Ann Bartow, *Separating Marketing Innovation from Actual Invention: A Proposal for a New, Improved, Lighter, and Better-Tasting Form of Patent Protection*, 4 J. SMALL & EMERGING BUS. L. 1, 2 (2000) (noting that patents can be used for advertising, enhancing the image of the company, and adding fiber to a patent portfolio).

information about the patent. This nontechnical disclosure serves as a proxy for other, more difficult to quantify, aspects of a product.¹²⁸ Advertisers may appeal to the innovative nature of a product.¹²⁹ Or alternatively, they may appeal to the fine craftsmanship or durability of a product.¹³⁰ Or they might emphasize the “sexiness” of a product or brand and the prestige of owning such a product.¹³¹

Obtaining (and advertising) one’s patent informs the world that what one has done is innovative/well-made/sexy. Using the fact that a product is patented in advertisements draws on the public’s esteem for patenting and attempts to leverage that esteem towards the product being advertised. This is “disclosure” without disclosing any information about the technology at issue.

Consider this 2013 Mercedes Benz commercial:¹³²

Man’s voice: “To hold a patent that would change the modern world would define you as an innovator. To hold more than one patent of this caliber would define you as a true leader. To hold more than eighty thousand? Well, that would make you the creators of the 2013 Mercedes Benz E Class. Quite possibly the most advanced luxury sedan ever.”

The commercial is touting the car’s craftsmanship and innovative qualities by appealing to the public’s admiration of the task of acquiring patents. Nothing in this advertisement hints at what the patents cover (and with good reason; at least some of the eighty thousand patents are undoubtedly of questionable validity), but that’s not the point. The patent system discloses something about the brand to nontechnical audiences, whether it’s the innovation or technological ambition of the E-Class, or the distinction of having a car packed with so many (alleged) innovations.¹³³

Another way this nontechnical disclosure occurs is in the marking of patented products. All patented products should be marked in order to alert the public that the product is covered by a patent.¹³⁴ Products covered by patents that have not yet issued are often marked with a “patent pending” label. However, there is no legal

128. *See id.* at 2–3.

129. *Id.*

130. *Id.*

131. *Id.*

132. CommLiveFun, *2013 Mercedes Benz E 350 TV Commercial, Patents*, YOUTUBE (Dec. 11 2013), <https://www.youtube.com/watch?v=OYxmQShZ2Hw> [<https://perma.cc/2U4K-TNWS>].

133. *Id.*

134. 35 U.S.C. § 287 (2012). Failure to properly mark a product does not entirely preclude a finding of infringement of the patent, but it does foreclose damages during the period in which the patent was not marked. *See, e.g.,* Philips Elecs. N.A. Corp. v. Contec Corp., 312 F. Supp. 2d 639 (D. Del. 2004) (limiting damages to the period in which the patented product was marked).

justification for such a mark; no rights are acquired by including the label nor are rights forfeited through the absence of such a label.¹³⁵

Such products with patent pending labels could be the result of ignorance of the law; after all, thousands of YouTube videos expressly state that the video is used without knowledge of anyone owning the copyright, even though ignorance is not a defense to such copying.¹³⁶ But more than likely the patent pending label may be used in the same way as a patent in the Mercedes advertisement example. Simply knowing that someone has *applied* for a patent has the potential to reassure consumers that they are purchasing something innovative. The existence of a patent has usually been taken for granted by scholars. Few studies exist on the impact that advertising of a patent might have on consumers.¹³⁷ But this is a form of nontechnical disclosure: the patent discloses something unrelated to the technical function of the invention (in this case, the existence of the patent itself) to an interested audience (consumers).

Inevitably, this nontechnical disclosure may be used for less than benevolent uses. As the Mercedes Benz advertisement above demonstrates, nontechnical disclosure, because it is pitched at a nonexpert audience, may be used to try to deceive the public. If anyone is buying a Mercedes Benz E-Class for the eighty thousand innovations it contains, they will be sorely disappointed to learn that a large number of those patents are rather pedestrian innovations. Nontechnical disclosure's value stems from a much wider audience of consumers, as opposed to the much narrower class for traditional disclosure: PHOSITAs. But this also presents a challenge for disclosure theorists; the nontechnical audience has a much harder time verifying claims of quality.

135. The PTO website states that the term "Patent Pending" has "no legal effect, but only give[s] information that an application for patent has been filed in the USPTO." U.S. Patent & Trademark Office, *General Information Concerning Patents: Patent Marking and Patent Pending* (Oct. 2014), <http://www.uspto.gov/patents-getting-started/general-information-concerning-patents#heading-29> [<https://perma.cc/Q23K-MFRK>]. It is prohibited to place a "patent pending" label when no application has been filed. *See id.* ("False use of ['Patent Pending'] . . . is prohibited."); U.S. Patent & Trademark Office, *Provisional Application for Patent*, <http://www.uspto.gov/patents-getting-started/patent-basics/types-patent-applications/provisional-application-patent> [<https://perma.cc/78WE-JBUT>] (stating that filing an application "allows the term 'Patent Pending' " to be used).

136. Kurt Hunt, Note, *Copyright and YouTube: Pirate's Playground or Fair Use Forum?*, 14 MICH. TELECOMM. & TECH. L. REV. 197, 198 (2007) (estimating that as much as seventy percent of YouTube's content is a violation of copyright law).

137. For one of the few treatments, consider Bartow, *supra* note 127.

2. The Innovative Nature of a Company

Investors are the second group of nonexperts who may glean important, nontechnical information from a patent. When deciding whether to invest in a company, venture capitalists often rely on the company's patent portfolio to assess the innovative output of the company.¹³⁸ Aside from sending signals about the company's general culture of innovation, patents tell an investor that the company has a means of monetizing its innovations and preventing copying of those inventions. Thus, patents can be valuable to investors who look to them not for technical information about a company's inventions, but for nontechnical disclosure concerning how innovative a company may be.¹³⁹

One of the well-documented examples of patents being used to convey this nontechnical information is in venture capital. Venture capitalists make bids on companies that are tied to the creative output of their inventors. Studies have shown that the patents a company obtains may influence the price that venture capitalists offer for a company.¹⁴⁰ Venture capitalists make decisions on a company's worth based (in part) on the patents they acquire.¹⁴¹ Obviously, venture capitalists care deeply about what a patent discloses and (most importantly) protects.¹⁴² If they don't understand the technology themselves, they will usually have the patents outsourced to a third party who can advise them on the technology. But venture capitalists also rely on patents to tell them something about the firm that is separate from what technology the firm has developed or acquired.

Clarisa Long has explored this type of disclosure.¹⁴³ In her article, *Patent Signals*, she moved beyond the two-dimensional framework of patents as rights and rents.¹⁴⁴ She envisioned patents as a "means of credibly publicizing information"—information that was

138. David Hsu & Rosemary H. Ziedonis, *Patents as Quality Signals for Entrepreneurial Ventures*, DRUID SUMMER CONFERENCE 2007 (May 2007), https://www.researchgate.net/profile/Rosemarie_Ziedonis/publication/228767596_Patents_as_quality_signals_for_entrepreneurial_ventures/links/02e7e53519bca7ba8a000000.pdf [<https://perma.cc/9GYR-8JPY>] (finding that patents increase the likelihood of securing financing in the semiconductor industry).

139. *Id.*

140. *Id.*

141. *Id.*

142. Caroline Haeussler et. al, *To Be Financed or Not . . . —the Role of Patents for Venture Capital Financing* (Governance and the Efficiency of Economic Systems, Discussion Paper No. 253, 2009), <http://www.sfbtr15.de/uploads/media/253.pdf> [<https://perma.cc/6UQK-YQD7>] (finding that venture capitalists pay attention to patent quality).

143. Long, *supra* note 121.

144. *Id.* at 627.

difficult or impossible to obtain through other means.¹⁴⁵ In her view, intellectual property was more fully justified under this view than under an exclusionary rights-only framework.¹⁴⁶ Thus, some patents that had previously been considered worthless (or more accurately, not worth the cost of procuring) had positive value when considered in the context of patent signals.¹⁴⁷

This signaling function that patents perform is made possible by the nontechnical disclosure of the patent itself. Disclosure is mandated by the patent statute, and without that mandated disclosure it would be impossible (without actions by the patent owner) to identify what patents a company had produced. The information gleaned by the venture capitalist or other interested party need not be technical in nature; they may not be concerned (at least initially) with the teaching of the patent. Instead, venture capitalists may be concerned with other, nontechnical information that they can only find in the patent document.

3. The Patent Owner

When a patent issues, the world knows who owns the rights to the patented invention: it is listed on the patent document.¹⁴⁸ This is another way in which a patent may disclose nontechnical information that is designed to increase innovation. Prospect theory holds that the primary benefit of having a patent system is the centralization of control the patent gives the inventor in commercializing the technology.¹⁴⁹ If someone has an idea for improving or building upon a technology, they can rely on a patent to direct them to the rights holder.¹⁵⁰ At least in theory.

Initially, a patent must list its owner's name and address. Unfortunately the requirement to list the patent owner on a patent does not carry over to subsequent owners.¹⁵¹ So, while the PTO maintains an ownership registry for all patents, listing an assignment of a patent is entirely voluntary.¹⁵² There are advantages in using the

145. *Id.*

146. *Id.* at 627–28.

147. *Id.* at 628.

148. 35 U.S.C. § 261 (2012) (“[P]atents shall have the attributes of personal property.”).

149. *See* Kitch, *supra* note 17, at 285.

150. *Id.* at 283–84.

151. 35 U.S.C. § 261 (noting that patents may be assigned, but not requiring any recording of such).

152. *Id.*

registry (prima facie evidence of ownership),¹⁵³ and there have been calls for the PTO to strengthen the tracking of patent ownership data.¹⁵⁴ As of the writing of this Article, the ownership registry was the best public source for information about patent ownership. However, it is far from a perfect solution.

This is an area where nontechnical disclosure should be improved. Requiring owners to register any changes in ownership of a patent with the PTO would go a long way toward maximizing the disclosure function of patent law.¹⁵⁵ If we take disclosure obligations seriously, we should care that patent ownership is difficult to track down.¹⁵⁶

IV. IMPLICATIONS OF NONTECHNICAL DISCLOSURE FOR PATENT THEORY

The fact that patents disclose useful information is not a novel idea; in fact an entire theory of the patent system is premised on the disclosure of information to the public.¹⁵⁷ Without the disclosure of the technical information about how a patent operates, there would be no quid in the patent quid pro quo.¹⁵⁸ Although there are other theories of the patent system that could explain why patents are granted that do not involve disclosure,¹⁵⁹ in general those theories are not relied upon by courts.

But what about nontechnical disclosure? What is gained from recognizing that some information in the patent is not targeted to the PHOSITA and does not tell us anything about how the invention operates?

153. *Id.*:

An interest that constitutes an assignment, grant, or conveyance shall be void as against any subsequent purchaser or mortgagee for valuable consideration, without notice, unless it is recorded in the Patent and Trademark Office within three months from its date or prior to the date of such subsequent purchase or mortgage.

154. Mark A. Lemley & Nathan Myhrvold, *How to Make a Patent Market*, 36 HOFSTRA L. REV. 257, 258 (2008).

155. *Id.*

156. *Id.* at 259.

157. *See, e.g.*, *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 63 (1998) (“[T]he patent system represents a carefully crafted bargain that encourages both the creation and the public disclosure of new and useful advances in technology, in return for an exclusive monopoly for a limited period of time.”).

158. *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U.S. 124 (2001).

159. The incentive to invent theory holds disclosure as only leading to further innovation when the patent is for a non-self-disclosing invention and there is no other means of protection that could substitute for patenting. *See Strandburg, supra* note 64, at 105.

There are two main theoretical takeaways from an understanding of nontechnical disclosure. First, nontechnical disclosure more thoroughly elucidates the reasons people or companies may seek patent protection. Second, nontechnical disclosure may impact prospect theory, or more precisely, how prospect theory operates in practice. Nontechnical disclosure can alter our understanding of the means of commercializing and advertising a patent. The remainder of this Article explores these issues.

A. *The Desire to Patent*

Many scholars have written about why people choose to patent inventions that seem to be worth less than the cost to obtain them.¹⁶⁰ Nontechnical disclosure provides another explanation for this phenomenon. Given the choice to patent an invention or keep it as a trade secret, many inventors choose trade secrecy.¹⁶¹ Trade secrecy, in comparison to patenting, has advantages: potentially unlimited duration, reduced costs of acquisition, and a broader array of technologies than that are covered by the legal regime.¹⁶² But there are also other reasons to choose trade secrecy.¹⁶³ For example, many inventors find the patent disclosure requirement to be a real drawback when compared to trade secrecy.¹⁶⁴ Also, it can be difficult to detect infringement with certain technologies, so it may be in an investor's best interest to maintain the invention in secret rather than tell the whole world about it, as is required by patent laws.¹⁶⁵

Yet scholars have paid scant attention to the fact that disclosure of the nontechnical kind may be attractive to certain inventors.¹⁶⁶ That attraction is not captured by the traditional exclusive rights paradigm traditionally associated with academic theories of patent rights. An inventor could be attracted to the advertising ability that a patent gives him, to a patent's ability to secure investment, or the prestige that comes from being a patented

160. See, e.g., Long, *supra* note 121; Dan L. Burk, *On the Sociology of Patenting*, MINN. L. REV. (forthcoming), <http://ssrn.com/abstract=2740947> [<https://perma.cc/VA4D-2CQT>].

161. See Wesley M. Cohen, et al., *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)* (Nat'l Bureau of Econ. Research, Working Paper No. 7552, 2000).

162. See Anderson, *supra* note 59, at 949.

163. *Id.*

164. *Id.* at 926.

165. *Id.*

166. *But see* Long, *supra* note 121.

inventor.¹⁶⁷ An inventor may be persuaded to patent his invention although the exclusive rights gained through the patent have minimal value.¹⁶⁸

The curious thing about nontechnical disclosure is that most inventors are likely to desire this type of disclosure, whereas traditional disclosure is, generally speaking, seen as something the inventor is being forced to give up in exchange for the patent. The fruits of nontechnical disclosure (prestige, ease of commercialization coordination, marketing, etc.) are often attractive to inventors. Nontechnical disclosure only serves to increase the value of the patent, not detract from it as traditional disclosure may do.

People seek patent protection for various reasons. They may be seeking patent protection in order to advertise the innovative nature of their firm or the quality of their product. They might be seeking patent protection for the prestige that obtaining a patent gives them among their professional peers.¹⁶⁹ They might seek patent protection in order to communicate to potential collaborators about their technology. Nontechnical disclosure is not the only theory that explains this low-value patenting phenomenon, but it is an additional piece in the puzzle.

B. Prospect Theory Implications

The prospect theory holds that the patent system is best understood as a means of putting a patent in the hands of the person who is best able to exploit that technology.¹⁷⁰ Just as with real property theory, prospect theory puts the emphasis on identifying who controls a given property right (for example, land or technology), and then allowing the market to control who contributes to or builds on that technology.¹⁷¹

Nontechnical disclosure provides the prospect theory with another way of identifying the ownership of the rights and, perhaps more importantly, the ability to convey information about ownership broadly. Edmund Kitch, to whom the prospect theory is generally credited, seems to acknowledge this fact. He thought that disclosure of a patent that occurs in the patent document's specification (what I call

167. For more on the prestige value of patents, see Stephanie P. Bair, *The Psychology of Patent Protection*, 48 CONN. L. REV. 297 (2015).

168. Long, *supra* note 121.

169. Anderson, *supra* note 59.

170. See Kitch, *supra* note 17.

171. *Id.* at 266.

the technical disclosure) was an effort to set the legal bounds of the rights: “The purpose of the description in the patent is not to disclose the commercially relevant technology, but to provide a context in which the legal limits of the claim acquire meaning.”¹⁷² For true disclosure about the advantages and usefulness of an invention, the patentee would rely on other means, according to Kitch: “He will do this [disseminate information about the invention], not through the balky mechanisms of a formal patent application.”¹⁷³ Although Kitch seems to suggest that the inventor will personally disclose the information, nontechnical disclosure from the patent itself can also perform this function.

Indeed, nontechnical disclosure may be the primary means of conveying information in the prospect theory. For the prospect theory to work, one must have the boundaries of the right set out for all of the world to see.¹⁷⁴ Most agree that this is accomplished via the patent document: the scope of patent rights is defined by the claims and the specification. But there is also a secondary purpose to the patent document—it may attract collaborators who are interested in modifying the invention.

CONCLUSION

Patent disclosure is more than the technical knowledge of how to make and practice an invention. Disclosure has a technical as well as an underappreciated nontechnical side. The nontechnical aspects that a patent discloses include the owner of the patent, the nature of the firm or the inventor, and the very fact that there is a patent in the first place. Recognizing the existence of nontechnical disclosure paints a more complete picture of patent disclosure and the theories behind it.

Nontechnical disclosure can help explain the enduring mystery of why people obtain patents that are worth less than the required fees to obtain the patent. By looking beyond the exclusive rights paradigm, we can see that a patent provides other, harder to quantify benefits that might appeal to certain patentees. Among these are

172. *Id.* at 287.

173. *Id.*

174. Of course, this is assuming that the process of interpreting claims—claim construction—is reasonably reliable, a highly dubious contention given courts’ difficulty with claim construction. See J. Jonas Anderson, *Specialized Standards of Review*, 18 STAN. TECH. L. REV. 151, 176–85 (2015) (demonstrating the appellate difficulty in reviewing claim construction decisions).

prestige, marketing, and ease of coordinating the future commercialization of the invention.

Patent theory can also benefit by recognizing nontechnical disclosure. The prospect theory diminishes the patent document's ability to teach, a viewpoint shared by a number of academics. But recognizing the nontechnical and nonteaching functions of patent documents provides a way to better understand how information gets disseminated. Nontechnical disclosure of the patent can bring together inventors and commercializers in ways predicted by the theory, yet heretofore left unexplained in practice.