



PROTECTING MINOR IMPROVEMENTS ON CORE PATENTS:  
COMPLEMENTING TRADITIONAL PATENT PROTECTION WITH STRATEGIC  
DISCLOSURE

BY TODD E. RINNER

ABSTRACT

Managing intellectual property in a manner that achieves its full value is a priority for companies of all types and sizes. Rather than viewing defensive publications as strictly an alternative to patenting, it should be seen as an efficient complement to be utilized in combination with patenting. The development of minor improvements on major inventions presents an attractive situation for combining strategic disclosure with traditional patent protection. Publishing information about a minor improvement will create prior art and prevent competitors from obtaining a patent. By publishing incremental innovations to core patents, a firm can achieve the initial patent protection necessary to create a market advantage, and then protect that advantage through publication without enduring the costs of patenting small improvements. The major invention will be protected under patent, while the subsequent publications will protect the core patent by preventing others from patenting an improvement. Adopting this strategy avoids the prohibitive costs of blanket-patenting, and maximizes the value of intellectual property assets for companies both large and small.

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Cite as 2 J. MARSHALL REV. INTELL. PROP. L. 398



PROTECTING MINOR IMPROVEMENTS ON CORE PATENTS: COMPLEMENTING TRADITIONAL  
PATENT PROTECTION WITH STRATEGIC DISCLOSURE

BY TODD E. RINNER\*

*"If you're smart, you won't spend the money patenting all the incremental innovations."<sup>1</sup>*

INTRODUCTION

For companies of all types and sizes, intellectual property is an increasingly important asset.<sup>2</sup> Managing intellectual property in a manner that achieves its full value is a priority for these companies.<sup>3</sup> Thus, proactive steps must be taken to protect innovative technology that has been developed or is in the development process.<sup>4</sup> Recovering the significant costs of research and development is usually possible only in the presence of a market advantage.<sup>5</sup> The development of new technology creates the necessary market advantage, and it must be maintained and exploited.<sup>6</sup> A highly effective strategy involves the use of defensive publishing<sup>7</sup> in a role differing from the traditional approach. Rather than viewing defensive publication as strictly an alternative to patenting, it should be seen as an efficient complement to be utilized in combination with patenting. When defensive publishing is combined with strategic patenting, major innovations and minor improvements can be protected in an extremely efficient manner.<sup>8</sup>

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<sup>1</sup> Peter Buxbaum, *Publish or Perish*, THE BRIDGE, at 5 (2001), available at [http://www.ipcapitalgroup.com/corporate/the\\_bridge/bridgecomplete.pdf](http://www.ipcapitalgroup.com/corporate/the_bridge/bridgecomplete.pdf) (quoting John Cronin, CEO of ipCapital Group). As a consultancy, ipCapital Group advises companies on defensive publishing and other intellectual property strategies. *Id.*

<sup>2</sup> Sarah Milstein, *Property Values*, THE BRIDGE, at 9 (2001), available at [http://www.ipcapitalgroup.com/corporate/the\\_bridge/bridgecomplete.pdf](http://www.ipcapitalgroup.com/corporate/the_bridge/bridgecomplete.pdf) [hereinafter *Property Values*].

<sup>3</sup> Michael Winkleman, *The IP On Ramp*, THE BRIDGE, at 1 (2001), available at [http://www.ipcapitalgroup.com/corporate/the\\_bridge/bridgecomplete.pdf](http://www.ipcapitalgroup.com/corporate/the_bridge/bridgecomplete.pdf) (commenting on the pace of innovation and the increasing importance of intellectual property).

<sup>4</sup> Nicola Burns, *Using Technology as a Competitive Weapon*, TITE AND LEWIS, at <http://www.titeandlewis.com/articles/article62277final.pdf> (November 22, 2001) (providing a brief overview of patent protection and technology as a competitive weapon).

<sup>5</sup> *Id.*

<sup>6</sup> *Id.* Through a limited monopoly, patents on new technology can protect "leading products and provide high margins." *Id.* Alternatively, defensive publishing can prevent a competitor from obtaining a patent for an invention, although the revenue stream will be limited. *Id.*

<sup>7</sup> Defensive publishing is also referred to as strategic disclosure, strategic publication, and preemptive publication. Compare Lichtman, *infra* note 27, with Parchomovsky, *infra* note 29, and Buxbaum, *supra* note 1 (discussing the use of prior art as a means for blocking competitors' patents, but employing different terms). In the context of this comment, the terms will be used interchangeably.

<sup>8</sup> Buxbaum, *supra* note 1, at 5 (discussing comments by David Kline, co-author of *Rembrandts in the Attic: Unlocking the Hidden Value of Patents*).

The development of minor improvements on major inventions presents an attractive situation for combining strategic disclosure with traditional patent protection. Major inventions should be patented to protect the market advantage opportunity they create.<sup>9</sup> Defensively publishing subsequent incremental innovations on the major invention will provide protection from competitors without the costs of conventional blanket patenting.<sup>10</sup> By publishing information about the innovation, prior art is created that will prevent competitors from obtaining a patent.<sup>11</sup> Thus, the combination of patenting and defensive publication provides efficient protection.

This comment discusses defensive publishing as a complement to traditional patent protection. Part I reviews the patent law upon which defensive publishing operates. Part II analyzes the opportunities in which defensive publishing may be useful. Part II(A) specifically addresses the role of laggards in a patent race, while Part II(B) addresses the position of a leader. Part III proposes that strategic disclosure should be seen not as an alternative, but rather as a complement to patenting, given the proper situation. Part III(A) notes the difficulties encountered in using defensive publishing as an alternative to patent protection. Part III(B) proposes using defensive publishing as a complement to patent protection in the narrow situation of a minor improvement on a core patent already held by the company. Overall, strategic disclosure of small, incremental innovations, can allow a company to quickly protect the innovations and preserve the value of a core patent, without the prohibitive costs associated with patent protection.

## I. STRATEGIC DISCLOSURE UTILIZES TRADITIONAL PATENT LAW

Strategic disclosure operates under the same laws on which traditional patent protection is based. Part I(A) reviews the basics of patents, and the policies motivating the patent system. Part I(B) discusses blanket patenting, as opposed to defensive publishing. Part I(C) constructs the legal framework making defensive publishing possible, while Part I(D) briefly discusses the requirements for a defensive publication to act as prior art.

### *A. Patent Basics and Policy*

Patents<sup>12</sup> are one of the most important forms of protection available for innovative technology.<sup>13</sup> A patent is a government issued grant of the right to

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<sup>9</sup> See *supra* note 6 and accompanying text. “A typical monopoly market exists because there is some barrier to market entry by potential competitors.” DONALD S. CHISUM ET AL., PRINCIPLES OF PATENT LAW, 60 (2d ed. 2001). “Such barriers to entry may be physical . . . or the patent grant of the right to exclude.” *Id.*

<sup>10</sup> See *infra* Part I(B).

<sup>11</sup> Richard Poynder, *On The Defensive About Invention*, FINANCIAL TIMES (Sept. 19, 2001), available at <http://www.search.ft.com> (subscription required).

<sup>12</sup> “Patent” is derived from “letters patent,” which were letters addressed by a sovereign granting a privilege to the patentee. CHISUM ET AL., *supra* note 9, at 2.

exclude others from “making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States. . . .”<sup>14</sup> Patentable subject matter includes processes,<sup>15</sup> machines, objects of manufacture, and compositions of matter.<sup>16</sup> The right to exclude others granted by a patent is generally a period of twenty years from the patent application filing date.<sup>17</sup>

Patents represent an attempt to balance promoting innovation by rewarding an inventor, and placing new knowledge into the public domain.<sup>18</sup> By offering an exclusive right, a patent induces investment, invention, and disclosure.<sup>19</sup> In return for the right to exclude others, an inventor must describe his invention in sufficient

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<sup>13</sup> Casey P. August & Michael J. Buchenhorner, *Strategies For Developing Intellectual Property Portfolios In The Global Environment: Protection Of Intellectual Property In Hostile Environments*, 21 CAN. U.S. L.J. 261, 262 (1995).

<sup>14</sup> 35 U.S.C. § 154(a)(1) (2000).

Every patent shall contain a short title of the invention and a grant to the patentee, his heirs or assigns, of the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States, and, if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States, or importing into the United States, products made by that process, referring to the specification for the particulars thereof.

*Id.*

<sup>15</sup> “The term ‘process’ means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.” 35 U.S.C. § 100(b) (2000).

<sup>16</sup> 35 U.S.C. § 101 (2000). “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” *Id.* In the United States, plant and design patents are also obtainable. *Id.* at § 161 (“Whoever invents or discovers and asexually reproduces any distinct and new variety of plant, including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuberpropogated plant or a plant found in an uncultivated state, may obtain a patent therefor. . . .”); *Id.* at § 171 (“Whoever invents any new, original and ornamental design for an article of manufacture may obtain a patent therefor. . . .”).

<sup>17</sup> 35 U.S.C. § 154(a)(2) (2000).

Subject to the payment of fees under this title, such grant shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for the patent was filed in the United States, or if the application contains a specific reference to an earlier filed application or applications under section 120, 121, or 365(c) of this title, from the date on which the earliest such application was filed.

*Id.* For patents filed before June 8, 1995, the term is seventeen years from the issue date of the patent. *Id.* at § 154(c)(1) (1994). For patents filed after June 8, 1995, the term is twenty years from the earliest claimed filing date. *Id.* “The average term for these more recent applications will remain seventeen years because there is an average of three years between filing and issuance. CHISUM ET AL., *supra* note 9, at 822 n.3.

<sup>18</sup> CHISUM ET AL., *supra* note 9, at 1. This policy is based on the consequentialist justification “that a property right in one’s intellectual creations is necessary as a means to a greater end”. *Id.* at 5. Patents are tolerated “as an incentive for the creation, disclosure, and dissemination of technological advances.” *Id.* at 6.

<sup>19</sup> *Id.* at 1. A patent is a government attempt to “create a market for a good by establishing new forms of property rights in things related to the good.” *Id.* at 67. The government grants this right to “[give an] inventor the freedom to disclose without fear of self-induced competition.” *Id.* at 66. A potential financial reward arises from putting the patentee in a position to exclude others unless they agree to licensing and similar settlements on the patentee’s terms. Poynder, *supra* note 11, at <http://www.search.ft.com>.

detail to give notice to the public and enable<sup>20</sup> a “person having ordinary skill in the art”<sup>21</sup> to make and use the invention.<sup>22</sup> Subject to a few exceptions,<sup>23</sup> a patent application is published by the government eighteen months after filing, thus placing the new knowledge the patent describes into the public domain.<sup>24</sup>

One of the justifications of the patent system is the incentive to disclose.<sup>25</sup> By encouraging the disclosure of inventions to the public, new knowledge is immediately made available to the public and industrial growth is promoted.<sup>26</sup> In the case of traditional patent protection, conventional wisdom dictates that the patent system encourages disclosure by making it a requirement before patent protection is awarded.<sup>27</sup> However, the patent system may encourage disclosure in a less obvious way when firms are in competition for a new invention.<sup>28</sup> Firms can affect the patentability of a competitor’s invention by “altering the state of the prior art.”<sup>29</sup>

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<sup>20</sup> The enablement requirement is the quid pro quo of the United States patent system. *See Enzo Biochem, Inc. v. Gen-Probe Inc.*, 296 F.3d 1316, 1330 (Fed. Cir. 2002). “[It] serves to enrich the storehouse of public knowledge, while on the other hand, it provides for a limitation on claim scope.” CHISUM ET AL., *supra* note 9, at 190.

<sup>21</sup> This objective viewpoint refers to a hypothetical person who has ordinary skill in the art. *Life Tech., Inc. v. Clontech Lab., Inc.*, 224 F.3d 1320, 1325 (Fed. Cir. 2000). The relevant art is that to which the claimed invention pertains. 35 U.S.C. § 103(a) (2000). In determining an ordinary skill level, the following factors are considered: “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to the problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696 (Fed. Cir. 1983). The breadth of knowledge of the person of ordinary skill is presumed to be perfect, despite being unrealistic. *Custom Accessories Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986); CHISUM ET AL., *supra* note 9, at 598.

<sup>22</sup> 35 U.S.C. § 112 ¶ 1 (2000).

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 of carrying out his invention.

*Id.*

<sup>23</sup> 35 U.S.C. § 122(b)(2) (2000) (providing for exceptions to the regular 18 month publication schedule in the case of abandonment, secrecy orders, and provisional and design patents).

<sup>24</sup> CHISUM ET AL., *supra* note 9, at 3; 35 U.S.C. § 122(b)(1)(A) (2000).

[E]ach application for a patent shall be published, in accordance with procedures determined by the Director, promptly after the expiration of a period of 18 months from the earliest filing date for which a benefit is sought under this title. At the request of the applicant, an application may be published earlier than the end of such 18-month period.

*Id.*

<sup>25</sup> CHISUM ET AL., *supra* note 9, at 70.

<sup>26</sup> *Id.* at 59, 72.

<sup>27</sup> Douglas Lichtman et al., *Symposium: Taking Stock: The Law and Economics of Intellectual Property Rights: Strategic Disclosure in the Patent System*, 53 VAND. L. REV. 2175, 2177 (2000). The motivation of disclosure to preempt a competitor’s patent is discussed from the positions of both the leader and loser in a patent race. *Id.* The article concludes that strategic disclosure is not motivated solely by the law, but also by the competitive interests and goals of firms reacting to each other in a dynamic situation. *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> Gideon Parchomovsky, *Publish or Perish*, 98 MICH. L. REV. 926, 927 (2000) (questioning the traditional race model that has been utilized by economists and game theorists, and suggesting that

Firms can achieve this with any publication because it immediately becomes prior art.<sup>30</sup> Such a practice is known as defensive publishing.<sup>31</sup>

### *B. Blanket Patenting Versus Defensive Publishing*

A common and traditional way to protect new technology and improvements thereon is by patenting every new improvement. Using a strategy known as “blanket patenting,”<sup>32</sup> companies patent a new invention, and then file patents on minor improvements made to the original invention.<sup>33</sup> This approach in protecting intellectual property is simple and straightforward. However, a less obvious protection strategy requiring a higher level of planning may be suitable because of the disadvantages of blanket-patenting.<sup>34</sup>

One of the disadvantages in a blanket-patenting strategy is the possibility of being “picket-fenced” by competitors.<sup>35</sup> Picket-fencing is a situation in which competitors patent every incremental improvement on your patent, eroding its value.<sup>36</sup> Competitors can then license your technology on their own preferred terms.<sup>37</sup> For example, in 1982, IBM was granted a United States patent on the scanning tunneling microscope (“STM”).<sup>38</sup> Initially, IBM dominated the field with its STM, but only seven years later were picket-fenced by competitors patenting small improvements.<sup>39</sup> As a result, they lost full control of their pioneering technology.<sup>40</sup>

Another disadvantage of blanket-patenting is the prohibitive costs.<sup>41</sup> As the costs of patent prosecution and patent litigation rise, many companies are beginning to question the perceived value provided by a blanket patenting strategy.<sup>42</sup> Filing a domestic patent application can cost \$15,000.<sup>43</sup> Filing in multiple jurisdictions will cost a minimum of \$50,000, and maintaining the patents during their term is

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a firm may have incentive to prevent a competitor from obtaining a patent rather than competing with them head-on for the patent by strategic disclosure).

<sup>30</sup> *Id.*

<sup>31</sup> Poynder, *supra* note 11, at <http://www.search.ft.com>.

<sup>32</sup> *See id.* Blanket-patenting is an approach to intellectual property where all improvements, minor and major, are patented in an attempt to maintain complete control over a market created by a company's invention. *Id.*

<sup>33</sup> Buxbaum, *supra* note 1, at 5.

<sup>34</sup> *Id.*

<sup>35</sup> Poynder, *supra* note 11, at <http://www.search.ft.com>.

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

<sup>38</sup> *Id.* A scanning tunneling microscope (STM) is capable of imaging atomic details as small as 1/25<sup>th</sup> the diameter of a typical atom. *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> *Id.*

<sup>41</sup> *Id.* The costs of patenting involve more than just financial expenditure, but also significant time and effort in just the patent prosecution stage. *Id.*

<sup>42</sup> *Id.*

<sup>43</sup> Sarah Milstein, *New Economy: Many Midsize Companies Find that 'Defensive Publishing' is a Quick and Cheap Way to Protect Intellectual Property*, N.Y. TIMES, available at <http://query.nytimes.com/search/advanced/> (Feb. 18, 2002) (subscription required) [hereinafter *New Economy*].

expected to cost at least \$100,000.<sup>44</sup> Additionally, just having the legal protection of a patent is insufficient unless you can also afford to enforce the patent by litigating an infringement action, which is notoriously expensive.<sup>45</sup> The perceived alternative is to not patent, but this is risky because it allows a competitor to patent its own version of a firm's invention.<sup>46</sup> In this situation, the competitor may demand licensing fees before allowing the firm to use their own invention, or may even prevent them entirely from participating in the market they created.<sup>47</sup> To avoid the disadvantages of blanket-patenting, companies are adopting defensive publishing strategies.<sup>48</sup>

By publishing information about their invention, companies create "prior art"<sup>49</sup> that will prevent competitors from patenting the invention because it is no longer novel after being made public.<sup>50</sup> This approach allows a company to maintain its claim to an invention without filing a patent.<sup>51</sup> They maintain the freedom to use their unpatented innovation, while also allowing everyone else to use it.<sup>52</sup> Additionally, defensive publishing can function as a blocking tactic similar to blanket-patenting, but at a significantly lower cost.<sup>53</sup> For example, publishing on an easily accessible website, such as IP.com, costs \$109, as opposed to the typical \$15,000 for prosecuting a patent.<sup>54</sup> Under patent laws, the publication has the effect of altering the prior art, thus blocking competitors' attempts to patent.<sup>55</sup>

Defensive publishing takes advantage of a principle upon which the patent system is based.<sup>56</sup> A tradeoff of information in return for a grant of limited monopoly drives the patent system.<sup>57</sup> Because a limited monopoly is a cost to society,<sup>58</sup> patents

<sup>44</sup> Buxbaum, *supra* note 1, at 2. A patent owner must pay maintenance fees to the Patent and Trademark Office during the patent term. 35 U.S.C. § 41(b) (2000). The patent will expire if the fees are not paid. *Id.* The fees are paid at three stages of the patent term: in the first six months of (1) the fourth year after issuance (\$830); (2) the eighth year after issuance (\$1,900); and (3) the twelfth year after issuance (\$2,910). *Id.*

<sup>45</sup> Burns, *supra* note 4, at <http://www.titeandlewis.com/articles/article62277final.pdf>.

<sup>46</sup> Poynder, *supra* note 11, at <http://www.search.ft.com>.

<sup>47</sup> *Id.*

<sup>48</sup> Buxbaum, *supra* note 1, at 2. IBM has pursued a strategy of defensive publication for over ten years. *Id.* Their *Technical Disclosure Bulletin* is the single most cited source for prior art by the Patent and Trademark Office. *Id.* IBM utilizes this publication source to direct its innovations into the public domain, and prevent competitors from securing patents that would limit IBM's freedom in the market. *Id.*

<sup>49</sup> "Prior art" is used to broadly refer to previously known information. CHISUM ET AL., *supra* note 9, at 93.

<sup>50</sup> Poynder, *supra* note 11, at <http://www.search.ft.com>.

<sup>51</sup> Ruth Walker, *Whose Idea Is It, Anyway?*, THE CHRISTIAN SCIENCE MONITOR, available at <http://www.csmonitorarchive.com> (Jan. 17, 2002) (subscription required).

<sup>52</sup> *Id.*

<sup>53</sup> Poynder, *supra* note 11, at <http://www.search.ft.com>.

<sup>54</sup> IP.com is a web-based disclosure service. *Id.* The Web site enables inventors to introduce prior art by posting it on the site. *Id.* Publishing in this manner can be done for a fraction of the cost of patenting, and with little paperwork. *Id.*; *New Economy*, *supra* note 43, at <http://query.nytimes.com/search/advanced/>.

<sup>55</sup> Parchomovsky, *supra* note 29, at 927.

<sup>56</sup> *Id.* at 932.

<sup>57</sup> *Id.*

<sup>58</sup> CHISUM ET AL., *supra* note 9, at 61. Monopolies "tend to create a market-wide inefficiency called 'dead-weight-loss.'" *Id.* "The dead weight loss represents a collective loss of societal wealth,



are granted only to new inventions.<sup>59</sup> Granting a patent to a previously known invention defeats the purpose of the patent system.<sup>60</sup> Additionally, even a novel invention may still be unpatentable if it is obvious in light of the prior art.<sup>61</sup> The policy of the patent system dictates that an invention make a meaningful contribution in terms of new knowledge, and is different from existing inventions.<sup>62</sup> This policy is embodied in the Patent Act<sup>63</sup> by the requirements of novelty and nonobviousness, which provide the legal basis for defensive publishing.<sup>64</sup>

### *C. Legal Basis for Defensive Publishing*

The strategy of defensive publishing is made possible by legal rules prohibiting patent protection unless an innovation is novel and nonobvious.<sup>65</sup> Novelty and nonobviousness are both determined in light of the prior art.<sup>66</sup> For this reason, firms can affect the patentability of competitors' inventions by adding to the prior art against which new inventions are evaluated.<sup>67</sup>

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*i.e.*, wealth that is not merely shifted from consumers to producers but rather wealth that is altogether lost from producers and consumers." *Id.* at 61-65 (explaining the creation of a dead weight loss in a monopolist market).

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*

<sup>61</sup> *Id.* at 933.

<sup>62</sup> *Id.*

<sup>63</sup> *See generally* 35 U.S.C. §§ 1-376 (2000).

<sup>64</sup> Parchomovsky, *supra* note 29, at 933.

<sup>65</sup> Rebecca S. Eisenberg, *Correspondence: The Promise and Perils of Strategic Publication to Create Prior Art: A Response to Professor Parchomovsky*, 98 MICH. L. REV. 2358 (2000) (responding to an article by Professor Gideon Parchomovsky, *supra* note 29, and arguing that publication of research by a firm may evince more than a motivation to act in a spoiler role and preempt competitors' patents).

<sup>66</sup> *Id.* For obviousness determinations, the scope and content of the prior art is limited to that which is analogous. *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992) (finding that "a person having ordinary skill in the art would not reasonably have expected to solve the problem of dead volume in tanks for storing refined petroleum by considering a reference dealing with plugging underground formation anomalies").

Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.

*Id.* at 658-59. *See also In re Paulsen*, 30 F.3d 1475, 1481 (Fed. Cir. 1994) (stating that "although there is little dispute that the prior art references cited here . . . are not within the same field of endeavor as computers, such references may still be analogous if they are 'reasonably pertinent to the particular problem with which the inventor is involved.'").

<sup>67</sup> Parchomovsky, *supra* note 29, at 927.

### 1. *Novelty*

The novelty requirement is embodied in section 102(a) of the Patent Act.<sup>68</sup> It denies patentability to inventions known by others in the United States, or described in a printed publication in either the United States or a foreign country prior to the date of invention by the patent applicant.<sup>69</sup> The novelty requirement focuses on the patent applicant and asks if a third person previously disclosed or invented the subject matter sought to be patented.<sup>70</sup> Additionally, section 102(b) denies patentability if the subject matter was disclosed more than one year prior to the application filing date.<sup>71</sup> Courts have interpreted the novelty requirement such that patent applications will be rejected if “there existed a single prior art reference that disclosed ‘each and every element’ of the claimed invention”<sup>72</sup> so as to allow use of the invention without undue experimentation by a person skilled in the art.<sup>73</sup> However, the novelty requirement is not the most significant statutory provision in relation to defensive publishing.<sup>74</sup>

For a publication to preempt a subsequent patent application, an identical disclosure of the claimed invention is not required.<sup>75</sup> Rather, the publication merely has to make the claimed invention obvious in the eyes of a person skilled in the art.<sup>76</sup>

### 2. *Nonobviousness*

The nonobvious requirement is embodied in section 103 of the Patent Act.<sup>77</sup> It prevents patent protection from being granted to meaningless improvements on prior

<sup>68</sup> Lichtman, *supra* note 27, at 2180; *see* 35 U.S.C. § 102(a) (2000) (“[A person shall be entitled to a patent] unless the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent. . .”).

<sup>69</sup> 35 U.S.C. § 102(a) (2000).

<sup>70</sup> *See* Minnesota Mining and Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1565 (Fed. Cir. 1992).

<sup>71</sup> 35 U.S.C. § 102(b) (2000).

[A person shall be entitled to a patent unless] the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States. . . .

*Id.*

<sup>72</sup> *In re Paulsen*, 30 F.3d 1475, 1478-1479 (Fed. Cir. 1994) (“A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference.”).

<sup>73</sup> *See, e.g.,* W.L. Gore & Assocs. v. Garlock, Inc., 721 F.2d 1540, 1557 (Fed. Cir. 1983) (“A patent is invalid only when those skilled in the art are required to engage in undue experimentation to practice the invention.”); *Ciba-Geigy Corp. v. Alza Corp.*, 1995 U.S. App. LEXIS 28214, at \*11-12 (Fed. Cir. 1995) (“The key to analyzing an ‘undue experimentation’ attack on the enablement of a patent, and therefore of an anticipatory reference, is in determining what is ‘undue’..”); *Cf. Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1230 (Fed. Cir. 1994) (stating that in the context of conception an idea must be “sufficiently precise that a skilled artisan could carry out the invention without undue experimentation. . .”).

<sup>74</sup> Lichtman, *supra* note 27, at 2181.

<sup>75</sup> Parchomovsky, *supra* note 29, at 933.

<sup>76</sup> *Id.*

inventions.<sup>78</sup> This requirement also promotes the policy of the patent system by “limiting patentability to inventions that truly enhance social utility.”<sup>79</sup>

Even without completing the invention, defensive publishing can be used under this requirement to prevent a competitor from receiving a patent.<sup>80</sup> By adding information to the prior art, patentability may be affected.<sup>81</sup> One new piece of information can establish obviousness by combining it with other prior art references.<sup>82</sup> The only requirement to render the combination obvious is that a reason or motivation for the combination exist in the prior art.<sup>83</sup>

The use of defensive publishing under the nonobvious requirement is subject to two limitations.<sup>84</sup> First, the language of section 103(a) expressly provides that nonobviousness is to be decided “at the time the invention was made.”<sup>85</sup> Under this language, courts judge obviousness by looking at the prior art existing when the invention was conceived, and one year prior to the application filing date.<sup>86</sup> Patent Office Rule 131 reflects this by allowing an inventor to “swear behind” and eliminate a section 102(e) prior art reference.<sup>87</sup> Under this rule, an inventor can show that he conceived the invention prior to the reference’s existence and worked diligently<sup>88</sup> to

<sup>77</sup> 35 U.S.C. § 103(a) (2000).

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

*Id.*

<sup>78</sup> Parchomovsky, *supra* note 29, at 933.

<sup>79</sup> *Id.* at 928; *see* 35 U.S.C. § 103 (2000). “‘Practical utility’ is a shorthand way of attributing ‘real-world’ value to claimed subject matter.” *Nelson v. Bowler*, 626 F.2d 853, 856 (C.C.P.A. 1980).

<sup>80</sup> Lichtman, *supra* note 27, at 2185.

<sup>81</sup> *Id.*

<sup>82</sup> *Id.*

<sup>83</sup> *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1578-59 (Fed. Cir. 1997) (“[T]he record must provide a teaching, suggestion, or reason to substitute . . . [t]he absence of such a suggestion to combine is dispositive in an obviousness determination.”).

<sup>84</sup> Lichtman, *supra* note 27, at 2185.

<sup>85</sup> 35 U.S.C. § 103(a) (2000).

<sup>86</sup> Lichtman, *supra* note 27, at 2186.

<sup>87</sup> 37 C.F.R. § 1.131(a) (1994).

When any claim of an application or a patent under reexamination is rejected, the inventor of the subject matter of the rejected claim, the owner of the patent under reexamination, or the party qualified under §§ 1.42, 1.43, or 1.47, may submit an appropriate oath or declaration to establish invention of the subject matter of the rejected claim prior to the effective date of the reference or activity on which the rejection is based. The effective date of a U.S. patent, U.S. patent application publication, or international application publication under PCT Article 21(2) is the earlier of its publication date or date that it is effective as a reference under 35 U.S.C. 102(e). Prior invention may not be established under this section in any country other than the United States, a NAFTA country, or a WTO member country. . . .

*Id.*

<sup>88</sup> Diligence is a factor only when a party is the first to conceive an invention, but second to achieve actual or constructive reduction to practice. 35 U.S.C. § 102(g)(2) (2000). Because patent law sets forth a policy of prompt disclosure, importance is placed on what the party was doing when

reduce the invention to practice.<sup>89</sup> However, this rule does not eliminate the possibility of strategic disclosure under the statutory bars because it cannot remove references whose effective date is more than one year before the application filing date.<sup>90</sup> Furthermore, use of defensive publishing under the nonobvious requirement is still possible because of the uncertainty inherent in conception.<sup>91</sup>

It may be difficult to determine when exactly conception has occurred, and this uncertainty leaves open the question of priority of an invention.<sup>92</sup> An invention is conceived when the inventor has formed a “definite and permanent idea of the complete and operative invention, as it is [thereafter] applied in practice.”<sup>93</sup> “The idea must be so clearly defined in the inventor’s mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation.”<sup>94</sup> Thus, inventors reacting to competitors’ actions must prepare for the fact that they may not have legally conceived their invention yet.<sup>95</sup> Additionally, conception is a step occurring late in the inventive process, allowing an ample window of opportunity prior to conception.<sup>96</sup>

Defensive publishing is subject to a second limitation under the nonobvious requirement resulting from a court’s use of “secondary factors” as objective evidence in measuring obviousness.<sup>97</sup> An intended defensive publication may interact with the secondary factors “to make an invention look less obvious, not more.”<sup>98</sup> Objective evidence of nonobviousness must be considered when present.<sup>99</sup> The secondary factors are favored over a hindsight reconstruction that is subject to significant bias.<sup>100</sup> The objective considerations include commercial success,<sup>101</sup> long-felt need,<sup>102</sup> failure of others,<sup>103</sup> copying,<sup>104</sup> and licensing<sup>105</sup> or acquiescence.<sup>106</sup>

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another party became the first to reduce to practice despite lagging behind at the point of conception. CHISUM ET AL., *supra* note 9, at 510. The party first to conceive must show “reasonable diligence” from just before the other party’s conception till their own reduction to practice to maintain a claim of priority. *In re Jolley*, 308 F.3d 1317, 1326 (Fed. Cir. 2002) (holding that the inventor reduced conception to practice with requisite diligence).

<sup>89</sup> 37 C.F.R. § 1.131(b) (1994).

The showing of facts shall be such, in character and weight, as to establish reduction to practice prior to the effective date of the reference, or conception of the invention prior to the effective date of the reference coupled with due diligence from prior to said date to a subsequent reduction to practice or to the filing of the application. Original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or declaration of their absence satisfactorily explained.

*Id.*

<sup>90</sup> 37 C.F.R. § 1.131(a) (“Prior invention may not be established under this section . . . [if] (2) The rejection is based upon a statutory bar. . .”). See *infra* Part I(C)(3).

<sup>91</sup> Lichtman, *supra* note 27, at 2186.

<sup>92</sup> *Id.*

<sup>93</sup> *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1228 (Fed. Cir. 1994).

<sup>94</sup> *Id.*

<sup>95</sup> Lichtman, *supra* note 27, at 2186-87.

<sup>96</sup> *Id.* at 2187.

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

<sup>99</sup> *Custom Accessories Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 960 (Fed. Cir. 1986). See also *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983).

<sup>100</sup> *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 1091 (Fed. Cir. 1985), *vacated on other grounds*, 475 U.S. 809 (1986) (stating it was error for the District Court to employ the benefit of

The failure of others is “virtually irrefutable” evidence of nonobviousness.<sup>107</sup> Under this factor, a defensive publication intended to bar patentability under section 103 may actually be evidence that a firm was competing for an invention but had failed as of that publication.<sup>108</sup>

Inventors often claim that a competitor copied their invention, and that the copying is evidence of nonobviousness.<sup>109</sup> In combination with failure of others, copying creates a difficult situation for a competing firm.<sup>110</sup> If they publish information, but then fail to achieve the invention, that failure may be used as evidence of nonobviousness.<sup>111</sup> But if the publishing firm just waits and copies a

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hindsight); see Parchomovsky, *supra* note 29, at 935 (“The hindsight bias is a cognitive effect that causes people to ‘exaggerate what could have been anticipated in foresight [and] to view [what has happened] as having appeared ‘relatively inevitable’ before it happened.”).

<sup>101</sup> When commercial success is asserted as evidence of nonobviousness, the patentee essentially says “[i]f my invention is obvious, why didn’t any of my competitors have success making the invention given its significant consumer demand?” CHISUM ET AL., *supra* note 9, at 606. The reasoning behind this argument is that competitors tried, but failed, which points to a conclusion of nonobviousness. *Id.* Additionally, for commercial success to carry meaningful weight, a nexus must be proven to exist between it and the benefits of the claimed invention. *Pentec, Inc. v. Graphic Controls Corp.*, 776 F.2d 309, 315 (Fed. Cir. 1985). In other words, the commercial success must be attributable to the claimed invention. *Id.* at 316 (concluding that it could not be said “that the commercial success here may not have been due in large part to ‘other economic and commercial factors unrelated to the technical quality of the patented subject matter.” (citing *Cable Elec. Prod., Inc. v. Genmark, Inc.*, 770 F.2d 1015, 1027 (Fed. Cir. 1985))).

<sup>102</sup> A long-felt need in an industry when combined with the failure of others to satisfy that need may be evidence of nonobviousness. See *In re Piasecki*, 745 F.2d 1468 (Fed. Cir. 1984) (reversing a Board of Appeals decision for improperly discounting evidence of a failure of others to provide a feasible solution to a longstanding problem of lifting heavy loads by aircraft). Identifying a need is accomplished from an objective viewpoint. *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1144 (Fed. Cir. 1986). This factor works in conjunction with the “failure of others” to lead to a conclusion of nonobviousness. See *In re Piasecki*, 745 F.2d at 1475 (“A review of the rebuttal evidence shows that there was a failure of others to provide a feasible solution to the long-standing problem of lifting very heavy loads. . .”).

<sup>103</sup> See *Dow Chem. Co. v. Am. Cyanamid Co.*, 816 F.2d 617, 622 (Fed. Cir. 1987) (“[T]ends to show the nonobviousness of the claimed invention as does failure of others. . .”).

<sup>104</sup> *Vandenberg v. Dairy Equip. Co.*, 740 F.2d 1560, 1567 (Fed. Cir. 1984) (“The copying of an invention may constitute evidence that the invention is not an obvious one.”).

<sup>105</sup> The acceptance of a license by a competitor may be an implied recognition of nonobviousness. See *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985). The reasoning stems from an assumption that a firm would not pay royalties unless it thought the patent was valid, but this factor is susceptible to the business and economic decisions of the firm also. *Id.* at 907-08.

Such programs are not infallible guides to patentability. They sometimes succeed because they are mutually beneficial to the licensed group or because of business judgments that it is cheaper to take licenses than to defend infringement suits, or for other reasons unrelated to the unobviousness of the licensed subject matter.

*Id.*

<sup>106</sup> See generally *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17-18 (1966) (stating that “as indicia of obviousness or nonobviousness, these inquiries may have relevancy”).

<sup>107</sup> *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 1099 (Fed. Cir. 1985), *vacated on other grounds*, 475 U.S. 809 (1986).

<sup>108</sup> Lichtman, *supra* note 27, at 2188.

<sup>109</sup> *Vandenberg*, 740 F.2d at 1567.

<sup>110</sup> Lichtman, *supra* note 27, at 2188.

<sup>111</sup> *Id.*

competitor's invention, the copying will be strong evidence of nonobviousness.<sup>112</sup> Copying is the strongest evidence of nonobviousness when used in this situation — where the firm initially attempted the invention but failed.<sup>113</sup> The other secondary factors operate in a similar manner, making strategic disclosure a difficult option when trying to prevent patentability under the nonobvious requirement.<sup>114</sup> However, statutory bars provide another opportunity for defensive publishing.

### 3. Statutory Bars

The “statutory bars” of section 102(b) of the Patent Act are also important in the realm of defensive publishing.<sup>115</sup> This section requires a patent application to be filed promptly by only granting a one-year grace period, thus giving rise to an opportunity for strategic disclosure by a later inventor.<sup>116</sup> Between the first inventor's conception and actual date of filing, a later inventor can disclose information that may bar patenting.<sup>117</sup> Admittedly though, defensive publishing in this scenario will be difficult because the first inventor is given one year from the time of the defensive publication to file a patent application before it would be barred.<sup>118</sup> Thus, disclosure under these circumstances would not bar, but rather encourage patenting by the first inventor.<sup>119</sup>

Defensive publishing may still be possible by utilizing “quiet disclosure.”<sup>120</sup> For example, a single disclosure in a foreign library may constitute prior art capable of barring a patent application if the later inventor is unaware of its existence.<sup>121</sup> An analogous form of quiet disclosure can be accomplished through the Statutory

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<sup>112</sup> *Id.*

<sup>113</sup> *Vandenberg*, 740 F.2d at 1567. “This would be particularly true where the copyist had itself attempted for a substantial length of time to design a similar device, and had failed.” *Id.*

<sup>114</sup> Lichtman, *supra* note 27, at 2188.

<sup>115</sup> *Id.* at 2181.

<sup>116</sup> *Id.* at 2181-82; 35 U.S.C. § 102(b) (2000).

<sup>117</sup> Lichtman, *supra* note 27, at 2182.

<sup>118</sup> *See* 35 U.S.C. § 102(b).

<sup>119</sup> Lichtman, *supra* note 27, at 2184.

<sup>120</sup> *Id.* “Quiet disclosure” occurs when a firm publishes in such a manner that the original inventor will be unaware of the disclosure. *Id.* However, this situation raises further questions of whether a patent examiner will find the disclosure, and if not, what must be further done to utilize the disclosure as a preemption to patentability. *Id.* However, this issue is beyond the cursory treatment of quiet disclosure in this comment.

<sup>121</sup> *See In re Hall*, 781 F.2d 897, 900 (Fed. Cir. 1986) (rejecting the “argument that a single catalogued thesis in [the Freiburg] [U]niversity library does not constitute sufficient accessibility to those interested in the art exercising reasonable diligence”); *see also infra* notes 132-34, 190.

Invention Registration (“SIR”) procedure.<sup>122</sup> The SIR is effective as prior art as of the date filed.<sup>123</sup>

Under the patent laws, defensive publications operate as prior art because of the statutory requirements of novelty and nonobviousness, in addition to the statutory bars providing a one-year grace period.<sup>124</sup> The patent laws also dictate the requirements for a defensive publication to qualify as prior art.<sup>125</sup>

#### *D. Legal Requirements of Defensive Publishing*

The requirements for a disclosure to constitute a defensive publication are similar to those determining the sufficiency of a patent application.<sup>126</sup> A defensive publication must have an enabling disclosure to negate patentability.<sup>127</sup> A publication is enabling if the information disclosed allows a person skilled in the art to produce the invention.<sup>128</sup> Thus, a publication must describe the invention in detail with sufficient clarity, rather than providing an obscure or suggestive description.<sup>129</sup>

Unlike a patent application though, a defensive publication need not disclose a utility for the invention.<sup>130</sup> The removal of the utility requirement makes defensive publication possible even when no known use exists for the invention.<sup>131</sup> However, a subsequent inventor may still obtain a method patent when a use is discovered for the invention.<sup>132</sup>

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<sup>122</sup> 35 U.S.C. § 157(a) (2000).

Notwithstanding any other provision of this title, the Director is authorized to publish a statutory invention registration containing the specification and drawings of a regularly filed application for a patent without examination if the applicant...(1) meets the requirements of section 112 of this title...(3) waives the right to receive a patent on the invention within such period as may be prescribed by the Director. . . .

*Id.*

<sup>123</sup> See 35 U.S.C. § 157(c) (2000). For a discussion of SIRs, see Eisenberg, *supra* note 65, at 2365-69, which addresses the use of SIRs in DNA sequencing races.

<sup>124</sup> See generally 35 U.S.C. § 102-103 (2000).

<sup>125</sup> See 35 U.S.C. § 102-103 (2000).

<sup>126</sup> 35 U.S.C. § 131 (2000) (requiring that an SIR meet the patentability requirements of 35 U.S.C. § 112). A patent application is examined to determine its entitlement to a patent under the law. *Id.* The requirements under the law are adequate disclosure (includes enablement), novelty, nonobviousness, utility, and that the claimed invention fall within a class of statutory subject matter. See 35 U.S.C. § 101-103, 112 (2000).

<sup>127</sup> 35 U.S.C. § 157(a)(1) (2000) (requiring that an SIR must provide an enabling disclosure); *In re Donohue*, 766 F.2d 531, 533 (Fed. Cir. 1985) (“[E]ven if the claimed invention is disclosed in a printed publication, that disclosure will not suffice as prior art if it was not enabling.”); see also *Paperless Accounting, Inc. v. Bay Area Rapid Transit Sys.*, 804 F.2d 659, 665 (Fed. Cir. 1986).

<sup>128</sup> *Paperless Accounting, Inc.*, 804 F.2d at 665 (explaining that “[a] disclosure must be such as will give possession of the invention to the person of ordinary skill”).

<sup>129</sup> Parchomovsky, *supra* note 29, at 934.

<sup>130</sup> See *In re Schoenwald*, 964 F.2d 1122, 1124 (Fed. Cir. 1992) (“[A] disclosure lacking a teaching of how to use a fully disclosed compound for a specific, substantial utility . . . is, under the present state of the law, entirely adequate to anticipate a claim to either the product or the process. . .”).

<sup>131</sup> Eisenberg, *supra* note 65, at 2362.

<sup>132</sup> MANUAL OF PATENT EXAMINING PROCEDURE, § 2112.02, Process Claims, 2100-54 (Aug. 2001) [hereinafter MPEP] (“The discovery of a new use for an old structure based on unknown

Additionally, a defensive publication must be accessible to the public qualify as prior art.<sup>133</sup> Exact determination of whether a reference was “available” is a legal determination approached on a case-by-case basis.<sup>134</sup> So long as the reference is available to the public interested in the art, it will be “accessible.”<sup>135</sup>

With the above basic legal framework in place, this comment proceeds to discuss positions in which a disclosure strategy could be utilized. The availability and applicability of defensive publication will vary on an individual basis. The appropriate use of a disclosure strategy will depend significantly on various economic factors, corporate goals and policies, and subjective decisions and judgments. This dependency will prove to make most situations difficult to analyze, at best. An analysis of the traditional positions assumed by competitors reveals apparent opportunities to utilize defensive publishing, only to be severely limited by practical realities. However, a narrow situation appears to lend itself more readily to a combined use of patenting and defensive publication protection.

## II. OPPORTUNITIES TO UTILIZE STRATEGIC DISCLOSURE DEPEND ON THE PARTICIPANT'S POSITION

A threshold inquiry for any competitor is “whether the invention presents a persuasive business case that is worth the expense involved in patenting.”<sup>136</sup> The strategy adopted by a firm may help dictate its actions and the extent to which it utilizes strategic disclosure.<sup>137</sup> A desire to achieve “freedom of action”<sup>138</sup> sets the

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properties of the structure might be patentable to the discoverer as a process of using.”). However, “[w]hen the prior art device is the same as a device described in the specification for carrying out a claimed method, it can be assumed the device will inherently perform the claimed process.” *Id.*

<sup>133</sup> *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1569 (Fed. Cir. 1988) (“If accessibility is proved, there is no requirement to show that particular members of the public actually received the information.”).

<sup>134</sup> *In re Hall*, 781 F.2d 897, 899 (Fed. Cir. 1986).

<sup>135</sup> *Id.* “The proponent of the publication bar must show that prior to the critical date the reference was sufficiently accessible, at least to the public interested in the art, so that such a one by examining the reference could make the claimed invention without further research or experimentation.” *Id.* A survey of the technical aspects of “accessibility” is beyond the scope of this comment. For further cases discussing the accessibility of a reference, see *In re Donohue*, 766 F.2d 531 (Fed. Cir. 1985), *In re Wyer*, 655 F.2d 221 (C.C.P.A. 1981), and *In re Bayer*, 568 F.2d 1357 (C.C.P.A. 1978).

<sup>136</sup> Buxbaum, *supra* note 1, at 5.

<sup>137</sup> August & Buchenhorner, *supra* note 13, at 267. It may be helpful to consider three common licensing strategies: 1) freedom of action; 2) revenue source; and 3) exclusive market. *Id.* Freedom of action is briefly discussed in the text of this comment. See *supra* Part II.

The revenue source strategy is a situation in which the participant will seek royalties as compensation for research and development costs. August & Buchenhorner, *supra* note 13, at 268. Patents are pursued for their licensing value to companies that perform little of their own research and development. *Id.* Thus, the pursuit of patents in this situation is usually emphasized on products where infringement is easy to prove. *Id.*

Under the exclusive market strategy, patents are pursued to gain control of an area of technology. *Id.* Licenses will not be granted to others, and thus the patents will cover key aspects of an invention and potential alternatives in an attempt to ensure exclusivity. *Id.*

<sup>138</sup> *Id.* at 135.



stage for strategic disclosure.<sup>139</sup> With this approach, a firm seeks to achieve freedom to participate in a market without the constraints imposed by competitors' patents.<sup>140</sup> This freedom can be achieved not only by obtaining patents, but by preventing competitors from obtaining patents.<sup>141</sup> This basic goal stems from the operation of the American patent system, and plays an underlying role in intellectual property protection regardless of a firm's position.

Part II(A) discusses a model of the American patent system as a starting point. Part II(B) then approaches the opportunities presented by strategic disclosure. In Part II(B)(1), the position of a laggard in a patent race is discussed, while in Part II(B)(2), the analysis turns to the leader of a patent race and the greater opportunities available for effective use of strategic disclosure. Part II(C) concludes the analysis by discussing the implications of strategic disclosure and the practical difficulties faced by using it as an alternative, rather than a complement to patent protection.

#### A. *The American Patent System Model Guides the Analysis of Strategic Disclosure*

The American<sup>142</sup> patent system has been characterized as a race model by economists and theorists.<sup>143</sup> Under the race model, the winner in a patent race (i.e. the first to invent) will gain the market advantage, while the loser gains nothing.<sup>144</sup> A participant's sole option is to try to win the patent race.<sup>145</sup> However, this model is inaccurate because it fails to recognize the possibility of strategic disclosure.<sup>146</sup>

Trying to win a patent race is not the only strategy available.<sup>147</sup> The optimal strategy for a participant is to maximize its expected gains under a patent system.<sup>148</sup> No participant can reasonably assume it will win every patent race. Therefore, a participant should not attempt to win every patent race, rather, it should anticipate

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<sup>139</sup> Cf. Parchomovsky, *supra* note 29, at n.2 ("Preemptive publication may also be useful to firms—whether in a race or not—that do not wish to incur the considerable cost of obtaining a patent, but want to retain free access to their R&D.").

<sup>140</sup> See Buxbaum, *supra* note 1, at 5 ("Just by publishing, he says, 'the company achieves freedom of action for itself while stopping others from patenting.'") (quoting John Cronin, CEO of ipCapital Group).

<sup>141</sup> *Id.*

<sup>142</sup> This comment focuses solely on implications under the American patent system.

<sup>143</sup> Parchomovsky, *supra* note 29, at 926.

<sup>144</sup> *Id.* at 926. "Second-place finishers, of course, do not leave the race empty-handed—they surely enjoy some educational benefits from the process of competing, they have the possibility of pursuing spin-off research, and so on." Lichtman, *supra* note 27, at n.58.

<sup>145</sup> Parchomovsky, *supra* note 29, at 926 ("While the sports analogy has provided a useful framework for understanding the economics of invention, it has obfuscated an important aspect of the inventive process: the possibility of strategic publication of research findings in order to prevent the issuance of a patent to a competitor.").

<sup>146</sup> See *id.* at 926-27 ("[I]t has obfuscated an important aspect of the inventive process: the possibility of strategic publication of research findings in order to prevent the issuance of a patent to a competitor.").

<sup>147</sup> *Id.* at 927.

<sup>148</sup> *Id.* at 931.

and maximize a market position it assumes without patent protection in situations where winning the race is unlikely.<sup>149</sup>

The best strategy may be to prevent competitors from winning the patent race.<sup>150</sup> By disclosing research information, a participant trailing in a patent race (“laggard”) may be able to create prior art and preempt the issuance of a patent to a leading competitor (“leader”).<sup>151</sup> This strategy recognizes a laggard’s position and the option to “publish or perish.”<sup>152</sup> However, as discussed below, numerous practical complications arise when attempting to use defensive publishing in this way. A more successful way to utilize defensive publishing is available to a leader, especially one who has already achieved a major invention and is developing improvements upon it.

### *B. The Relative Positions of Laggards and Leaders*

A participant’s probability of winning a patent race hinges on its ability to successfully complete an invention before its competitors.<sup>153</sup> As a basic “leader” premise, a participant generally should compete till the end of the patent race if it believes it has the highest chance of winning.<sup>154</sup> However, as will be proposed, even this simple premise is subject to achieving greater gains by the inclusion of strategic disclosure in a manner compatible with obtaining a patent.<sup>155</sup>

In contrast, the general strategy for a participant with a lower chance of winning a patent race may be to protect its own advances by limiting a competitor’s available patent protection.<sup>156</sup> Rather than conceding a loss in light of an imminent reduction to practice by a competitor, a laggard should employ strategic disclosure and publish the information it holds in an attempt to limit the available patent protection.<sup>157</sup> However, this general laggard strategy is also subject to difficulties arising from the legal rules and practicalities of disclosure.

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<sup>149</sup> *Id.* “Consequently, in many cases the best strategy for firms is not to try to win every patent race they enter, but, rather, to quit the race and maximize their profits without patent prosecution.” *Id.*

<sup>150</sup> *Id.* at 927.

<sup>151</sup> *Id.* This is an attractive option to the laggard because any success will allow it to act freely upon its own research results without fear of limitation by a patent granted to the leader. *Id.* at 932-36.

<sup>152</sup> *Id.* at 927. The idea of “publish or perish” recognizes the situation firms facing a loss in a patent race sometimes encounter. *Id.* The “perish” option exists because losing a patent race to a competitor may result in a substantial loss of revenue for the laggard. *Id.* The “publish” option avoids this result by preventing a competitor from gaining a patent, assuming the defensive publication is sufficient to preempt, or at least narrow the scope of, a competitor’s patent application. *Id.*

<sup>153</sup> *Id.* at 932. It is actually the first participant to achieve conception of an invention, rather than actual reduction to practice, that will win the patent race, when accompanied with proper diligence. 35 U.S.C. § 102(g)(2) (2000).

<sup>154</sup> *Id.* at 932.

<sup>155</sup> See *infra* Part III(B).

<sup>156</sup> See Parchomovsky, *supra* note 29, at 932 (“[A] firm estimating that it will lose should attempt to maximize its expected profits in the absence of patent protection . . . a firm in possession of sufficient research results can bar its competitor from obtaining the patent by publishing the information it holds.”).

<sup>157</sup> *Id.* at 932.

### 1. *Strategic Disclosure by Laggards*

Strategic disclosure can benefit a laggard in some situations, but the legal rules make it difficult and often undesirable.<sup>158</sup> The driving idea behind a typical laggard's strategic disclosure is the following: publication will allow a participant to play a "spoiler" role by raising a patentability bar and preempting a competitor's patent application.<sup>159</sup> Strategic disclosure is attractive to a laggard because "to whatever extent the strategy is successful, the laggard will be free to make use of any research results it had in common with its rival, competing in some subset market based on the products and services no longer eligible for patenting."<sup>160</sup> One easily recognizable downfall does exist: the disclosure will limit the laggard's own ability to obtain a patent as well.<sup>161</sup>

In further analyzing the strategy options available to a laggard, a "conventional laggard" must be distinguished from a "legal laggard."<sup>162</sup> A conventional laggard trails its competitor in the research and development portions of the patent race, but can still overtake the competitor and win the patent.<sup>163</sup> In contrast, the legal laggard cannot overtake a competitor because the rival has the legal priority of an earlier conception date.<sup>164</sup> Thus, a trailing participant is a conventional laggard until a rival's conception, and then becomes a legal laggard from that point forward.<sup>165</sup>

#### a. *The Conventional Laggard*

A participant in the position of a conventional laggard has the most options for use of strategic disclosure.<sup>166</sup> A disclosure at this point could raise a section 102(b) statutory bar if it describes the leader's future invention.<sup>167</sup> Alternatively, a disclosure may render the leader's invention obvious under section 103.<sup>168</sup> Thus, the spoiler role is available to the laggard at this point. However, drawbacks and potentially negative consequences suggest that disclosure in this situation may not be the best choice.<sup>169</sup>

A formal modeling of the conventional laggard scenario presents serious doubts as to whether strategic disclosure is actually attractive at this stage.<sup>170</sup> The gains by

<sup>158</sup> Lichtman, *supra* note 27, at 2190.

<sup>159</sup> Parchomovsky, *supra* note 29, at 934.

<sup>160</sup> Lichtman, *supra* note 27, at 2197.

<sup>161</sup> *Id.* A secondary cost may be associated with the laggard's disclosures also. *Id.* Depending on the specific situation, the disclosures may help other firms pursue related research. *Id.*

<sup>162</sup> *Id.*

<sup>163</sup> *Id.*

<sup>164</sup> *Id.*

<sup>165</sup> Diligence, as required, in pursuing a reduction to practice is assumed from this point forward. *See generally supra* note 88.

<sup>166</sup> Lichtman, *supra* note 27, at 2197. At this point in the patent race, neither the participant nor its rivals has achieved conception. *See id.*

<sup>167</sup> *Id.*; *see also* 35 U.S.C. § 102(b) (2000).

<sup>168</sup> Lichtman, *supra* note 27, at 2197; *see* 35 U.S.C. § 103 (2000).

<sup>169</sup> Lichtman, *supra* note 27, at 2198; Eisenberg, *supra* note 65, at 2360-61.

<sup>170</sup> Lichtman, *supra* note 27, at 2190. Lichtman's game theory model addresses the incentives a laggard faces when participating in a patent race. *Id.* at 2190-97. The formal

such disclosure would block the competitor's patent and achieve freedom of action in the relevant market.<sup>171</sup> However, the conventional laggard has not yet lost the patent race, or rather the race to conception.<sup>172</sup> The conventional laggard could still surpass the leader and obtain the patent.<sup>173</sup> At this point, the chance at receiving a patent and market monopoly may be more valuable than a guaranteed freedom to participate in the market at a much less valuable position.<sup>174</sup>

Other problems arise in the scheme of the conventional laggard. Disclosure may invite additional competitors, thus further reducing the value of the free participation in the relevant market.<sup>175</sup> Additionally, disclosure of information that is new to the leading firm may actually help accelerate their research.<sup>176</sup> Alternatively, the disclosure could potentially help the leading firm draft a patent application distinguishing itself from the disclosure.<sup>177</sup> Such a disclosure would be especially helpful in drafting claim language that clearly avoided the publication.<sup>178</sup>

Another problem arises if the disclosure contains incomplete or inadequate research results.<sup>179</sup> Such a disclosure may help establish that a later invention was nonobvious.<sup>180</sup> Courts turn to secondary factors, such as success where others have failed, as evidence in determining nonobviousness.<sup>181</sup> A laggard can thus risk helping a leader prove patentability when it publishes results short of a successful invention.<sup>182</sup>

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modeling is beyond the scope of this paper, but its conclusions address the heart of the dilemma laggards encounter. The following brief summary of Lichtman's modeling is necessary to understanding the direction it takes and conclusions it reaches. Each participant is unsure of its competitor's progress, and thus the model proceeds as one of incomplete information. *Id.* at 2190. The model focuses on disclosures by trailing firms. *Id.* at 2191. Ultimately, the greater the chance that a laggard can leapfrog the leader and win the patent, the less appealing strategic disclosure will be. *Id.* at 2196. Similarly, a diminishing payoff in the subset market will lead to a lesser attraction of strategic disclosure. *Id.* at 2191. A third variable will have the same effect - the greater the change in expected patent value from a disclosure, the more attractive strategic disclosure becomes. *Id.* at 2193. This is because the destroyed patent value does not impose a cost on the laggard, but rather a benefit. *Id.* at 2197.

<sup>171</sup> *Id.* at 2198.

<sup>172</sup> By definition, a conventional laggard exists prior to conception. *Id.* Upon conception, the conventional laggard is termed a legal laggard, and the options for strategic disclosure change. *Id.* at 2197.

<sup>173</sup> *Id.* at 2198.

<sup>174</sup> *Id.* ("[A] small chance at a big payoff would be worth more to the laggard than a guaranteed opportunity for a small to modest payoff.")

<sup>175</sup> *Id.*

<sup>176</sup> Eisenberg, *supra* note 65, at 2361.

<sup>177</sup> *Id.*

<sup>178</sup> *Id.*

<sup>179</sup> *Id.*

<sup>180</sup> *Id.* "The strictness of this standard by its terms varies from one field to the next and changes over time, depending both on the scope and content of the prior art and on the prevailing level of skill among people working in the field." *Id.*

<sup>181</sup> *Pentec, Inc. v. Graphic Controls Corp.*, 776 F.2d 309, 315 (Fed. Cir. 1985) (stating that "[o]bjective evidence of nonobviousness, when present, must always be considered before reaching a legal conclusion under §103").

<sup>182</sup> Eisenberg, *supra* note 65, at 2361 ("Although the publication adds to the prior art, its limitations also help document that the ultimate solution to the research problem was far from obvious.")

*b. The Legal Laggard*

A legal laggard faces a situation quite different in contrast to that of the conventional laggard.<sup>183</sup> Disclosure at this point has minimal drawback.<sup>184</sup> The leader has already obtained priority because it was the first to conceive.<sup>185</sup> Even if the laggard is the first to achieve a reduction to practice, the leader will still have the priority date.<sup>186</sup> Unfortunately, strategic disclosure at this point is quite difficult to achieve.

Because section 102(b) grants the leader a grace period of one year, the effective use of strategic disclosure to affect patentability will be almost impossible, and only occur after a one year delay.<sup>187</sup> In a similar fashion, Rule 131 gives the leading firm one year from the time of the laggard's disclosure before section 102 will bar a patent application.<sup>188</sup> For one year, the leader is free to file a patent application, essentially rendering the laggard's strategy ineffective.<sup>189</sup> Furthermore, the laggard's disclosure may help prove nonobviousness under the secondary factors as previously discussed under the conventional laggard's strategy.<sup>190</sup>

At the very least, uncertainty exists in assuming the spoiler role as a laggard.<sup>191</sup> The situations where disclosure will succeed in preempting a competitor's patent are limited at best, and difficult to effectively exploit.<sup>192</sup> The idea of conception is so uncertain at times that a participant may have trouble identifying itself as a conventional or legal laggard.<sup>193</sup>

This inherent uncertainty dictates that strategic disclosure opportunities will be difficult to identify and utilize from the laggard's position.<sup>194</sup> In contrast, strategic disclosure presents itself as a more promising option for leaders.

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<sup>183</sup> Lichtman, *supra* note 27, at 2198.

<sup>184</sup> *Id.* However, this point does not hold the same when dealing with a foreign first-to-file system without a grace period. In such a situation, the publication will bar a subsequent patent application.

<sup>185</sup> 35 U.S.C. § 102(g)(2) (2000) ("A person shall be entitled to a patent unless . . . before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it").

<sup>186</sup> *Id.*

<sup>187</sup> 35 U.S.C. § 102(b) (2000).

<sup>188</sup> 37 C.F.R. § 1.131 (1994); 35 U.S.C. § 102(e) (2000).

<sup>189</sup> Lichtman, *supra* note 27, at 2199.

<sup>190</sup> *Id.*

<sup>191</sup> *Id.*

<sup>192</sup> As noted in the background section of this comment laggards do have the ability to disclose quietly. *Vandenberg v. Dairy Equip. Co.*, 740 F.2d 1560, 1567 (Fed. Cir. 1984); *see also supra* Part II(B). Using this tactic makes disclosures legally public, but obscure enough that rivals will have trouble finding them. Lichtman, *supra* note 27, at 2184. However, to be confident that a disclosure will protect the laggard in this manner requires that the Patent Office find it. *Property Values*, *supra* note 2, at 10.

<sup>193</sup> Lichtman, *supra* note 27, at 2199.

<sup>194</sup> *Id.*

## 2. Strategic Disclosure by Leaders

A leading participant in a patent race may find it advantageous to employ strategic disclosure. In the leader's situation, disclosure can protect his advantage in the patent race.<sup>195</sup>

A leader competing with a legal laggard has no reason to employ strategic disclosure when viewed as an alternative to patent protection.<sup>196</sup> Once the leader has achieved conception, the priority accorded under the American patent system will insure the leader's right to obtaining a patent.<sup>197</sup> Thus, the leader only has to focus on being diligent in its pursuit of reduction to practice.<sup>198</sup> This comment will return to this situation in the proposal, which suggests a different approach when strategic disclosure is viewed as a complement to patent protection.<sup>199</sup>

A leader competing with a conventional laggard faces a different situation and should consider employing strategic disclosure.<sup>200</sup> Disclosure by a leader in this situation can force laggards out of the race.<sup>201</sup> Publication may serve as an indicator to competitors (i.e. laggards) that the leader is far ahead in the race, and the laggards would be better served by dropping from the race.<sup>202</sup> Additionally, disclosure can lessen the expected value of a patent to a point where a laggard's incentive to continue ceases.<sup>203</sup> In either case, disclosure decreases the chance of a laggard

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<sup>195</sup> See *id.* at 2215 (noting several situations in which a leader's disclosure may drive the laggard from the race).

<sup>196</sup> *Id.* at 2204.

<sup>197</sup> *Id.*: 35 U.S.C. § 102(g) (2000).

<sup>198</sup> Lichtman, *supra* note 27, at 2204.

<sup>199</sup> See *supra* Part III(B).

<sup>200</sup> Lichtman, *supra* note 27, at 2204.

<sup>201</sup> *Id.*

<sup>202</sup> Lichtman's formal numeric example explicitly addresses this benefit. *Id.* at 2207-09. The leader has an eighty percent chance of winning, and the laggard has a twenty percent chance. *Id.* at 2207. However, the laggard doesn't know enough to correctly estimate its chances, and believes them to be sixty percent, rather than the actual twenty percent. *Id.* Thus, both participants are willing to remain in the race. *Id.* If the leader discloses information, the laggard is better able to realistically estimate its chance of winning the conception race. *Id.* at 2208. Assuming a minor inadvertent increase in the laggard's ability to win due to the disclosure and a small decrease in the expected value of the patent, the incentive to remain in the race is recalculated. *Id.* The laggard's better information about its chances and the lower patent value will reduce the potential payoff to the point that dropping from the race is a preferred position for the laggard. *Id.* at 2208-2209. The leader has a greater chance of winning, especially when the laggard drops from the race. *Id.*

<sup>203</sup> *Id.* at 2207. Lichtman addresses this benefit with another numeric example to illustrate how the patent value may be diminished to the point where the laggard drops from the race. *Id.* at 2205-07. The leader and the laggard each face the same cost to continue a race to conception, but the leader has a sixty percent chance of winning, and the laggard a forty percent chance. *Id.* at 2205. The leader has an expected payoff significantly greater than the laggard's. *Id.* If the leader discloses information, the expected value of the patent drops and the chance of winning gap is narrowed. *Id.* at 2206. Upon recalculating each participant's expected payoff, the laggard's has dropped below the cost to continue the race. *Id.* Thus the laggard will exit the race, and the leader is better off. *Id.* at 2207. The leader's increased chance of winning will make up for the loss of expected patent value in determining the expected payoff. *Id.*

surpassing the leader.<sup>204</sup> With a laggard driven from a race, the danger of being surpassed is lessened, allowing a leader to continue research at a more efficient pace.<sup>205</sup>

In a “double preemption twist,” a leader can use disclosure as a tactic to defend its own research results.<sup>206</sup> A leader can use the one year grace period of section 102(b) to its own advantage.<sup>207</sup> By publishing first, and then filing the patent application within one year, the leader can preempt a laggard from assuming a spoiler role.<sup>208</sup> However, this tactic may not be attractive because it forces the leader to file within one year.<sup>209</sup>

Other potential dangers exist when a leader employs strategic disclosure. A disclosure may help a conventional laggard gain ground.<sup>210</sup> Similarly, a disclosure may aid the laggard in developing an alternative invention that would be patentable.<sup>211</sup> Additionally, it could serve as prior art and narrow the scope of a patent eventually obtained by the leader.<sup>212</sup> Still, in the leader’s situation, disclosure can protect, and sometimes even strengthen, his advantage in the patent race, and should be considered as a practical protection option.

*c. Analysis of the Implications on the Viability of Strategic Disclosure as an Alternative to Patent Protection*

It appears that strategic disclosure may be more effective when utilized by leaders rather than laggards.<sup>213</sup> A conventional laggard has little incentive to disclose,<sup>214</sup> and a legal laggard’s disclosure will have little, if any, effect.<sup>215</sup> At best it will signal the start of the one-year grace period for the leader.<sup>216</sup>

<sup>204</sup> *Id.* at 2188.

<sup>205</sup> *Id.* at 2205. The speed of research will be “determined more by the relative costs and benefits of bringing the invention to market, and less by the fear of losing” the race to conception. *Id.* However, the leader may have less motivation when the fear of losing is removed, thus slowing the pace of development.

<sup>206</sup> Parchomovsky, *supra* note 29, at 950.

<sup>207</sup> *Id.*; 35 U.S.C. § 102(b) (2000).

<sup>208</sup> Parchomovsky, *supra* note 29, at 950. *Contra* Lichtman, *supra* note 27, at n.70 (“That argument is in error—if a leader were to disclose information in the way Parchomovsky suggests in his piece, those disclosures would not preempt laggard disclosures, they would instead simply start the clock on a one-year section 102(b) bar.”).

<sup>209</sup> Parchomovsky, *supra* note 29, at 950.

<sup>210</sup> Lichtman, *supra* note 27, at 2205. Given the apparent uncertainty involved, a leader could easily misjudge his standing relative to the laggard, and disclose too much information. *See id.* at 2216 (“[Strategic disclosure] assists rivals by giving them possibly valuable information about the invention. . .”). This risk arises because as discussed previously, a sufficient disclosure must meet the enablement standards of the Patent Act. *See supra* text accompanying note 126. Thus, there appears to be some minimum threshold of information that must be provided. Anything at, or in excess of, this threshold may provide a laggard with an unexpected gain in knowledge, thus, closing the gap between leader and laggard. Lichtman, *supra* note 27, at 2216.

<sup>211</sup> Lichtman, *supra* note 27, at 2216.

<sup>212</sup> *Id.* at 2205. Assuming the patent application is not filed within one year of the disclosure, it will serve as prior art. *Id.* at 2186.

<sup>213</sup> *Id.* at 2215.

<sup>214</sup> The conventional laggard has not yet lost the race to conception, and the gains of freedom of action may not outweigh the potential gains from a patent. *Id.* at 2198.

In contrast, a leader may be able to use strategic disclosure to protect his advantage from competitors.<sup>217</sup> Disclosure by a leader may drive competition from the race under some circumstances.<sup>218</sup> But disclosure can benefit a leader in another way if utilized in a role of supporting patent protection on core patents.

### III. STRATEGIC DISCLOSURE CAN BE EFFECTIVELY UTILIZED TO PROTECT A LEADER'S MINOR IMPROVEMENTS ON ITS CORE PATENTS

This part addresses the difficulties that arise under typical strategic disclosure, and a different strategy that lends itself particularly well to a leader's situation. Part III(A) reviews the problems encountered when strategic disclosure is incorporated into a traditional patent race as an alternative to patent protection. Part III(B) proposes a view of strategic disclosure as a complement to patent protection when a leader is competing with a legal laggard.

#### A. *Strategic Disclosure Presents Many Problems When Incorporated Into The Traditional Patent Race*

In light of the analysis from both a laggard's and leader's perspective, employing strategic disclosure in the midst of a patent race is a complicated proposition.<sup>219</sup> Conventional laggards are still in a bona fide position to compete with the leader, and may not have sufficient incentive to assume the spoiler role that initially appears to be a viable option under strategic disclosure.<sup>220</sup> Legal laggards will have sufficient incentive, but the legal rules greatly hinder their use of strategic disclosure due to the preference for the first to conceive under the American patent system.<sup>221</sup>

From a leader's perspective, strategic disclosure may help when competing against a conventional laggard, but the leader only must pursue the invention diligently when competing with a legal laggard.<sup>222</sup> However, if strategic disclosure is utilized as a complement, rather than an alternative, to patent protection, it seems to lend itself particularly well to this latter situation.

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<sup>215</sup> See *supra* notes 168-172 and accompanying text.

<sup>216</sup> See 37 C.F.R. § 1.131 (1994); 35 U.S.C. § 102(e) (2000); Lichtman, *supra* note 27, at 2199.

<sup>217</sup> See Lichtman, *supra* note 27, at 2204-05.

<sup>218</sup> *Id.* at 2204-09.

<sup>219</sup> It must be noted that the possibility of private bargaining between a leader and laggard has not been part of the analysis. Private negotiations could further complicate, as well as diminish the use of strategic disclosure in its traditional role as an alternative to patenting. *Id.* at 2201. For an in-depth discussion of the potential effects of private bargaining, see Lichtman, *supra* note 27, at 2201-04, 2213-16, which suggests that private negotiations might displace strategic disclosure because an agreement would benefit both parties by preserving the surplus created by a patent. *But see* Parchomovsky, *supra* note 29, at 948-50 (suggesting that a leader will likely not bargain, even if it runs the risk of being preempted, because it will have trouble ascertaining the credibility of threats).

<sup>220</sup> See Lichtman, *supra* note 27, at 2198.

<sup>221</sup> *Id.*

<sup>222</sup> *Id.* at 2204.



*B. Strategic Disclosure Can Protect Incremental Innovations on Core Patents When Used as a Complement to Patent Protection*

This proposal returns to the situation of a leader competing with a legal laggard.<sup>223</sup> A leader has no reason to employ strategic disclosure when viewed as an alternative to patenting, because he already has achieved priority.<sup>224</sup> In contrast, when strategic disclosure is utilized as a complement to patenting in this situation, it has the potential to grant sufficient protection without the costs of patenting.

The development of small improvements on core inventions presents a favorable scenario for using strategic disclosure.<sup>225</sup> Whether an invention is a major development or merely a minor improvement should be a factor in deciding whether to pursue patent protection.<sup>226</sup> By publishing incremental innovations to core patents, a firm can achieve the initial patent protection necessary to create a market advantage, and then protect that advantage through publication without enduring the costs of patenting small improvements.<sup>227</sup>

Defensive publishing should primarily be undertaken to support and strengthen patent protection, as it has historically been used.<sup>228</sup> Of course, a major innovation should be patented to reap the rewards generated by the new technology and the instant market advantage created by a patent monopoly. But patenting every minor innovation after that point may prove to be an excessive burden in light of the considerable costs of prosecution compared with a minimal potential gain of patent protection. Alternatively, an innovation may not be part of a company's core business, and thus a cheaper and faster alternative to patenting is desirable.<sup>229</sup>

For each major innovation, there is usually at least one improvement on it.<sup>230</sup> By defensively publishing small, incremental innovations, a company can quickly protect the innovations and preserve the value of a major, core patent.<sup>231</sup> The major

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<sup>223</sup> See *supra* notes 179-82 and accompanying text.

<sup>224</sup> See Lichtman, *supra* note 27, at 2204 ("Having conceived, such a firm need not worry about trailing researchers; the patent system accords priority to the first party to conceive an invention. . . .").

<sup>225</sup> See Buxbaum, *supra* note 1, at 5 ("This is a fast, cost-efficient way to amplify an existing portfolio.") (quoting John Cronin, CEO of ipCapital Group).

<sup>226</sup> *Id.* ("[T]hey must decide whether the invention presents a persuasive business case that's worth the expense involved in patenting.").

<sup>227</sup> *Id.* at 5.

<sup>228</sup> Poynder, *supra* note 11, at 2.

<sup>229</sup> For example, in the Spring of 2001, a telephone headset manufacturer, Platronics, developed technology for reducing microphone noise. *New Economy*, *supra* note 43. The company couldn't use the innovation at that point, but didn't want to let a competitor patent the idea before they had a chance to utilize the new technology. *Id.* Platronics defensively published the invention on IP.com, and put it in the public domain. *Id.* Thus, they prevented other companies from patenting the idea before Platronics could commercialize it. *Id.*

<sup>230</sup> Buxbaum, *supra* note 1, at 5. "You can't come up with a major patent without coming up with improvements at least once." *Id.* (quoting John Cronin, CEO of ipCapital Group).

<sup>231</sup> *Id.*

invention will be protected under patent, while the subsequent publications will protect the core patent by preventing others from patenting an improvement. In this manner, intellectual property can be protected while reducing the substantial costs of patent prosecution.<sup>232</sup>

For larger companies, this type of strategy may be effective with a ratio of two to five defensive publications for each major patent.<sup>233</sup> For smaller companies, the ratio may be considerably higher.<sup>234</sup> This strategy is a cost-efficient approach to garnering intellectual property protection because publication is cheaper and faster than patenting.<sup>235</sup> A company can avoid the costs of pursuing patent protection while maintaining a level of protection on the most important core patent, and freedom of action on minor improvements.

### CONCLUSION

Inventions and improvements thereon must be protected in order to maintain the market advantage they create. This is necessary in order to realize the full value of intellectual property.<sup>236</sup> The traditional manner of protecting intellectual property has been to utilize a strategy of blanket-patenting.<sup>237</sup>

To avoid the downfalls of blanket-patenting, companies are choosing to pursue defensive publishing strategies. By publishing information about an invention, prior art is created that may prevent competitors from obtaining a patent on it because it is no longer novel.<sup>238</sup> By preventing competitors from acquiring patents, defensive publishing offers protection similar to that of blanket-patenting, but at a much cheaper cost.<sup>239</sup>

Because no participant can expect to win every patent race, a better strategy may be to prevent the competition from winning the race.<sup>240</sup> This strategy can be effective in the situation of an incremental improvement on a major patent - the improvement is not economically worth patenting, but still must be protected to maintain freedom of action<sup>241</sup> and safeguard the core patent.

As a basic premise, a leader should compete until the end of the patent race,<sup>242</sup> but greater gains can be achieved by including strategic disclosure in a manner supporting prior patent protection. Whether the invention for which a patent is sought is a core invention important to a company's business, or merely a small incremental improvement should play a role in the protection strategy taken. By

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<sup>232</sup> Defensive publishing can be utilized in conjunction with a core patent to prevent competitors from patenting small improvements, thus preserving the value of the core patent. Poynder, *supra* note 11, at 2.

<sup>233</sup> Buxbaum, *supra* note 1, at 5 (paraphrasing John Cronin).

<sup>234</sup> *Id.*

<sup>235</sup> Buxbaum, *supra* note 1, at 5 (quoting John Cronin).

<sup>236</sup> Burns, *supra* note 4, at 1.

<sup>237</sup> *See generally*, Poynder, *supra* note 11, at 1-2.

<sup>238</sup> *Id.* at 1.

<sup>239</sup> *Id.* at 2.

<sup>240</sup> *See* Parchomovsky, *supra* note 29, at 927, 932.

<sup>241</sup> *See supra* Part III.

<sup>242</sup> Parchomovsky, *supra* note 29, at 932.

defensively publishing small, incremental innovations, a company can quickly protect the innovations and preserve the value of the core patent.<sup>243</sup> Adopting this strategy avoids the prohibitive costs of blanket patenting, and maximizes the value of intellectual property assets for companies both large and small.

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<sup>243</sup> See *supra* note 223 and accompanying text.